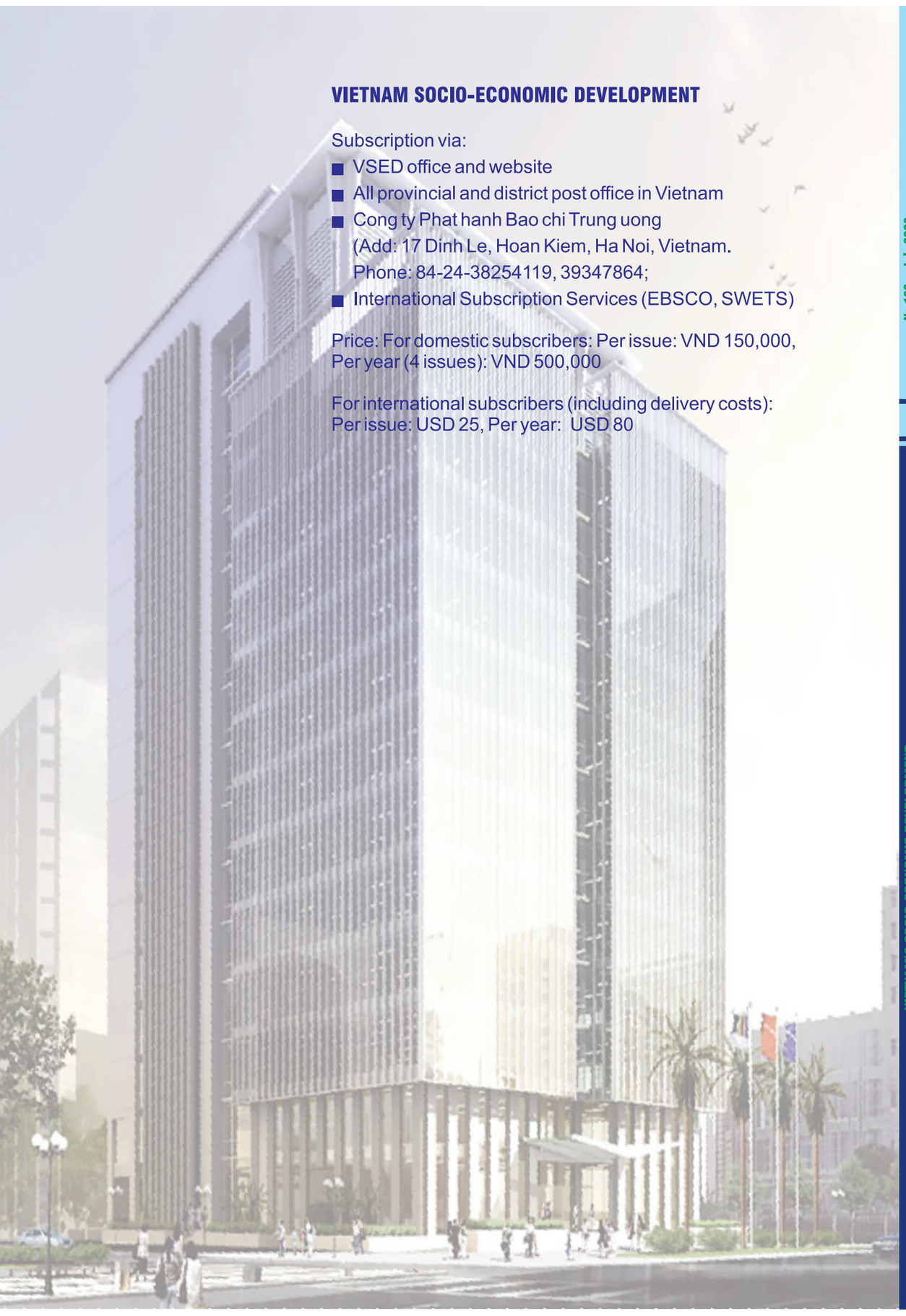

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ECONOMIC POLICY DEBATE

QUANTITATIVE RESEARCH

Developing the Agriculture Insurance in Vietnam: The Current State and Recommendations for the Future Actions[1]

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Abstract

Agriculture is a sector with a comparative advantage in Vietnam. However, climate change, natural disasters and diseases have serious impacts on the performance of Vietnam's agricultural sector. In this context, agriculture insurance can be considered a measure to help sustainably develop the agricultural sector while mitigating the losses caused by risks. This study provides basic theories on risks, risk management and agricultural insurance. By analyzing the current state of agriculture insurance in Vietnam under the

government-supported programs, this study finds that agriculture insurance in Vietnam is still in its infancy. While the goals of the central government in the agriculture insurance programs seem to be highly ambitious, actual implementation can hardly be considered as successful. The main reasons for this poor performance reside in poor information infrastructure for the insurance business; difficulties in production monitoring and disease confirmation; inexperience and low motivation of insurance companies, resulting in poor quality of designing and implementing insurance products; low incentives of farmers themselves for effective risk management solutions. This paper also provides some recommendations for further development of agriculture insurance in Vietnam.

Keywords: Agriculture Insurance, Climate Change, Risk Management, Vietnam.

Introduction

Risks and uncertainty are intrinsic to the agriculture sector, particularly in the stages of production, marketing and sales. Unpredicted events are commonly sourced from extreme weather, natural disasters, diseases, market shocks and price fluctuations. Once happened, they would heavily affect farmers, agriculture and rural development. These risks become even more serious with climate change and increased uncertainty in the international market. As a country greatly exposed to climate change and international market fluctuations, Vietnam agriculture sector has been exposing to serious risks and uncertainties of all kinds. Effectively managing these risks is essential to protect farmers and to ensure sustainable agriculture development.

In this context, agriculture insurance is one of the market-based instruments that can effectively handle risks related to agriculture. Agriculture insurance not only involves farmer households who directly produce agricultural products but also other actors in the agribusiness value chain.

This study aims at: (1) Clarifying key theoretical issues of risk management and agriculture insurance; (2) Identifying key constraints in implementing the agriculture insurance in Vietnam based on the experiences from the insurance pilot program in 2012-2014 period as well as the design and implementation of the insurance program in 2019-2020 period; and (3) Providing recommendations to successfully implement agriculture in Vietnam in the future.

This paper is organized as follows. Section 1 reviews literature on agriculture insurance in Vietnam. Section 2 provides research methodology. Section 3 summarizes basic theories of risks, risk management and insurance in the agriculture. Section 4 analyzes the current status of implementing agriculture insurance in Vietnam. Finally, Section 5 gives key recommendations to boost the agriculture insurance in Vietnam in the future.

1. Literature review of agriculture insurance in Vietnam

There have not been many studies on agriculture insurance in Vietnam due to its underdeveloped status and low attraction to the public. Most of them (Nguyen Ba Huan, 2014; Luong Thi Ngoc Ha, 2014; Bach Hong Van, 2014) were conducted in 2014 when the first government-supported program was implemented under the Decision No. 315/QD-TTg by the Prime Minister of Vietnam (the 315 Program). The authors, in this period, summarized the process of formation and development of Vietnam agriculture insurance market, which was divided into two main stages. The first stage began from 1982 to 2011 (before 315 Program) and the second stage commenced from 2012 to present (after 315 Program)

In the first period before the 315 Program, Vietnam insurance market emerged in some provinces with the participation of domestic as well as foreign insurance enterprises such as Bao Viet, ABIC, Groupama and GlobalAgRisk. The insurance packages and insured products were quite diverse, covering rice, forestation, rubber trees, cattle and dairy cows. Apart from a few successful models such as dairy cow in insurance linking with processing enterprises of Bao Viet and agriculture insurance linking with loans of ABIC, most of the insurance enterprises in this period suffered enormous losses causing all pilot insurance programs to halt. To avoid potential losses, some insurance companies provided only low-risk insurance packages that led to a very low participation rate of farmers. Meanwhile, the government played a weak role in this period, providing only general orientation and encouragement without specific action plans and solid legal system back-up (Nguyen Ba Huan, 2014; Luong Thi Ngoc Ha, 2014; Bach Hong Van, 2014; Dang Kim Khoi *et al*., 2017).

In the second period after the 315 Program, most of the studies pointed out that a deeper involvement of the government in the 315 Program made the agriculture insurance market more attractive. In addition, the promulgation of a number of guiding documents has helped improve the legal system for the agriculture insurance, creating momentum for the operation of agriculture insurance market. However, instead of promoting the market-based mechanism for developing the agriculture insurance market, only two state-owed insurance companies, namely, Bao Viet and Bao Minh were selected basically for non-profit purposes (Nguyen Ba Huan, 2014; Luong Thi Ngoc Ha, 2014; Bach Hong Van, 2014; Dang Kim Khoi *et al*., 2017).

After all, some limitations of agriculture insurance in Vietnam had been pointed out in these studies. Nguyen Ba Huan (2014), Bach Hong Van (2014) and Dang Kim Khoi *et al*. (2017), for example, argued that the main obstacles for developing insurance in the agriculture are: The high-risk nature of the agricultural production, especially in aquaculture; Small and fragmented production scale; and Unstable income. Since farmers have little experience in risk management, they often do not follow production technique standards and have little awareness of agriculture insurance. From the supply-side perspective, operating and managing an agriculture insurance business is costly and risky. There is almost no reliable information base

for an insurance company to make risk assessment, set up its insurance products and carry needed supervision and monitoring work to deal with fraud. The experience and capacity of insurance enterprises remain weak and doing business for non-profit purposes under the government-subsidized program often discourages them from active participation. The legal system, especially the guiding documents related to agriculture insurance is still slowly promulgated and incomplete. Disputes often arise in compensation claims with difficulty in re-settlement procedures. The government is still not clear about how to compensate the losses of insurance enterprises participating pilot insurance programs. In addition, support on post-disaster and disease relief often lowers the interest of farmers in agriculture insurance.

Other studies, by quantitative methods, tried to figure out the relationship between the features of farmer households and their possibilities to take part in agriculture insurance. Luong Thi Ngoc Ha (2014) agued that the production scale, income and accessibility of production support policies (*i.e*. credit and extension policies) of farmers are proportional to their levels of participation in agriculture insurance. Meanwhile, Phan Dinh Khoi and Quach Vu Hiep (2014) pointed out that: education level; ability to participate in technical training; accessibility of information on agriculture insurance; and farmers whose family members are local officers are proportional to farmers' ability to engage in agriculture insurance.

All in all, the literature review shows that the third period of agriculture insurance in Vietnam, which is the second government-supported program under Decree No. 58/2018/ND-CP and Decision No. 22/2019/QD-TTg (the 22 Program) has not been updated. It also has not yet answered the questions that whether experiences through the first and second periods are learned; and the barriers are removed or not in the implementation of the 22 Program.

2. Research methodology

This paper uses intensively different secondary sources of data and documentation regarding the implementation of the various government-supported agriculture insurance schemes in Vietnam. In-depth interviews with key resource persons from the stakeholders such as government agencies, insurance companies, agricultural experts and farmers involving in designing and implementing these schemes are carried out to get the first-hand experience and insights on the issues of policy formulation and implementation. A number of focus group discussions in Ca Mau and Ben Tre provinces are also held to get a better understanding of the specific nature of the agriculture insurance in practices, its constraints and limitations in order to propound meaningful recommendations for improvement.

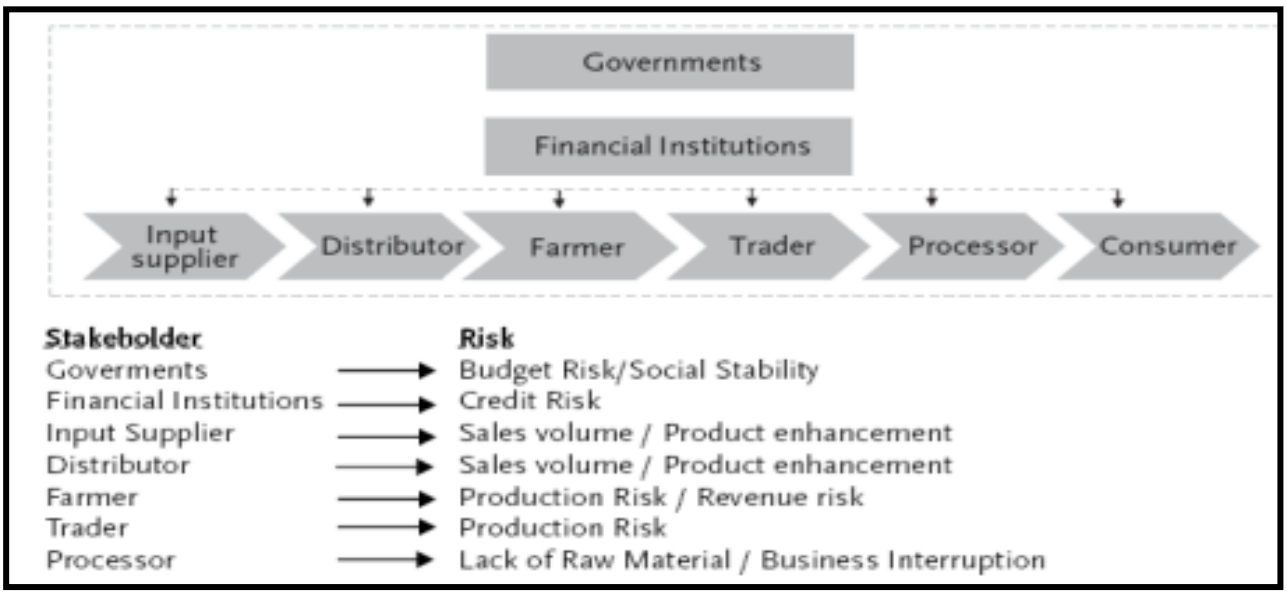
3. Theories of risk management and insurance in agriculture

3.1 Risks in agriculture

Agriculture is subjected to a number of risks and uncertainties that affect different actors in agriculture supply chains in various ways. Figure 1 shows a broader picture of how different

actors interact in a typical agribusiness value chain and related risks that may arise in this process. Farmers supplying agricultural products utilize different inputs, including those of natural resources such as land, water and forest. Governments and financial institutions play central roles in providing crucial credits, capital and public goods, ranging from infrastructure to enable the business environment for producers. Due to the linkage between different players, a risk faced by one of these actors may eventually transmit through the other actors and affects the whole agribusiness value chain from input suppliers to consumers.

Figure 1: Agribusiness value chain and risk



Source: Iturrioz (2009).

According to Stutley (2011), agribusiness risks can be classified into: (1) Weather-related risks; (2) Natural disasters (including extreme weather events); (3) Biological and environmental risks; (4) Market-related risks; (5) Logistical and infrastructural risks; (6) Management and operational risks; (7) Policy and institutional risks; and (8) Political risks. Each type of risk has its own origin and differentiates from each other by the ways it is transmitted and affects the agribusiness value chain. Dealing with each type of risk, therefore, requires different measures and approaches.

3.2 Risk management in agricultural practices

Due to long experience of risks in agricultural production, farmers, especially those living in remote areas, have developed a number of strategies to manage them (Hess and Syroka, 2005; Walker and Jodha, 1986; Mahul and Stutley, 2010). Strategies relating to risk prevention and reduction include: (1) Mixing crops and diversifying livestock or planting corps at different times to be less dependent on only one main source of income and reduce risks from diseases and climate; (2) Participating in non-agricultural job markets or operating non-agricultural businesses to reduce dependence on agricultural production; and (3) Stocking up on agricultural

products, livestock, salable assets and increasing savings to better resilience to risks (Mahul and Stutley, 2010; Hess *et al.*, 2015).

Risk management is also carried out at the community level where measures and strategies to prevent and mitigate risks in agricultural production are implemented (Sommerfled *et al.*, 2002; Bhattamishra and Barret, 2010). Accordingly, the ways used to manage risks are included: (1) Religious organizations, credit institutions and other social organizations to support farmers in preventing risks; (2) Sharecropping contracts between landowners and tenants (Otsuka and Hayami, 1993); and (3) The allocation of grazing zones for livestock to avoid animal feed storage in nomadic areas (McCarthy *et al.*, 1999).

Jaffee *et al.* (2008) distinguished two types of risk management in agricultural production: formal and informal risk management. The formal risk management includes strategies to prevent and mitigate risks based on market instruments and external supports, while the informal risk management, which has a narrower scale, is based on strategies of individual farmers and agricultural production community. According to Stutley (2011), informal risk management is common in developing countries where market-based instruments and the subsidy for agricultural insurance are limited. It is also not an effective solution to address natural disasters because its ability to prevent and mitigate risks mainly depends on individual farmers' and community's responses. Formal risk management, on the other hand, with more advantages, normally applies in developed countries that have large-scale agricultural production and greater budgets for risk management.

3.3 Agriculture insurance

3.3.1 Definition of agriculture insurance

As pointed out previously, risks are always associated with farmers' livelihoods. One of the tools risk management that farmers can adopt is agriculture insurance. The term agriculture insurance is defined as a measure to protect an agriculture business operation (Secretan, 2007). In other words, agriculture insurance is applied to agricultural enterprises and businesses. Types of businesses covered by agriculture insurance include crop, livestock, aquaculture and forestry, but normally excludes building and equipment insurance although these may be insured by the same insurer under a different policy (Roberts, 2007).

Using insurance as a measure for risk management can only be effective under some conditions. Roberts (2007) emphasized the need to understand the limitations and scope of agriculture-insurance. Firstly, agriculture insurance cannot eliminate risks. It is designed to spread risks thought time or across space (across an industry, an economy or beyond the national boundaries in the case of international reinsurances). As a measure to manage risks causing income losses, agriculture insurance cannot be able to increase farmers' income. Secondly, agriculture insurance is also a business form, which means, in principle, it should benefit both insurers and insurance buyers. It is implied that: (1) Insurance should be prudently designed and

implemented; (2) An insurance policy must be in force, with premium paid by the time of the loss event; and (3) Premiums must cover several areas of cost apart from paying indemnities under insurance policies in force.

3.3.2 Barriers in implementing agriculture insurance

The complexity in technical and institutional aspects of the insurance business itself combines with the specific nature of agribusiness in terms of production organization, biological process, reliance on and exposure to external and natural factors, making agriculture insurance even more complicated. The key barriers to successfully introduce agriculture insurance include (Quayyum *et al.*, 2018; Roberts, 2007):

(1) Adverse selection: It happens when farmers at high risk buying and cover those at low risks who have little incentive to participate in the insurance program. The subsidized premium may be a tool to address this issue;

(2) Moral hazard: It takes place when an insured farmer may not do everything possible to avoid or minimize loss. A possible solution to this problem is introducing documentation, standards and monitoring production practices;

(3) Transaction costs: Often, there are required huge costs of marketing insurance policies and the administrative procedures involved in calculating and collecting individual premiums and paying claims. Using the network, mutual insurance and support from local organization and government may mitigate this problem; and

(4) Loss assessment expenses: If loss assessment is made on an individual farm basis, the costs can be very high in comparison to the premium paid, and it may not be feasible for small farms. Information provision, capacity building and network are important mitigating factors to deal with this problem.

3.3.3 Government supports for agriculture insurance

Because of the complexity of the agriculture insurance market from both demand and supply side, the government has an important role to play to ensure the market operates efficiently, and benefits can be achieved by all players. The following arguments are often presented to justify public intervention in agriculture insurance (Hess and Syroka, 2005).

(1) Systematic risks;

(2) Information asymmetry;

(3) Post-disaster assistance;

(4) Underdeveloped agriculture risk market infrastructure and regulatory impediments; and

(5) Low risk awareness and lack of insurance culture.

However, successful implementing a public-support insurance program in the agriculture also faces a number of problems. That includes underdeveloped agriculture risk market

infrastructure and regulatory impediments and low risk awareness and lack of insurance culture are transitory. As time goes by, things will be improved and the urgency of these problems will be faded out lessening the reasons for public intervention. As climate change becomes a more serious challenge for sustainable development, systematic risks may become even more frequent and with more devastating consequences. The role of public intervention in post-disaster assistance, dealing with systematic risks, mitigating the adverse selection and moral hazard resulting from the information asymmetry nature of the insurance market becomes even more relevant and imperative.

It should be noted that excessive and/or inappropriate intervention of the government into the agriculture insurance market may be counterproductive, leading to waste of public resources, unnecessary pressures on the public budget, corruption, misuse of funds and fraud. Post-disaster assistance, for example, may suffer from the 'Samaritan's dilemma'[2] reducing incentives of farmers to adopt preventive measures against risks and reluctant to participate in insurance schemes (Roberts, 2005; Hess and Syroka, 2005; Mahul and Stutley, 2010).

4. The current state of agriculture insurance in Vietnam

4.1 Risks in the agricultural sector in Vietnam

Vietnam is considered as one of the most disaster-prone countries and is seriously exposed to climate change and extreme weather. In fact, the agricultural sector of the country has been suffered serious damages by different types of natural disasters and hazards causing great losses to farmers. A shrimp disease outbreak in Ca Mau in the 2015-2016 period, for example, reportedly affected 72% of the total area of shrimp farming in the province. More than 3700 hectares of shrimp farming were lost while 17 out of 33 shrimp processing factories was working under 40% of their capacity. Although the Vietnam government has a Disaster Relief Program under the Decree No. 02/2017/ND-CP Policies on assistance in agriculture production for revival of production of areas suffering from losses caused by natural disasters and epidemics, most of affected farmers could not get any assistance and compensation from due to cumbersome claim procedures and requirements. Total losses by different types of diseases in the Mekong River Delta in 2015 were estimated to be around USD 18.6 million. Given that the per capita average income of this region in 2018 is about VND 43 million (less than USD 2,000), these losses are sizeable.

Table 1 shows the data on losses from natural disasters in the aquaculture sector in 4 consecutive years at the national level. It is clear that the data from 2015 to 2016 followed a template that differs from data from 2017 to 2018. The latter is based on the data template required by Decree No. 02/2017/ND-CP, which can hardly find any pattern from this dataset**.** This reflects a serious problem in data collection for risk management in the agriculture sector in Vietnam. In fact, there is no official data on losses due to natural disasters and animal diseases that are consistent and reliable. Data collection is one area that needs further attention in the future for effective monitoring and managing agriculture risks.

Table 1: Losses in aquaculture due to natural disasters, 2015-2018

	Unit	2015	2016	2017	2018
Traditional fish farming (*)	ha	1,071	5,488	48,085	5,551
Intensive (catfish) farming	ha	N/A	N/A	1,504	11,032
Shrimp farming	ha	N/A	226	8,180	27
Clam farming	ha	N/A	N/A	2,468	1,611
Other aquaculture farming	ha	N/A	N/A	154	70
Aquaculture farming cage	100 cubed meters	145	226	76,490	1,075
Equipment	unit	39	2,583	3,682	107

Note: (*) the data from 2015 to 2016 stands for the total area of aquaculture farming;

N/A: Not available.

Source: Ministry of Agriculture and Rural Development (2020), compiled by the authors

4.2 Government response to agricultural risk management in Vietnam

The government of Vietnam takes a number of measures to help farmers mitigate the adverse consequences of different types of risks and disasters. The Post-disaster Production Rehabilitation Support Program was institutionalized in Decree No. 02/2017/ND-CP replacing Decision No. 142/2009/QD-TTg on Mechanism, policies of support of plant varieties, livestock, fisheries for production restoration of areas damaged by natural disasters, epidemics and was further amended by Decision No. 49/2012/QD-TTg and Decision No. 1442/2011/QD-TTg. According to Decree No. 142/2009/QD-TTg, the government will assist farmers seriously affected by natural disasters and/or animal diseases by giving direct support through providing crop seeds, animal breeds as well as recovering some of the production losses depending on the level of damage inflicted by the calamities. For example, rice growers in case of natural disasters may receive the support of VND 2 million per hectare if the damage ratio is more than 70% and VND 1 million per hectare otherwise. For the white-leg shrimp *(litopenaeus vannamei)* intensive and semi-intensive farming, the support is up to VND 20 million if the damage ratio is above 70%. One of the largest-scale supports for disaster relief was the support package of around VND 34,000 billion (USD 1.5 billion) for farmers and small- and medium-sized agricultural enterprises, suffering from African Swine Fever (ASF) in 2019. However, it should be noted that these supports are only for disaster relief and rehabilitation but not for loss compensation.

4.3 Agriculture insurance in Vietnam

Insurance in agriculture is a relatively new phenomenon in Vietnam. Before a pilot program on agriculture insurance was launched in 2011, many attempts were made to implement different insurance schemes in the agricultural sector. These early stage schemes were mostly

small-scale experiments done by development partners or supported by the government pilot scheme. Unfortunately, most of them turned out to be premature and ended up with failure. The first agricultural insurance program in Viet Nam was launched by Bao Viet Insurance Company (Bao Viet) in 1982. This program had two parallel schemes: the first one was designed for rice originally in Nam Ninh and Vu Ban districts of Nam Dinh province and extended later to 12 provinces; the second scheme was designed for livestock insurance in three provinces at the beginning but expanded later to six provinces, namely, Ha Tay, Hoa Binh, Ha Nam, Nam Dinh, Ninh Binh, and Thanh Hoa. Bao Viet used the existing structures of the former cooperative system as agents for its contracts. The pilot halted when cooperatives dissolved under the agricultural restructuring program. In 1993, Bao Viet tried an insurance program again by offering rice-yield loss insurance coverage for five years (1993–1997) on a voluntary basis. This program was implemented in 12 provinces, where the local Provincial People's Committees (PPCs) showed strong support. However, Bao Viet faced an aggregate loss ratio of 110% and abandoned the program. Between 1999 and 2011, two French organizations GRET (Group de Recherche et d'Exchange Technologique) - a French non-governmental organization, and Groupama General Insurance Company Ltd - a French company, offered several insurance services for livestock, crops, farm physical assets, the supply of materials, equipment, accidents of agricultural workers and civil liability and shrimp farming in some provinces in Vietnam. However, these two programs were also short-lived because of big losses and low participation. (Dang Kim Khoi *et al*, 2017; Nguyen Thi Kim Anh and Pongthanapanic, 2016).

The overall market share of agricultural insurance is insignificant. The premium revenue was less than 0.1% of the entire non-life insurance business despite some improvements since 2006. In 2019, the premium revenue was about VND 47 billion, accounting for 0.09 % of the total non-life insurance premium. Since has been a tiny fraction, the official data on agriculture insurance was no longer available from Annual Report on Insurance. The main reasons are: (1) The lack of insurance culture from farmers; (2) Traditional agriculture practices; (3) Underdeveloped insurance market infrastructure; (3) The lack of sound and consistent regulatory framework for insurance market; (4) Inadequate technical capacities to deal with complicated issues such as loss assessment and premium determination; and (5) Difficulties to monitor of the complicated biological processes related to growth patterns of insured crops and livestock and particularly aquaculture products.

4.4 The Pilot Program in Vietnam in 2011

In March 2011, the Prime Minister promulgated Decision No. 315/QD-TTg on The pilot implementation of agriculture insurance during the 2011–2013 period (the 315 Program). This program had its objective 'to support agricultural producers to proactively overcome and offset financial losses caused by natural disasters and epidemics, contributing to ensuring the stability of rural social security and promoting agricultural production'(Government of Vietnam, 2011b). A number of legal documents were subsequently adopted to implement this ambitious (see Appendix, Box 1). According to this 315 Program, premium subsidies were given to farmers in

20 provinces in three subsectors crop (rice), livestock (buffalo, cow and poultry) and aquaculture (shrimp and catfish). Specific coverage and premium rates are determined clearly and specifically in related government documents and instruction. The government covered 100% of premium rates for poor farmers, 80% for the near poor, which was later adjusted to 90%, and 60% for other non-poor farmers. Business entities involved in agricultural activities covered by the Program were also entitled to a 20% premium subsidy. Special institutional arrangements were set up with quite a clear division of responsibilities between different government agencies at the central and local levels. Special task forces for supervising and monitoring the program implementation were set up at both central and provincial levels. There were also rooms for non-governmental organizations such as the Farmers' Union to participate in the consultation and monitoring activities of the program (Table 2).

Table 2: Institutional arrangements in the 315 Program

Agency	Main tasks and responsibility
Ministry of Finance (MOF)	- Select insurance companies to implement the pilot program. - Approve rules, premium schedules, insurance commissions, compensation rates for each type of insurance. - Provide guidance on financial and mechanic supports for selected insurance companies. - Provide guidance on documentation, procedures to the pilot implementation. - Provide financial support from the State budget and guide the provincial People's Committees to provide local funding for the pilot. - Inspect, supervise, report and monitor the pilot implementation.
Ministry of Agriculture and Rural Development (MARD)	- Provide specific types of natural disasters and diseases to be covered by insurance in the 315 Program. - Coordinate with MOF in providing guidance on documentation, procedures to the pilot implementation. - Provide standards, requirements for production scale and technologies for sub-sectors under the 315 Program (crops, livestock and aquaculture). - Promulgate standards for farmers streaming from rice, husbandry, and aquaculture to participate in the 315 Program. - Report, monitor, and evaluate the pilot implementation.
Provincial People's Committees (PPCs)	- Set up a Steering Committee for the 315 Program at the local level. - Direct, organize, inspect and supervise the pilot in the locality. - Coordinate with the MOF in providing guidance on documentation, procedures to the pilot implementation. - Report, monitor, evaluate the pilot implementation and propose implementation measures to MOF and MARD.

Source: Compiled from Government of Vietnam (2011b).

The 315 Program had encountered a number of obstacles related to the implementation process. Firstly, there were generic problems associated with information asymmetry, resulting in issues of moral hazard and fraud. Secondly, there were specific problems stemming from the current development level and specific features of the Vietnamese insurance market such as immature regulatory framework and underdeveloped market infrastructures. Finally, there were deficiencies in designing and executing the 315 Program, especially in terms of product design, contract monitoring and enforcement with technical and technological standards and requirements. The premium and claim conditions, for example, were frequently modified creating even more uncertainty for the contract implementation and compliance. One of the reason for this frequent change is the inexperience of insurers in dealing with the biological nature of growth patterns of insured aquaculture products. Furthermore, no effective measures to deal with moral hazard and fraud were in place. The regulatory framework for production monitoring and disease outbreak confirmation was vague. There was also the issue of 'basis risk' when an individual farmer who experiences losses due to an insured event was too localized to trigger an event confirmation that allows a regionally-based insurance payout. The regulation at that time required the event confirmation to be issued only by the Chairman of People Committee at the provincial level, which was operationally infeasible and technically unrealistic. Lack of sound regulatory framework resulted in endless disputes between insurer and insured farmers. Last but not least, the overlap between Post-disaster Production Rehabilitation Support Program under Decree No. 02/2017/ND-CP and the 315 Program made confusion during the compensation process. As stipulated in Decision No. 358/QD-TTg, farmer households can benefit from post-disaster and anti-epidemic support of the government while are still being eligible for insurance claims. Consequently, it may pose a 'Samaritan's dilemma' as mentioned in the previous section.

Table 3: Main results of the 315 Program

	Total	**Crop**	**Livestock**	**Aquaculture**
Total (number of farmers)	304,016	236,396	60,133	7,487
Poor	233,466	180,843	50,572	2,051
Near-poor	45,907	39,715	5,893	299
Non-poor	24,643	15,839	3,668	5,136
Total insured value (billion VND)	7,748	2,151	2,713.2	2,884
Premium received (billion VND)	394	92	84	218
Loss compensation (billion VND)	702	19	13	670
Loss ratio (%)	178.2	20.7	15.5	307.3

Source: Compiled from Ministry of Finance (2014) and Le Thi Ngoc Phuong (2011).

After three years of implementation, the 315 Program had provided insurance to 304.016 farmers with an overall loss ratio of 178.2 %. There was an imbalance between sub-sectors in terms of income structure, subsidized premium and loss compensation across three sub-sectors. The poor farmers were widely covered in the crop and livestock sub-sectors but not in aquaculture, which is easy to explain because most of the farmers who are able to do business in aquaculture are no longer poor. The poverty reduction objective, therefore, needs to be reconsidered in aquaculture. The loss ratios in crop and livestock were low at 20.7% and 15.5%, respectively (Table 3). Regarding the aquaculture sub-sector, loss compensation tripled its collected premium despite the government intervention to adjust both premium and compensation rates by issuing Decision No. 3035/QD-BTC.

Apart from benefiting poor and near-poor farmers in crop and livestock sub-sectors, the 315 Program can hardly be considered successful. It provided, however, a number of useful lessons on how to avoid mistakes in designing and implementing processes while laying out foundation for further regulatory framework improvement to support agriculture insurance in Vietnam.

4.5 The second agriculture program in Vietnam in 2019

After the Program 315 stopped at the end of 2013, there were substantive discussions on whether to continue the insurance program in Vietnam or not and if it continues, what should be adjusted to make it more feasible and effective. There was a suggestion that aquaculture should be excluded from the insurance program given its failure in the 315 Program. After all, the government has issued Decree No. 58/2018/ND-CP on Agriculture insurance and Decision No. 22/2019/QD-TTg on Policies supporting agriculture insurance to launch a new program of agriculture insurance starting from 2020 (the 22 Program).

The objective of the 22 Program is similar to that of the 315 Program. There are little differences in geographical, agricultural product, and insured event coverage. Accordingly, Bac Ninh and Hai Phong provinces have been no longer on the list; catfish is removed from the insured agricultural products; and aquaculture insurance covers only extreme events instead of diseases. There are also changes in the institutional setting that no official task force is required for planning, supervising and implementing the 22 Program. Local government and central agencies are advised to set up an *ad-hoc* working group if necessary. There are also some improvements in the administration procedures in approving and giving certificate insurance contracts. Farmers are no longer requested to get approval directly from PPC and submit it again to insurance agencies to complete insurance documents/contracts. Instead, the insurance agencies can deal directly with the PPC on behalf of contracted farmers. It is expected that the new process will overcome some cumbersome procedures and reduce substantially transaction costs.

There are also significant improvements in the regulatory framework supporting agriculture insurance implementation. New laws and regulations such as Veterinary Law, Law

on Disaster Prevention, and Decree No. 02/2017/ND-CP on Post-Disaster Relief narrowing institutional and regulatory gaps suffered from the 315 Program; clarifying some concepts, interpretation of events and responsibilities of different players in the field; and providing opportunities to build technical and information capacity that are much needed for the successful implementation of the 22 Program. The responsibility to confirm extreme events in the 22 Program, for example, can be delegated to lower levels of authority depending on the nature of the events, which may help to deal with the 'basis risk' problem.

At the same time, there are still enormous constraints needed to be taken into account during the implementation of the 22 Program. The danger of the "mismatch risk' may become even more serious when some of events are excluded from the program, especially in the aquaculture. No effective measures for adverse selection and moral hazard are available yet. The basic market infrastructure remains weak despite the expansion of eligible potential insurers.

5. Conclusion and recommendations for the successful development of agricultural insurance in Vietnam

Agriculture insurance is a reasonable policy of the Vietnamese government to sustainably develop its agricultural sector in the context of climate change and also has high humanity value when it comes to subsiding nearly the entire value of premium for poor and near-poor farmers. However, the process of implementing agriculture insurance has encountered a number of challenges, making its success so far controversial.

The efforts of stakeholders in the recent 22 Program are undeniable as lessons from the 315 Program have been deeply learned. Yet, there are still a number of systematic and core constraints not been solved such as: weak information infrastructure; low capacity to monitor the production process and certify losses caused by natural disasters and disease outbreaks; the inconsistent legal system related to agriculture insurance; insurance package design is not in line with reality in the localities; and insurance companies are still forced to participate in agriculture program for non-profit purposes.

In this study, the authors suggest some recommendations to successfully develop agriculture insurance in Vietnam in the years to come as bellows:

(1) Improving information infrastructure;

(2) Setting up a master plan of implementing national agriculture insurance scheme divided into specific periods;

(3) Studying thoroughly the reality of agricultural production in selected localities to design appropriate agriculture insurance packages;

(4) Narrowing the scope of the insurance program to decrease the loss compensation. Expanding the insurance program in case the selected localities have proved successfully;

(5) Applying the agriculture insurance only for medium- and large-scale household farmers and agricultural enterprises to ensure profits for insurance enterprises while making it easier for monitoring and control;

(6) Increasing the subsidy of premium for ordinary farmers in order to attract their participation in the 22 Program; and

(7) Providing the government's financial and mechanic/technical supports to encourage more insurance enterprises in the insurance market to set up their insurance programs independently without direct intervention from the State.

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Appendix:

Box 1: Milestones in implementing the 315 Program

March 2011	The Prime Minister issued Decision No. 315/QD-TTg on the pilot implementation of agricultural insurance during the 2011–2013 period. This pilot program had its objective 'to support agricultural producers to proactively overcome and offset financial losses caused by natural disasters and epidemics, contributing to ensuring the stability of rural social security and promoting agricultural production'.
2011 June	MARD issued Circular No. 47/2011/TT-BNN providing guidelines on implementing the 315 Program. This Circular specified in requirements on production scale and technological standards for crops and livestock, type of diseases covered by the agriculture insurance and provided guidance on calamity confirmation, assessing losses related to insurance claims.
August 2011	MOF issued Circular No. 121/2011/TT-BTC providing guidelines for the implementation of the 315 Program specifying some paper works, administrative procedures for submission of the request, approval of contract, enforcement and claim procedures.
September 2011	MOF issued Decision No. 2174/QD-BTC, Decision No. 2175/QD-BTC and Decision No. 2176/QD-BTC granting permission for Bao Viet and Bao Minh participate in the 315 Program. Vietnam National Reinsurance Corporation (Vinare) was granted permission for reinsurance of the 315 Program.
December 2011	MOF issued Decision No. 3035/QD-BTC specifying rules, premium and indemnity rates in agriculture insurance for all sub-sectors. Under this Decision, it expanded the scale of insured risks to cover damages from thunderstorms, tornadoes and diseases such as cattle (septicemia), swine (septicemia and cholera) and poultry (Newcastle, gumboro and cholera).
August 2012	MOF issued Decision No. 2114/QD-BTC amending premium and compensation rates and clarifying the process of loss confirmation due to diseases. According to this new regulation, PPC can issue disease confirmation if this event does not reach the level prompting the PPC to take action but had serious damage to the insured region.
February 2013	The Prime Minister issued Decision No. 358/QD-TTg amending Decision No. 315/QD-TTg. It increased the subsidized rate of premium for near-poor households from 80% to 90%, and claimed that households can benefit from postdisaster and anti-epidemic support while still eligible for insurance claims.
May 2013	MOF issued Circular No. 57/2013/TT-BTC to amend and supplement Circular 121/2011/TT-BTC in light of Decision No. 358/QD-TTg.
May 2013	MOF issued Decision No. 1042/QD-BTC to amend and supplement some articles of rules, premium and indemnity rates for aquaculture.
July 2013	MOF issued Decision No. 1725/QD-BTC to amend and supplement rules, premium and indemnity rates for aquaculture.

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[1] This research is prepared by a research team of Vietnam Institute of Economics with the financial support of Friedrich Naumann Foundation for Freedom (FNF) in Vietnam.

[2] This term is coined by James Buchnan in 1975 and describes a situation when a charity or support program may lead to an inefficient behavior of the recipients.

Green Financial System Development: International Experience and Lessons for Vietnam

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Abstract

The development of a green financial system with the support from Government and major financial institutions is crucial to boost green economic development. With an emphasis on green finance, this paper overviews international experience in developing the green financial systems of (1) countries with green finance from both government funding and financial institutions; and (2) countries with strong green finance from the financial institutions. Main lessons learned for Vietnam are: (1) roles of government, large financial institutions and enterprises in green financing are imperative; and (2) the economic restructuring from a brown to a green economy would better promote green financial products through the green finance from the financial market. Finally, key policy implications are provided for Vietnam in the years to come.

Keywords: Equator Principles, Financial Institutions, Green Financial System, Green finance, Vietnam.

Introduction

Since 1986, Vietnam has vigorously implemented its economic renovation (*Doi Moi*). Yet, in spite of attaining significant achievements, its economic development still heavily relies on natural resource extraction and export of raw materials and low value-added products that exacerbate the impacts on the environment and increasingly contribute to climate change. According to the Energy Information Agency, the level of CO_2 emissions from energy consumption of Vietnam is forecasted to increase from over 113 million tons in 2010 to 471 million tons in 2030. In addition, if GDP of Vietnam grows twice and without environment-protecting measures, the pollution level will increase 3 times in the next 10 years and from 4 to 5 times until 2050 (UNFCCC, 2017).

The transition of economic model was implemented by Vietnamese government along with the green growth strategy (UNEP, 2013). According to this strategy, Vietnamese government has proposed three strategic tasks for green growth, namely: (1) Reducing the intensity of greenhouse gas emissions and promoting the use of clean energy, renewable energy; (2) Greening production; and (3) Greening lifestyles and promoting sustainable consumption. To accomplish the goals of the green growth, the role of the government and the financial institutions is particularly important.

Transforming from a brown economy to a green economy becomes one of Vietnam's priorities to sustain its economic development in the future. Therefore, studying the experiences of the US, EU, China, Japan, South Korea and selected developing countries in Asia, Latin America in developing the green economies is worth learning for Vietnam in the long term.

In this paper, experience in development of green financial system, especially in green financing, is taken from two groups of countries, namely, (1) countries with green finance from both government funding and financial institutions; and (2) countries with strong green finance from the financial institutions. The international experience helps identify the key specific characteristics of green financial system in general and green financing in particular of each studied country while determining the possibility to replicate and choose a suitable direction for Vietnam.

This study is structured into three sections. The first section overviews the selected international experience in developing the green financial system, emphasizing the green financing. The second section analyzes the current development of the green financial market and green finance institutions in Vietnam. The last section provides key lessons learned and policy implications for Vietnam to develop the green financial system in Vietnam in the upcoming years.

1. International experience in development of green financial system

1.1 Experiences of countries with green financing from the government and financial institutions

According to Höhne *et al.* (2012), green finance is a concept that includes financial investments to support sustainable development initiatives and projects, environmental products and incentive policies to encourage sustainable economic development. Zadek and Flynn (2013) found that the green finance is often used instead of the green investment. Böhnke *et al*. (2014) defined green finance as all forms of investment and lending with an emphasis on affecting the environment and supporting environmental sustainability. An important element of green finance is to build a green banking system, in which lending and investment decisions are made, which consider and assess the risks of environmental impacts to meet the standards of environmental protection. Tran Thi Thanh Tu *et al.* (2017) introduced the green finance as a full set of forms of funding for technologies, projects, industries or businesses for protecting environment.

- **Experiences of the selected developed countries**

One of the success stories in developing this type of green financial system is the US. In this country, the green bank and green banking activities under the legal support of the State have the decisive role in developing green financial system. The Green Bank Act was officially launched and passed by the House of Parliament in 2005. The Coalition for Green Capital (CGC) as a non-governmental organization established under Article 501 (c) (3), has the function as a bridge between the banks and the initiatives of the green bank. In 2014, the CGC had gained reputation in the Blue banking Institute as a research institution of the green bank, representing the creation of green bank ideas of experts and leaders from more than a half of the states on the around the United States (Nguyen Phu Ha, 2017).

Using the method of interviewing experts in the financial and the energy sector, Chris Juhnke *et al.* (2012) indicated that energy efficiency and distribution market have the potential impacts on evaluating a green bank, based on six criteria: (1) The number of additional projects funded; (2) The cost-effectiveness of the bank; (3) The added benefits provided by the bank; (4) The feasibility of the bank's management; (5) The ease of integration with existing programs of the government; and (6) The political feasibility. The authors pointed out that the presence of green bank helps increase the flow of capital while making the capital cost more competitive, from which the State achieves its goals of clean energy and solves problems plaguing the market.

With an identical approach, a study by Vivid Economics and McKinsey (2011) on Green Investment Bank (GIB) in the US and UK emphasized the role of the GIB founded in 2010. According to the coalition agreement, the British government committed to improve the policy framework and provide financial supports necessary to address the market failures such as fearing risks, high transaction costs and lack of capital. According to the authors, GIB helped attract potential investors, improve the economic efficiency of the projects and share information

to reduce risks. In particular, the evidence of market failures and the chance of GIB's market intervention are as follows:

(1) GIB helped attract the new investors, provide financial supports to increase renewable power sources, and at the same time, reduce carbon emissions into the environment;
(2) The use of energy sources from outside the UK is also an option to reduce carbon emissions in this country, strengthen energy security and long-term competitiveness of the industry. At the same time, GIB also helped mobilize funds for these related projects; and
(3) GIB also supported the waste-disposal industry to minimize using buried waste practices while promote using more commonly thermal treatment to convert waste heat into energy. The analysis showed the efficiency of GIB's intervention in terms of mobilizing capital from the equity and debt markets, facilitating the valuation of risk on financial market through improving the transparency and information for the development of sustainable projects. GIB also played a role to complement the existing policies.

Report on the Commission's Green Finance for environmental inspection in the British Parliament (2014) evaluated the implementation progress of the strategy switching the UK to a greener economy and then draw the necessary adjustments. The report accentuated the need for green finance by synthesizing the opinions of experts who confirm that environmental impacts have important implications in mobilizing capital for green projects. The report also presented a direct funding mechanism by the government for green projects through GIB such as credit guarantee and lending provision at preferential rates through the environmental protection fund. Apart from financial support, the British government also made efforts to dismantle the barriers to green investment through the simplification of procedures, risk management support and skill and training enrichment. The role of government in establishing an overall strategy to speed up the greening process as well as make it more efficient was highlighted in the recommendations of the report.

Focusing on the roles of government and financial institutions in fostering green financial systems has confirmed the success of some Western countries such as the US and the UK. In Asia, South Korea there has been the case that has successfully accelerated green credit flows into its financial system. The South Korean government set up Financial Technology Corporation (KOTEC), a credit guarantee non-profit organization solves the problem of required collaterals for lending projects from commercial banks. More specifically, KOTEC is the only financial institution capable of reviewing and authorizing green licenses for enterprises. Accordingly, a company awarded a green license can enjoy guaranteed amount up to Won 7.0 billion. By 2013, 65% of green enterprises received credit support from KOTEC (Nguyen Thi Minh Hue, Tran Thi Thanh Tu and Tang Thi Phuc, 2017).

- **Experience of South Africa**

Unlike the above-mentioned developed nations, South Africa is one of the countries where the consumption of fossil fuel is the largest in the world. Consequently, a quarter of the

ecosystem of rivers is seriously polluted, leading to the risk of clean water shortage. Despite recent efforts by the government, the progress of environmental mitigation in South African is still slower than many countries in the OECD (Inderst *et al*., 2012). Thus, the government has committed to enforcing the fundamental changes in the economic structure, prioritizing green economy in the national policy.

Regarding the legal framework, to implement greening the economy, the government of South Africa set ambitious goals by reducing carbon emissions by 34% by 2020 and 42% by 2025. In the National Strategy for Sustainable Development and Action Plan, the South African government identified five strategic priorities, including: (1) Strengthening the processes of planning and implementation; (2) Preserving the national ecosystem and using resources effectively; (3) Transiting to a green economy; (4) Community building for sustainable development; and (5) Implementing an effective response to climate change (Hemraj, 2014). White Paper on Climate Change (2011) was a written orientation for candidates of the government to propose growth and action plans in the field of industry gearing the development of green economies. In addition, the government of South Africa developed a series of green initiatives on governance such as requiring pension funds to consider the Environmental, Social and Governance criteria (ESG) as part of the investment impact assessment (Regulation 28); the Code of Investment Guide responsible for the industry in South Africa (CRISA); or regulation requires listed companies to provide a consolidated report on the impacts as well as risks to community and environment.

Regarding resource mobilization, the South African government committed to providing annual budget, incorporating the Climate Change Response Program to implement national strategy not only at central and local levels but also at corporate and organizational levels (Hemraj, 2014). Although it is yet to determine the amount of capital needed, the government of South Africa has invested in ZAR (South African rand) 827 billion on infrastructure projects for the period 2013-2017 and another ZAR 4,000 billion for the next phase by the year 2028 (OECD, 2014). The South African government gave a number of development finance institutions (DFI) specializing in financing projects, the public sector or the population that cannot be able to access the services of the financial system. Typically, to support the development of new industries and value chains, the South African government, through the State Employees' Pension Fund (GEPF) and other retirement funds, mobilizes capital to invest in sustainable development projects.

The South African government also issued bonds to finance green projects whose goals are reducing harmful effects of climate change. Johannesburg was the first city issuing green bonds in 2014 with a total value of ZAR 1.5 billion through the Johannesburg Stock Exchange (JSE). The mobilized capital was financed for projects to reduce greenhouse gases and contribute to building a 'green Johannesburg' (ALCB Fund, 2017). In 2017, the city of Cape Town released another round of climate bonds with a total value of ZAR 1 billion to sponsor a series of

initiatives for climate change mitigation and adaptation of the city. The city government also developed Frame Green Bonds (Phakathi, 2017).

With respect to the greening process of the financial system, the financial sector in South Africa played a leading role in integrating ESG criteria into its operation. In spite of being less prioritized, these three pillars have recently become more important due to raising awareness of the economic benefits of green technologies and industries as well as environmental risks.

The South African government has also encouraged banks to apply the principle of 'sponsors' responsibility' to develop and manage the ESG standards to participate in international innovation such as the Principle of Financial Innovation, the United Nations Environment Program, the Equator Principles or the Sustainable Banking Association of South Africa (BASA). The four largest commercial banks in South Africa have applied the Equator Principles to identify, assess and manage ESG risks, which is worth USD 10 million. The ability to implement the Equator Principles improves the definition of bank risk and the risk assessment process, which creates new standards for banks to evaluate their potential borrowers. According to the Equator Principles, the lending projects that do not meet the requirements of ESG standards will be rejected by the management system.

- **Experience of China**

In general, China has not successfully developed its green financial system by the government and large financial institutions. Zhang *et al.* (2011) monitored the implementation of green credit policy in China from the top-down and bottom-up approaches and at national as well as regional level. The study showed that the green credit policy in China was not fully carried out. The main problems are vague implementation standards and insufficient data on the environment to influence the most polluted and energy-consumed industries. Although at present, the Chinese government has recognized the environmental risks and vigorously enacted more urgent policies, addressing environmental issues in this country somewhat becomes better when the government use of economic tools instead of administrative measures, of which green credit policy is one of the important tools.

In another study by Jin and Mengqi (2011), the green credit policy in China has achieved remarkable achievements in saving energy, reducing emissions and optimizing the industrial structure. Ironically, the collusion between businesses and local authorities has created a huge gap between expectations and reality of green credit policy implementation. Banks implementing the green credit policy by offering preferential interest rates were attributed to profiteering policy.

Aizawa and Yang (2010) analyzed changes in green policy taken by China to tackle the environmental problems include green taxes, green credit, green insurance and green security policies. The authors found that among the mentioned green policy tools, green credit is the most advanced, with the sharing responsibility of three state bodies (Ministry of Environmental

Protection, People's Bank of China and the China Banking Regulatory Commission). This policy is implemented in the fourth year of a five-year plan targeting environmental protection that Chinese leaders put forward, and proven capability against the global financial crisis of the Chinese economy.

Due to overheated economy, China has faced to a number of problems such as: energy overconsumption, exhausted of natural resources, pollution, ecological imbalance and social inequality. Despite these problems, China has taken important steps towards improving the green financial system for three goals of green economy development. It solved partially the environmental problems for three decades. Yet, the evolution of China's financial system has encountered many difficulties, especially in improving the legal framework, reducing the overlap of state management and synchronizing development policies of financial green. Besides, the difficulty in resource mobilization is also an unresolved problem in the short term. As estimated by UNEP, within the next five years, China will need about USD 350 billion to invest in green projects annually; however, its financial sources currently only meet around 15% of total demand (Nguyen Thi Hong, 2017).

The research of Nguyen Thi Minh Hue and Tran Thi Thanh Tu (2016) found there were huge efforts of Chinese financial institutions, applying in the Equator Principles. Accordingly, lending projects are only financed if their economic benefits are balanced with environmental and social benefits. However, the operation of the commercial banks in implementing a green credit policy encountered a number of problems. Firstly, the legal system lacked consistency because the green credit policy was only a guideline rather than a mandatory practice, thus, some banks did not follow this policy and were steered by profit without being punished. Secondly, poor law enforcement induced the inefficiency of green credit policy in China. There has been the existence of local protectionism in profitable industries- contributors of majority to the government budget. Thirdly, there has been the existence of misinformation between borrowers and banks in implementing green credit policy ((IFC, 2018).

1.2 Experience of countries with green financing from financial institutions

Some developing countries, to different extents, provide green finance, including microfinance largely through financial institutions. In Romania, the green investment is still a challenge (Dova and Negulescu, 2014). Companies and organizations can get access to green investment on the basis of eight areas related to sustainability, including: energy efficiency, smart technology, innovation, competitive markets, green buildings, green finance, green culture and new regulations on green investment. Financed projects are eligible only if they assure environmental and social responsibility. Mihaela *et al.* (2014) found that Romanian banks were active in providing green finance services to companies because of fierce competition pressure domestically and internationally. This forced them to add social and environmental responsibility to borrowers.

Unlike Romania, Bangladesh is one of the least developed countries, heavily influenced by the world environmental pollution caused by industrialized Western countries. In this situation, Bangladesh's financial sector has played as a key investor of the economy, requiring enterprises to build strategies and action plans. The initiatives in the form of green finance were taken throughout the economy by banks and nonbank financial institutions. It is noteworthy that in Bangladesh, only domestic commercial banks and foreign commercial banks have applied the green bank guidelines and funded a number of green projects, while State development banks were not so active (Ullah, 2010). The Bangladesh Bank issued the circular to regulate this activity. Accordingly, banks were asked to build their own green bank policies.

Like Bangladesh, banks and other financial institutions in India have not had many initiatives in promoting green finance (Sahoo and Nayak., 2008). India is experiencing rapid growth propped up by the industrial sector while facing a great challenge in controlling the impacts on the environment. The role of Indian banking industry in controlling of environmental damage is extremely important because it is the most important financial resource. Originating from traditional banks, banks in India realized their environmental and social responsibility when providing loans. They made their loan decisions on assessment of the environmental and social impacts of lending projects. In other words, integrating the environmental and social criteria into each lending project may reduce the negative impact of credit provision activities while leading businesses towards sustainability (Bihari, 2011). A company can only receive loans when all safety environment standards are abided by.

It is noteworthy that the Institute of Development and Research and Banking Technology (IDRBT) by the Reserve Bank of India (RBI) launched the guidelines for banks to implement strategies to improve the environment. IDRBT proposed a standard guide rating the efficiency of banks whose infrastructure and operations were put into consideration. IDRBT coined the term 'Green Coin Rating' to evaluate banks based on the rate of carbon emissions from their operations, the amount of reuse, and green concepts that are used in the maps and directions of banks' buildings and computers, servers, network, printer, *etc*.

In summary, while both government support and financial institutions are both important in funding the green projects in many developed countries, the latter are crucial in developing countries. With their important role in capital mobilization, financial institutions help gradually shift capital flows from the brown to the green investment sector, helping mitigate the environment emission into the economy.

2. The current development of the green financial market and green finance institutions in Vietnam

Vietnam has recently taken the first steps to develop green finance initiative to seek sustainable development. Green finance is an important instrument in green growth strategy in the country. With the promulgation of the action plan of the State Bank of Vietnam (Decision

No. 1552/QD-NHNN) and the Ministry of Finance (Decision No. 2183/QD-BTC) in 2015, an initial framework for financing the green growth has been shaped.

The action plan of green finance in Vietnam is a part of the National Strategy for Green Growth 2020, emphasizing the important roles of the State Securities Commission (SSC) and the Stock Exchanges of Vietnam in developing green capital markets and green financial products. Since 2012, SSC in collaboration with IFC, Organization Initiative Global Reporting (GRI), HSX and HNX have set up and implemented many training programs to enhance the capacity of listed companies on environmental, social governance and information disclosures. Particularly, provisions on social and environmental information disclosures regulated by Circular No. 155/2015/TT-BTC of the Ministry of Finance on guiding information disclosure on the securities market marked the efforts of the management body in building the first and important foundation for a green stock market. HSX also constructed of Environmental - Social - Governance (ESG) indicators to raise awareness of the investors towards sustainability, enhance the listing standards, creating standards for the transparency of listed companies and securities market (SSC, 2015).

In 2015, the Ho Chi Minh City Stock Exchange (HSX) and Hanoi Stock Exchange (HNX) officially became partners of the Sustainable Stock Exchanges (SSE) initiative of the United Nations, together with 19 leading stock exchanges worldwide. By joining SSE, HSX and HNX have committed to share and promote practices related to sustainable development and corporate governance for listed companies (IFC, 2015).

Additionally, the international financial investors' interests in investing green bonds of is also growing. The majority of green bonds on the present market are issued by the international financial organizations such as IFC, World Bank, the European Development Bank and other regional development banks to mobilize international capital for funding projects combating climate change and reducing greenhouse gases (World Bank, 2010). According to the calculations by UNFCCC (2017) Vietnam suffered losses from climate change of USD 15 billion annually or equivalent to 5% of GDP in 2010, and 11% of GDP in 2030 if no action is taken. Therefore, the government set a target of 100% of new investment projects in compliance with the regulations on clean technology by 2020.

In addition, with the support of the GIZ, SSC has implemented training programs and capacity building for investors participating in the green bond market and having solutions to attract investment funds, insurance companies, pension funds, *etc*., to join in the capital markets (IFC, 2015).

It can be seen that, on the basis of the action plan (Decision No. 2183/QD-BTC) for the 2016-2020 period of the Ministry of Finance and the National Strategy for green growth to 2050 of the Government, the deployment of green finance in Vietnam can begin with the establishment of the green bond market.

Table 1: International projects on green finance development in Vietnam

Project	Sponsor/collaborator	Content
The EU supports public finance modernisation in Vietnam (EU-PFMO)	EU and GIZ	- Developing an institutional framework for the planning and implementation of the state budget to be improved in line with international practice. - Developing policies and institutional framework to strengthen the fiscal decentralization and public fund management capacity of local governments, focusing on the poorest provinces with large ethnic minorities. - Improving state budget management through developing medium-term revenue and expenditure framework and putting the state budget expenditure more closely with national policy priorities.
Constructing social and environmental risk assessment tools	IFC and the State Bank of Vietnam	- Constructing social and environmental risk assessment tools in 10 specific sectors including: agriculture, chemicals, construction and infrastructure, energy, food processing, textiles, petroleum, waste treatment and mining industry - Constructing the environmental and social risk assessment manual.
Constructing the standards of Equator Principles	WB and ADB	- Providing a guideline for financial institutions aiming at identifying, assessing and managing social and environmental risks in the financing process.

Source: The authors' compilations from IFC (2015).

It is important noting that Vietnamese green financial system is still in its infant development. To date, the green financial system in Vietnam has initially been formed with a number of components and single parts of the system such as a few of green financing instruments have been released but with limited scope and quantity (IFC, 2015); a limited number of banks have provided the green bank services but at a low level on a five-level scale of green bank (Tran Thi Thanh Tu and Tran Thi Hoang Yen, 2016); a number of legal documents have been enacted on the green credit and green bonds but their enforcement is very limited (the State Securities Commission, 2015). The development of a green financial system with central government as the right choice and suitable for Vietnam green economy. On that basis, the government will issue supporting policies to further promote the participation of financial

institutions to invest in green projects. Therefore, developing a green financial system in accordance with international practices has important implications for Vietnam's national strategy on green growth by 2050.

3. Lessons learned and policy implications for Vietnam

Based on international experience and the current status of the green finance development in Vietnam, main lessons drawn and policy implications for Vietnam to boost its green financial system in general and green financing in particular are as bellows.

Firstly, it is important that the government should take the leading role in fostering its green financial system in general and green financing in particular. Green growth is defined as an integrated framework to restructure the economy by requiring polluted industries upgrading their technologies and methods of production towards green development. Green growth strategy in Vietnam is a long-term approach to reduce greenhouse gas emissions, promote the use of renewable energy, environmental-friendly production activities and propagate green lifestyles and sustainable consumption.

The international experience has proved that the role of government from a top-down approach is crucial to the success or failure of restructuring from a brown to a green economy. The public policy such as public procurement and investment expenditure if ineffective will heavily influence on greening the economy.

In order to improve the efficiency and transparency of budget revenue and expenditure, Vietnamese government should focus on:

(1) Building the institutional framework in the planning and implementation of the state budget that is in line with international practices;
(2) Designing policy and institutional framework to strengthen the fiscal decentralization and public financial management capacity of local government, focusing on the poorest provinces with large ethnic minorities; and
(3) Developing a framework of medium-term expenditure closely linking with national policy priorities to improve the state budget expenditures.

Secondly, developing Vietnam's green financial system should consider the crucial role of government and large financial institutions as the focus to attract green capital. In the early stage of the green development and in the context of hard budget conditions in Vietnam, commercial banks and stock markets should play the important role in developing the country's green financial system. With their role and functions, these two finance channels can efficiently mobilize green capital such as green bonds and green capital from investors, especially from international organizations/funds.

Thirdly, it is crucial to improve the legal and policy framework for developing the green financial system. In Vietnam, rules and legal documents have shaped initial framework for the

development of green financial system; nevertheless, they only provide with insufficient guidelines and resources to realize the green financial system goals. In addition, regulations on green finance are still inadequate, lacking efficient green investment policy incentives and establishment of the financial intermediary channels.

Apart from the regulations on the tax incentives, the environmental impacts of the projects regulated in the law on environmental protection should also be concerned by the government and the banks. For example, 'Best Available Technology' (BAT) - the technology of production and services meeting output standards for particular processes to protect the environment - is a practicable environmental option, fostering green development in the country.

Fourthly, formulating ESG criteria is important. Applying of ESG criteria is the tendency that many stock markets in developing countries are following to attract green capital from non-profit organizations (NGOs) and international funds. Corporate governance and management of environmental and social impacts have always been considered a measure of enterprise efficiency. As a result, investors are increasingly interested in ESG criteria and the information on social and environmental responsibility of listed enterprises to avoid investment risks and make investment decisions.

Fifthly, developing countries like Vietnam should pay due efforts in diversifying the green financial markets and green financial products. Experience of many countries in the world show that all types of green financial markets are basically derived from the financial market, for example, the carbon market, bond market, green and blue stock market. However, in Vietnam, these markets are at their infant stage of development. The green bonds are issued based on government bonds to mobilize capital for green projects. Therefore, in order to promote the bond market, it is necessary for all stakeholders to participate in and take action synchronously, including: the government, Ministry of Finance, the State Bank of Vietnam, development banks, commercial banks and international funds.

Besides, the green financial products on the market need to be more diversified. Issuing green bonds needs to pilot in selected localities, having great potential for sustainable development projects such as wind power, solar power and waste treatment. Furthermore, diversifying the green financial products also helps attract influxes of preferential loans such as ODA.

Finally, on the basis of international experience, lessons from developing a green financial market, green financial products, green capital and social and environmental information disclosures, etc., should be drawn to create the premise for developing an efficient green financial market in Vietnam in the future.

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Solutions to Promote Production and Consumption of Safe Vegetables in Ben Tre Province

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Abstract

This article assesses the reality of production and consumption of safe vegetables in Ben Tre province. According to data from the survey on safe vegetables' production and consumption in Ben Tre province in June 2019 and secondary data from reports of Ben Tre Department of Agriculture and Rural Development from 2016 to 2018, safe vegetable production and consumption activities tend to increase in both cultivated area and output. Yet, the safe vegetable production volume and demand are still limited due to the small and fragmented production scale, less diversified product categories, weak supply chain linkages, and low trust of consumers in safe vegetables. Finally, this article provides solutions to promote safe vegetable production and consumption in the Ben Tre in the future, including: planning and implementing safe vegetable production projects; defining clearly responsibilities of stakeholders in the Four-stakeholder linkage Model; creating and promoting safe vegetable brands; and improving trade promotion activities.

Keywords: Distribution Channel, Ben Tre, Four-stakeholder Linkage Model, Safe Vegetable Production and Consumption.

Introduction

Safe vegetables (hereinafter referred to as SVs) mean products of fresh vegetables (including all types of edible vegetables: leaf, body, tuber, fruit, seed, assorted edible mushrooms) produced, harvested, preliminarily processed, packaged and preserved in accordance with the technical standards to ensure that the microorganism or toxic chemical residues are below the permitted maximum limits as prescribed in Appendices 1, 2, 3 and 4 of the Regulation on Management of Safe Vegetable Production and Certification (Ministry of Agriculture and Rural Development, 2007). Accordingly, SVs must ensure the residual level of the following substances must not exceed the permitted standards: chemical drugs; the number of microorganisms and parasites; nitrate (NO_3) and heavy metals (lead, mercury, arsenic, zinc, copper, etc.).

Put differently, the production process of SVs still uses inorganic origin factors such as fertilizers and pesticides but with the prescribed dose, strictly follows the isolation time and uses only permitted types of drugs, which are listed to ensure that it does not affect consumers' health and the environment.

Studies related to SV production and consumption currently focus on three issues including:

(1) Regulations and policy frameworks as well as the role of the State in SVs production and consumption are the focus of international institutions' reports. Typically, the World Bank's Vietnam Development Report 2016 not only mentioned general issues of food safety as a hotly-debated topic but also provided some insights and assessments on the current food safety management regulations in Vietnam;

(2) Current status, trends, prospects of SV production and consumption in provinces are the topics studied by researches. Le My Dung (2016) assessed many issues but not focused clearly on the value-added in the linkage of SV production and consumption which is a key issue to improve and develop SV production and consumption in the future;

(3) Besides, issues such as factors affecting the SV production and consumption were analyzed by studies, emphasizing the linkage between production and consumption. For example, Wannamolee (2008) and Mushobozi (2010) showed that components in the agricultural supply chain including producers, processors and consumers (or buyers) play important role in promoting SV production and consumption.

In Ben Tre, studies related to SVs production and consumption in the province are very few. However, the gap becomes narrower when the People's Committee of Ben Tre Province started implementing the 'One Commune-One Product' (OCOP) Program from 2018 to 2020 and

orientation to 2030, to restructure the agricultural sector and as a step to implement the central government's Decision No. 899/QD-TTg on Approving the Scheme on Restructuring Agriculture Sector Towards Raising Added Values and Sustainable Development (Prime Minister, 2013). However, despite promulgating a number of legal documents encouraging the development of SVs' production, the proportion of SV cultivated area compared to that of normal vegetables in the province is still insignificant due to many difficulties in both production and consumption terms. Hence, providing solutions to improve the efficiency of SV production and consumption in Ben Tre province imperative.

Apart from the conclusion, this research: (1) Summarizes policies on SV development in Vietnam; (2) Analyzes the achievements as well as limitations of SV production and consumption in Ben Tre during the 2016-2018 period; (3) Point out the causes of limitations; and (4) Proposes solutions promoting SV production and consumption in Ben Tre in the years to come.

The data in this article are aggregated from reports, statistics and survey results of 150 households producing vegetables (70 households producing ordinary vegetables and 80 households producing SVs/VietGAP) in different sales (single household, cooperative group/cooperatives and household enterprise) in 03 communes, namely, My Chanh, An Hoa Tay and Tan Xuan of Ba Tri district, Ben Tre province; and 90 agricultural local officers (from both commune, district and provincial levels) in Ben Tre; 20 people involving in supplying SVs to the market; and 10 experts in SV production and consumption. Statistical, descriptive, analytical and comparative methods are applied in this research methodology.

1. Overview of policies on encouraging production and consumption of safe vegetables in Ben Tre province

As a vulnerable province heavily affected by climate change, sea level rise and saline intrusion, Ben Tre has provided a number of fundamental solutions to actively cope with these hardships, protect lives, properties and livelihoods of its residents. Implementing the project of Restructuring the Agricultural Sector Towards Improving Added Value and Sustainable Development of the People's Committee of Ben Tre Province (2013), many low-yield rice cultivated areas in Ben Tre province have been converted into planting vegetables (including SVs), fruit trees, animal husbandry and aquaculture in combination with specialized cultivated areas of high economic efficiency.

Key regulations supporting the SV producing and consuming of farmers/households, co-operatives and agricultural enterprises at central and local levels include in Box 1.

Box 1. Legal documents on safe vegetable development

The legal documents supporting SV production and consumption at central level:

- Decision No. 01/2012/QD-TTg dated January 9, 2012 of Prime Minister on Some Policies Supporting the Application of the Method of Good Agricultural Practices to Agriculture, Silviculture and Aquaculture;

- Decision No. 62/2013/QD-TTg dated October 25, 2013 of Prime Minister on Policies to Encourage the Cooperation and Linkage the Production with Consumption of Agricultural Products, Establishment of large fields;

- Decision No. 68/2013/QĐ-TTg dated November 11, 2013 of Prime Minister on Supportive Policies to Reduce Agricultural Losses;

- Decree No. 210/2013/ND-CP dated December 19, 2013 of the central government on Incentive Policies for Enterprises Investing in Agriculture and Rural Areas.

The legal documents supporting SV production and consumption at local level (Ben Tre):

- Project No. 6227/DA-UBND dated December 18, 2013 of People's Committee of Ben Tre province on Restructuring the Agriculture Sector towards Increasing Added Value and Sustainable Development of Ben Tre Province from 2013 to 2015 and towards 2020;

- Resolution No. 17/2015/NQ-HDND dated December 4, 2015 of People's Council of Ben Tre province on Policies to Encourage the Cooperation and Linkage the Production with Consumption of agricultural Products, Establishment of Large Fields in Ben Tre Province;

- Resolution No. 03-NQ/TW dated August 5, 2016 of Ben Tre Provincial Committee of the Party on Building and Completing the Value Chain of Key Agricultural Products in Ben Tre Province from 2016 to 2020 and Orientation to 2025;

- Resolution No. 07/2016/NQ-HDND dated August 3, 2016 of the People's Council of Ben Tre province on Specific Policies to Encourage Enterprises to Invest in Agriculture and Rural Areas in Ben Tre Province;

- Decision No. 41/QD-UBND dated September 1, 2016 of People's Committee of Ben Tre province promulgates the Regulation on Principles, Conditions, Subjects, Dossiers and Procedures for Implementing Policies to Support Co-operatives and the Linkage in Production and Distribution of Agricultural Products Associated with Enterprises in Ben Tre Province;

- Decision No. 1186/QD-UBND dated June 5, 2018 of Ben Tre's Provincial People's Committee on Approving the Outline of A National Program: One commune-One Product in Ben Tre Province from 2018 to 2020;

- Program No. 10-CTr/TU (Program 10) dated April 28, 2016 of Ben Tre's Provincial Party Committee on Co-start-up and Business Development in the District.

Source: Compiled by the authors.

The above documents have stipulated many policies encouraging SV production and consumption in Ben Tre including:

(1) Advertisement and procedures support: Subsidizing 100% the costs of publishing and announcing the establishment of enterprises with new investment projects in Dong Khoi newspaper for three consecutive editions; Supporting posts of the business introduction information on the website of the Investment Promotion Center; Supporting the implementation of procedures for implementation investment incentives in accordance with the law;

(2) Investment support in SV and fruit production areas implemented under the good agricultural production practices (VietGAP): Investors investing SV and fruit production projects complying VietGAP standards are funded by the provincial budget up to 50% of investment value per project, and the maximum financial support amount is up to billion 1 VND per project with the purposes of building factories, buying machinery, packaging and preserving equipment or installing net houses and automatic supply water systems;

(3) Fee support: Hiring competent agencies to access to be re-granted safety product certificates is subsidized 50% for the first time and 25% for the second of total fees; and

(4) Support for human resource attraction and training programs: Training costs of legal regulations related to business and investment are subsidized 100%.

It can be said that the above policies have created the basic legal foundation for the development of SV production and strengthen the linkage between SV production and consumption in Ben Tre province.

2. The current status of safe vegetable production and consumption in Ben Tre province

2.1 Achievements

Policies promoting the development of SVs in Ben Tre have achieved positive results in terms of production, consumption and linkage between the production and consumption of SVs.

Firstly, the SV production area and output volume in Ben Tre have increased compared to previous period.

Table 1: Safe vegetable production area and output volume in Ben Tre, 2016-2018

Target	2016		2017		2018	
	Production Area (ha) /Output (ton)	Proportion (%)	Production Area (ha) /Output (ton)	Proportion (%)	Production Area (ha) /Output (ton)	Proportion (%)
Normal Vegetables	5,890/116,680	96.5	5,870/115,310	96.3	5,876/118,164	96.1
SVs	214/1,540	3.5	226/1,730	3.7	239/1,970	3.9
Total	**6,104/118,220**	**100.0**	**6,096/118,040**	**100.0**	**6,115/120,134**	**100.0**

Source: Department of Agriculture and Rural Development of Ben Tre province.

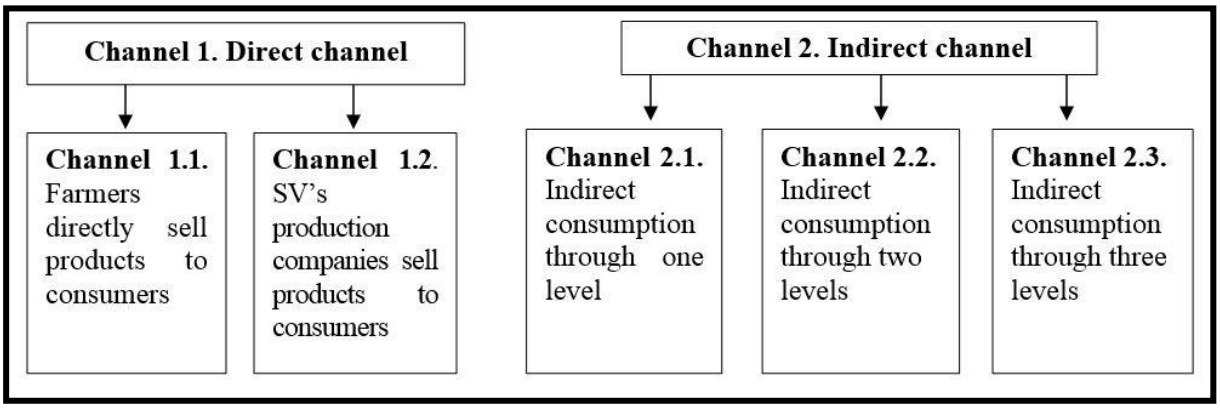
Previously, vegetables were cultivated throughout the year, but from 2016 to 2017, the total vegetable production area and output decreased from 6,104 ha and 118.220 tons to 6.096 ha and 118.040 tons, respectively (see Table 1). Such decrease is mainly because of extreme weather events, causing the increase in rainfall floods in some areas and farmers shift to other corps such as coconut, perennial crops and grass for livestock, etc.

Therefore, to maintain livelihoods adapting to climate change, farmers have initially transformed into SV cultivation. As a result, the SV production area increased from 214 ha in 2016 to 239 ha in 2018. In parallel with the increase in SV production area, the SV output volume also grew from 1.540 tons in 2016 to 1.970 tons in 2018 (see Table 1). This trend shows that the support policies of Ben Tre province for SV production and consumption have initially played a role.

Secondly, Ben Tre province has built a linkage chain in SV consumption through different channels.

SVs in Ben Tre are simultaneously selling through two main distribution channels as follows:

Figure 1: Channels for consuming safe vegetable products in Ben Tre



Source: Discussion with enterprises, cooperatives and farmer households producing and supplying SVs in Ben Tre.

Channel 1. As a direct distribution channel, there are two ways for farmers and/or SV production companies to directly sell SVs to consumers.

Channel 1.1. Farmers directly sell SVs to consumers at the markets where they live. In this channel, farmers can sell SVs with the highest price (equal to retail price) but have bear transportation costs, and the selling process may take a lot of time and effort. The selling price shall change contingent on the market fluctuation (the price in the early morning is higher than that in the afternoon, spoiled SVs shall be dumped). Revenue from this channel is unstable, and SV consumption at markets always takes a long time, therefore, reduce the investment time for expanding production scale.

Channel 1.2. SV production companies sell SVs to consumers through their retail systems. These companies themselves producing SVs or make contracts with cooperatives to maintain their SV supply to the market. SVs consumed in this channel are at good quality (because of meeting VietGAP standards) and sold at a high price. The SVs producing from farmers or households or cooperatives are bought by enterprises at a more stable price as committed in the singing contracts.

The advantages of Channel 1 are the economic benefit along with good quality and strengthened linkage in Four-stakeholder (FSL) model (producers/farmers, scientists, local authorities and enterprises). According to the survey's results, the selling price of SVs through this channel is higher from 35% to 55% than ordinary vegetables.

Channel 2. As an indirect distribution channel, there are three ways to indirectly sell SVs to consumers as follows:

Channel 2.1. Indirect consumption through one level. In this channel, cooperatives consume a part of members' products and re-sell to hotels or restaurants. Most of the SVs consumed through this channel are sold in Ben Tre market and farmers have to pay some fees to cover transaction and transportation expenses. In return, they are assured of stable consumption volume and negotiated price based on market prices and harvested seasons. According to the survey's results, the selling price of SVs through this channel is higher from 35% to 50% than ordinary vegetables.

Channel 2.2. Indirect consumption through two levels. In this channel, cooperatives consume a part of members' products and re-sell to commercial enterprises. Farmers have committed to ensuring their SV quality and be monitored by enterprises during the production process. Enterprises sell SVs to supermarkets/hotels/restaurants under their brands and reputation. The quantity and price were negotiated before making transactions and rarely change. According to the survey's data, the selling price of SVs through this channel is higher from 35% to 40% than ordinary vegetables.

The advantages of Channel 2.1 and 2.2 are stable SV output and a more fixed price by negotiation in advance, thus, making farmers more proactive to produce and expand production scale.

Channel 2.3. Indirect consumption through three levels. In this channel, SVs from farmers are collected by traders and then passed to consumers.

Advantages of Channel 2.3 are the larger SV output volume, the shorter transaction time compared to the direct distribution channel and low transportation fee because the SVs are sold at the field the farmers. According to the surveys' results, traders often make calculations and fix the purchase prices based on weather factors, quantity and their consumption capacity. The price of SVs through this channel is usually higher than ordinary vegetables from 25% to 40%. However, its downside is that because of traders' purchase power, in some situations, farmers have to sell SVs at the same price as ordinary vegetables.

With these above distribution channels, the quantity and proportion of SV consumption of enterprises, cooperatives and surveyed households/farmers are detailed as below.

Table 2: The quantity and proportion of safe vegetable consumption of enterprises, cooperatives and surveyed households by distribution channel, 2018

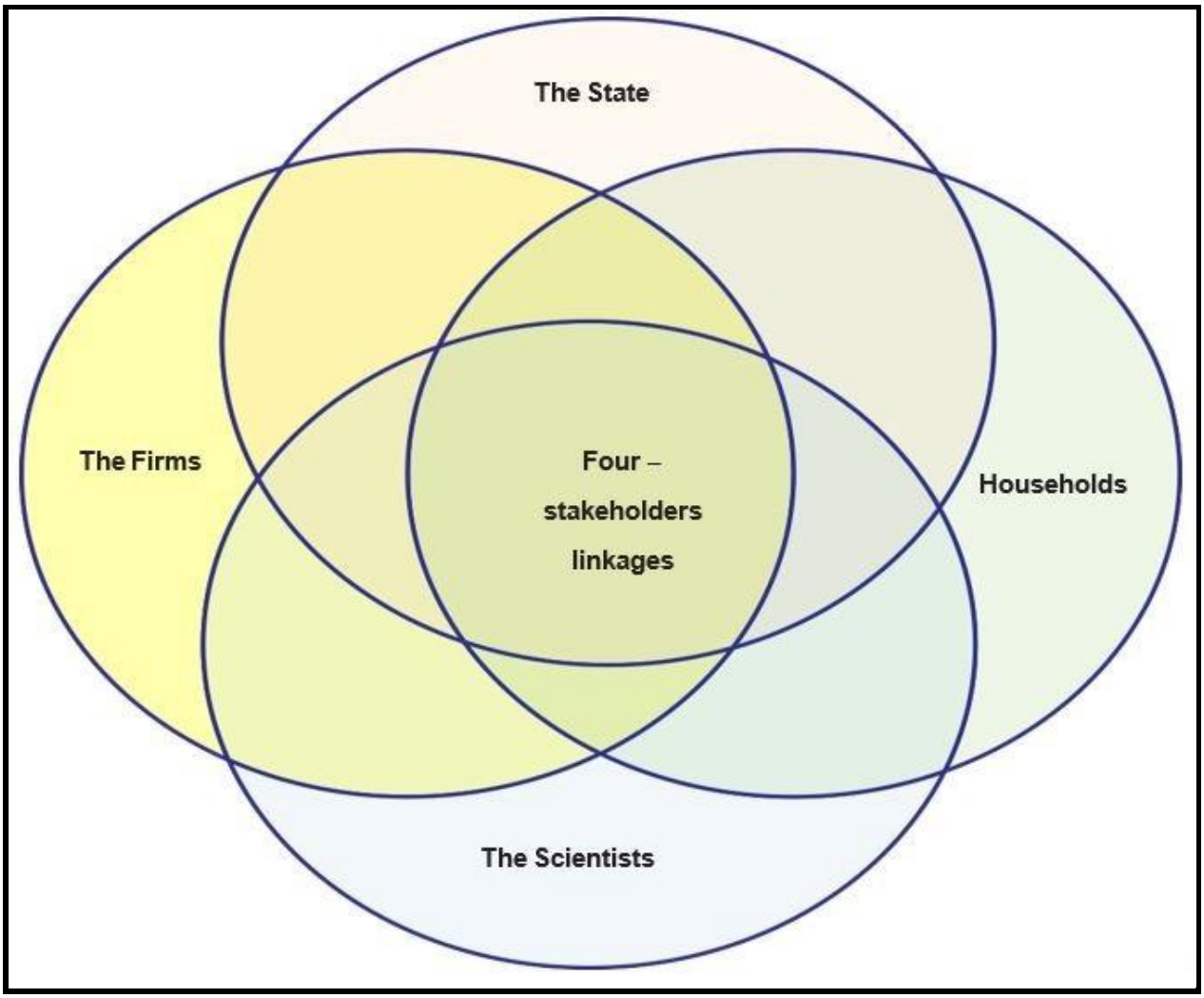
	Channel 1. Direct channel		**Channel 2. Indirect channel**		
	Channel 1.1	**Channel 1.2**	**Channel 2.1**	**Channel 2.2**	**Channel 2.3**
Quantity (ton)	27.4	76.3	269.9	86.0	65.4
Proportion (%)	5.0	14.0	53.2	15.8	12.0

Source: Surveyed data.

The above data shows that SV consumption in Ben Tre province mainly flows through indirect distribution from farmers to cooperatives to customers (Channel 2.1), accounting for 53.2% of the total vegetable consumption. In addition, farmers and SVs production companies mainly sell their products to hotels, restaurants and green groceries. Meanwhile, the direct distribution from farmers to consumers (Channel 1.1) and from farmers to traders (Channel 2.3) accounts for small proportions of about 5% and 12%, respectively.

The linkage between the SV production and consumption in Ben Tre province is carried out by the FSL model as often recommended for agricultural supply chain in Vietnam.

Figure 2: Linkage among stakeholders of safe vegetable production and consumption in Ben Tre



Source: Discussions with the enterprises, cooperatives and farmer households producing and supplying SVs in Ben Tre.

The results of in-depth interviews show the importance of FSL model that emphasizes the linkage between farmers, scientists, agricultural officials and enterprises in SV supply chain in Ben Tre province. Specifically, farmers adjust their production scales in accordance with estimated plans, sticking closely to market demand as they can maximize their profits while minimizing their costs. Enterprises can stabilize their prices and output volume while controlling the quality and safety of products more effectively. Thence, they can enhance their reputation, expanded their markets and commercial scales. By accompanying farmers and enterprises, scientists may have more practical ideas and better apply their research achievements as well as state-of-the-art technologies in real production. Competent authorities can easily verify the quality and origin of SV products under their management systems.

2.2 Difficulties in safe vegetable production, consumption and their reasons

Farmers still face difficulties in producing and consuming SVs, including:

(1) Farmers lack knowledge and experience in applying good agricultural practices (GAP). They mainly acknowledge GAP through training programs and mass media. Thus, they are not skilled enough to apply them in practice. In particular, farmers lack expertise in post-harvest handling, resulting in reduced quality of SVs;

(2) Newly cultivating techniques are not applied synchronously resulting in erratic SV quality. Moreover, SV production process is only applied to limited varieties of ordinary vegetables such as zucchini, water spinach, mustard greens, chayote and kohlrabi, thus, making SV categories less diversified;

(3) Although the demand for SVs is increasing, especially in urban areas, SV consumption is still much lower than ordinary vegetables.

Reasons for these difficulties are as follows:

(1) The production scale of SVs is small and fragmented, which is mainly relied on the farmers' experience while the production infrastructure does not meet the requirements of SV production. The limited SV categories and their low productivity also contribute to the delay in expansion of production areas. Besides, the lack of funding for investment in SV production, implementation of the GAP process and other advanced technologies are challenges of farmers;

(2) In the distribution process, underdeveloped transport infrastructure, high transportation costs and undergoing many intermediaries resulting in a less competitive price. Virtually all varieties of vegetables in the markets are not labeled, making it difficult to trace back the origin and distinguish between SVs and ordinary vegetables. In addition, market research activities and SV marketing have been overlooked, attributing to poor awareness and low trust of consumers.

Table 3: Summary of inter-stakeholder cross-assessments on the degrees of participation in the safe vegetable consumption process in Ben Tre

Partner	Average assessment score (with the increasing degree of cohesion corresponding to the scale of 1-10)			
	Farmers	**Enterprises**	**Scientists**	**The State**
Farmers	-	3.8	3.4	3.7
Enterprises/firms	3.4	-	3.2	2.9
Scientists	4.1	4.5	-	4.2
The State	3.5	3.7	3.5	-

Source: Surveyed data.

According to the results of cross-assessments among stakeholders on the degree of participation of SV consumption process, farmers in Ben Tre have the poorest performance. Only a few farmers participate in the distribution of SV products through cooperative groups/cooperatives.

According to the results of in-depth interviews with some enterprises, it is suggested that in order to promote four-stakeholder linkage, farmers should run their businesses under organizations (such as cooperative groups, cooperatives, associations, etc.) that stand for their rights and raise their voices. Furthermore, farmers need to abandon their spontaneous habits in production and business to become acquainted with contract-based production and abided with laws and contracts' provisions.

The linkage between enterprises and other parties in SV distribution process in Ben Tre province lacks discipline. Therefore, they should play a more active role as a driver in FSL model through sharing, market information, experience and economic benefits with other partners, especially farmers.

With a score from 4.1 to 4.5 points, scientists have a 'faint' role in the connection with other partners in FSL model, implying their low levels of involvement in SV distribution process.

The State has a poor average degree of participation in SV consumption process with a score from 3.5 to 3.7 points. According to the results of in-depth interviews with farmers, businesses and scientists, there are many issues relating to the delay, inefficiencies and lack of responsibilities of local authorities at all levels in implementing support policies and creating legal provisions to strengthen linkage in SV consumption.

3. Solutions to promote safe vegetable production and consumption in Ben Tre

Agricultural production planning is an important step to develop SVs sustainably in Ben Tre. The local government needs to plot detailed planning for SV production, especially in key districts. The production scale of each area should be large enough to meet SV production and VietGAP requirements and in harmony with specific conditions in each locality. Land accumulation is needed in parallel with increasing investment in production infrastructure.

Re-organizing the production through promoting active roles of cooperative groups, cooperatives and associations based on the principle of voluntary participation should be taken into consideration. In the short term, competent authorities should focus on key SV areas that are planned. Besides, local government should increase the quantity and quality of agricultural extension activities on SV production. Such activities can guide farmers to use diversified and reasonable rotational formulas on the basis of utilizing natural advantages of each region.

Creating and promoting SV brands is another solution. Local authorities and enterprises need to build and implement branding projects for each SV region to accelerate advertising effectiveness and build up consumer loyalty. The local government should periodically organize or support enterprises to participate in fairs and exhibitions for introducing their SV products to customers within and outside Ben Tre province.

Besides, local government also need to implement other support solutions such as: providing information and market forecast of vegetables' production and prices to help farmers to orient their production.

Re-organizing the SV distribution system will help to reduce intermediate expenses, thereby making` SV price more competitive. Local authorities and businesses need to develop networks with a variety of distribution channels (focusing on the channels 2.1, 2.2, and 1.2 as mentioned above) associated with VietGAP certification. SV products should be packed, have labels, bar codes and give detailed information about manufactures according to regulations of the Law as well as ensure traceability. The local authorities also need to strengthen their inspection and supervision of fraudulent activities in selling and distributing SVs that may affect customers' trust.

To support organizations and individuals to join the SV market, local government needs to create methods to encourage their participation. For example, annually, based on the result of surveys, competent agencies select grocery stores and supermarkets to sign contracts with farmers/households/cooperative groups/cooperatives to sell their SV products and then support them for expanding their SV business network.

The in-depth interviews' results show inadequacies and ineffectiveness in the process of completing legal provisions and implementing policies to support the SV consumption in Ben Tre province. Hence, in the future, Ben Tre's government should promulgate more policies on promoting the linkage between SV production and consumption. Concurrently, local government should promulgate specific policies on promoting FSL while establishing enforcement mechanisms and monitoring SV production and consumption.

The responsibilities of each partner in the FSL model must be defined. The State should be responsible for organizing and effectively coordinating the linkage while creating a favorable environment for other stakeholders to take up the batons. Accordingly, the local government and competence agencies should improve mechanisms and policies related to FSL, especially the regulations and sanctions, which strictly punish organizations and individuals violating their commitments in SV production and consumption process.

Finally, training programs improving farmers' awareness, knowledge and technical skills in SV production are also need to be strengthened. Farmers should be more active and proactive in linkage activities through underwriting contracts with enterprises, improving the value of SVs and raising their awareness. Scientists need to accompany farmers and their production practices to promptly detect problems and propose solutions to ensure SV production and consumption run smoothly. Enterprises need to play a driver in developing FSL, be more proactive in seeking partners, especially farmers/cooperative groups/cooperatives.

4. Conclusion

Developing SV production has been recognized as one of the important goals of Ben Tre province to transform its agricultural production activities adapting climate changes and creating sustainable livelihoods for residents. However, this new trend is facing many obstacles due to

weak linkage between SV production and consumption, limited knowledge, experience and capacity of farmers on SV production and the low trust of customers in SV products. Main solutions are proposed to promote the SV promotion and consumption in Ben Tre province in the future including: Planning and implementing SV projects; Promoting the establishment of cooperative groups/cooperatives/associations on SV production; Creating and promoting SV brands; Strengthening marketing activities; Organizing synchronous distribution systems; Issuing specific policies on promoting FSL; Establishing enforcement mechanisms and monitoring SV production and consumption; and Clearly defining responsibilities of each stakeholder in FSL model.

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Identifying the Factors Affecting Job Satisfaction of Commercial Bank Officers: A Case Study at Asia Commercial Bank in Hai Phong City

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Abstract

Job satisfaction of employees is essential to the success of any business. This study attempts to evaluate job satisfaction of bank officers at Asia Commercial Bank branches in Hai Phong city. We find that the overall job satisfaction of the bank officers is at the positive level; the Salary, Efficiency in work, Fringe benefit and Co-worker relation are the main factors affecting job satisfaction. However, the bank officers are not satisfied with Supervision, Leadership style, Loyalty to bank and Work ability. Except for Job experience, Gender, Levels of education, Marital status and Ages are demographic factors affecting the bank officers' satisfaction. Finally, we also provides main policy implications for enhancing the job satisfaction of the bank officers in the long term.

Keywords: Asia Commercial Bank, Bank officers, Hai Phong, Job satisfaction.

Introduction

Human resource management is an important aspect of organizational processes. This emanated from the recognition that the human resources of an organization and the organization itself are synonymous. A well-managed business organization normally considers the average employees as the primary source of productivity gains. These organizations consider employees rather than capital as the core foundation of the business and contributors to firm development. To ensure the achievement of firm goals, the organization creates an atmosphere of commitment and cooperation for its employees through policies facilitating employee satisfaction. The satisfaction of human resources finds close links to highly motivated employees who then develop loyalty or commitment to the firm resulting in greater productivity and better performance of the firm (Parvin and Kabir, 2011).

Established in 1993, Asia Commercial Bank (ACB) is one of the largest private banks and most technologically-advanced financial institutions in Vietnam. Currently, it operates over 350 branches nationwide and provides retail and commercial banking services, including term deposits, credit cards, loans, financial services, import and export finance, trade finance, global payment and guarantee services to customers nationwide and in a number of countries in the world.

In Hai Phong, ACB has 10 branches, locating mainly in the city center. What are the main factors affecting job satisfaction among ACB bank officers in Hai Phong? Are they salaries, allowances, working conditions, promotion chances, nature of the job, welfare facilities, inter-personal relationship, leave, supervision, the bank policy and strategy, job stress, and/or employee personality? To answer these research questions, this research focuses on identifying the factors affecting job satisfaction of ACB bank officers in Hai Phong recently. The results have important policy implications for ACB in Hai Phong as well as other ACB branches nationwide to have suitable strategies/policies to enhance their employees' satisfaction.

1. Literature review

Job satisfaction was extensively investigated in the literature. It is generally believed that a high-level of job satisfaction results in a high level of job performance. Overall, job satisfaction has been defined in many ways.

Maslow (1954) identified a hierarchy of five needs ranging from physiological, safety, belongingness and love needs, to esteem and self-actualization needs. Based on Maslow's theory, job satisfaction has been approached by some researchers from the perspective of need fulfillment (Kuhlen, 1963). Schwab and Cummings (1970) distinguished at least two meanings of this notion. According to them, one is considered as an emotional state connected with fulfillment or deprivation of needs, the other is treated as an evaluative component of attitudes, which refers to the question of how much a person likes work. Wanous and Lawler (1972) referred job satisfaction is the sum of job facet satisfaction across all facets of a job. Reilly

(1991) defined job satisfaction as the feeling that a worker has about his or her job or a general attitude towards a job, and it is influenced by the perception of one's job. Schermerhorn (1993) defined job satisfaction as an affective or emotional response towards various aspects of an employee's work. Spector (1997) referred to job satisfaction in terms of how people feel about their jobs and different aspects of their jobs. Ellickson and Logsdon (2002) supported this view by defining job satisfaction as the extent to which employees like their work.

Generally, job satisfaction can be defined as the feeling of contentment or a sense of accomplishment, which an employee derives from his or her job. It is derived from and caused by a number of inter-related factors. Although these factors can never be completely isolated from one another, they can be separated enough to give an indication of their relative importance to job satisfaction and morale to employees' performance. Theoretical considerations and empirical data indicate that job satisfaction depends on many variables. The followings are some main factors that mostly affect officers in the banking sector.

- **Personal factors:**

(1) ***Gender*****: T**hough it is generally believed that the number of women working in the banking sector is on the rise, a number of studies found that women are less with banking jobs. The reason is that banking is a challenging profession. It requires tremendous determination to succeed. The tendency is that unless women feel necessary, she will not go for a banking career. Though the scenario is changing, very few women are career-oriented. Meanwhile, male employees are thinking of competition era now, and they are thinking of promotion to the next cadre (Hrebiniak and Alutto,1972; Dirani,2009; Grover and Wahee, 2013; Devi and Nagini, 2013);

(2) ***Age*****:** Age is an important factor to determine job satisfaction. The maximum age limit for probationary officers to join a bank is of 30-35 years. While employees above the age group of 35 seem to be settling somewhere permanent as frequent transfer is not a conducive one for them. Female employees are highly satisfied since their nature of duties are related to children upbringing and take care of beloved ones (Grover and Wahee, 2013);

(3) ***Job experience*****:** Employees who have higher needs for achievement time on the jobs may become a crucial factor if not promoted, hence, they are dissatisfied. It has been seen that job satisfaction level among employees is somewhat below par as they want to show their competence to the higher level and demand promotion. It is observed that most of the employees put a lot of efforts in their work at the initial stage of their career (Grover and Wahee, 2013; Devi and Nagini, 2013);

(4) ***Education*****:** As a bank is engaged with commercial activities, it requires better aptitude towards figure and calculation. Some surveys revealed that employees are from various

disciplines such as science, commerce, arts, etc. It is clearly proved by the performance that regardless of educational disciplines, they are quite successful in their profession because banking is a field where more practical implications are required rather than theoretical knowledge. In addition, people with fewer qualifications supposed to be satisfied with their job, and their satisfaction levels are quite static over the period of time. Since they think that their jobs suit to their educational backgrounds, they are, hence, satisfied (Grover and Wahee, 2013);

(5) **Salary:** The motivational aspects of pay are well-documented. The notion that high pay leads to high levels of job satisfaction is not without debate (Luthans, 1998; Shrivastava and Purang, 2009; Judge *et al*., 2010; Nimalathasan, 2010; Pham Thi Minh Ly, (2011); Nguyen ThiThuyQuynh, 2012; Grover and Wahee, 2013; Devi and Nagini, 2013; Sharma and Malu, 2015; Abbas, 2015);

(6) **Efficiency in work:** Efficiency in work can implicate and maintain the social relationship between colleagues, supervisors and the organization. It describes the neighboring circumstances, in which employees are working together. A satisfied, happy and hardworking employee is the biggest asset of any organization. Effective results and productivity for any organization depend on the levels of satisfaction of employees, and the working environment is one of the most important factors influencing the satisfaction and motivation levels of employees. Efficient human resource management and favorable working environment or cultural effects not only affect the performance of employees and organization but also the growth and development of the entire economy (Luthans, 1998; Nimalathasan, 2010; Mansor*et al*., 2012; Saeed *et al*., 2013; Devi and Nagini, 2013; George and Zakkariya, 2015; Basu, 2016);

(7) **Fringe benefit:** Fringe benefits become the comparison between what persons are paid and what they feel are worth. Dissatisfaction ensures when the workers perceive inequalities between their pay and that of others with the same inputs. If fringe benefits are constant with perceived efforts and status, it will act as a satisfier (Sharma and Malu, 2015; Nisar and Siddiqui, 2019);

(8) **Supervision:** Supervision is undoubtedly one of the most important factors related to job satisfaction, which is correlated with factors that also are important in assessing job satisfaction level of bank. Employees are moderately satisfied with supervision they get from their superior. It is necessary to mention that some express their dissatisfaction with superior support and they blame that they are not getting enough support from superior to perform the task effectively and efficiently (Luthans, 1998; Mansor *et al*., 2012; Sharma and Malu, 2015; Abbas, 2015);

(9) **Leadership style:** Leaders create a culture where their subordinates strive for goal attainment to get the success of their organizations. They make the most of their potential,

skill sets and influence to motivate and inspire followers by asserting their authority, enforcing the rules, participating, manipulating the situation by organizing team efforts. An academic institution needs leaders to transform them into autonomous, systems-thinking institutions, professional learning communities that can create a high-performing learning environment. Leadership and employee job satisfaction are the cornerstones of organizational effectiveness. Leadership determines job satisfaction. It affects employees' motivation and commitment that influence the performance of an organization in the immediate and long terms. Therefore, improving leadership and management capability is an issue that no organization wishing to achieve long-term success can ignore (Mansor *et al*., 2012; Saeed *et al*., 2013; Kebedeand Demek, 2017);

(10) **Loyalty to bank:** Job satisfaction and Employee loyalty represent one of the most key challenges faced by the bank managers today when it comes to managing their employees. Employees are the most valuable resource for all organizations. The longer an employee works for a company, the more valuable he or she becomes. Many studies were conducted in various sectors to demonstrate the impact of job satisfaction on employee loyalty. Employee loyalty is all about employees being committed for the success of the organization with a strong belief that working with that particular organization is their best option (Belás *et al*., 2013; Mai Ngoc Khuong and Bui Diem Tien, 2013; Varma *et al*., 2018);

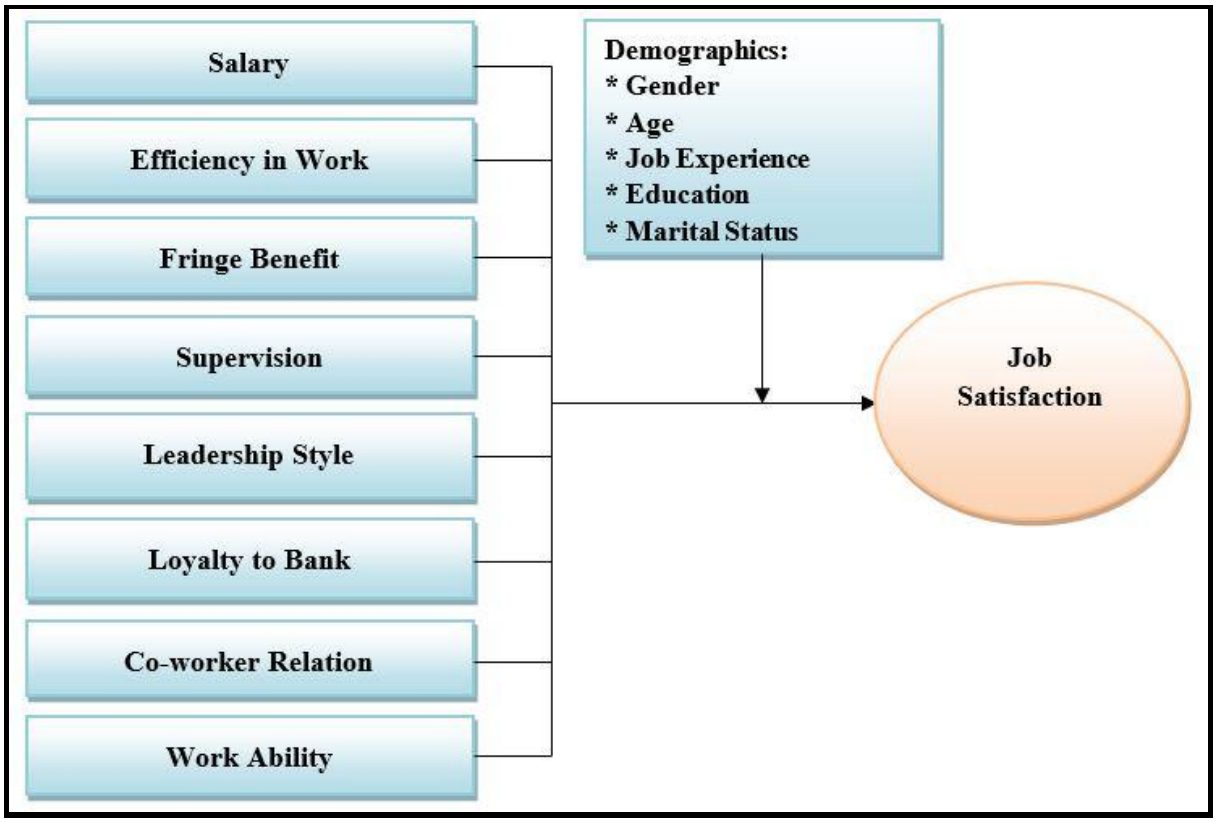
(11) **Co-workers:** Associations or teams have frequently been mentioned as a factor in job satisfaction. Certainly, this seems to be reasonable as people want to be near their friends. Co-workers seem to be a co-operative form. After working for many years together brings a sense of mutual cooperation but the nature of humans is such that anything is offered with the expectation of return. Above all, employees are moderately satisfied with their support from colleagues (Luthans, 1998; Mansor*et al*., 2012; Grover and Wahee, 2013; Sharma and Malu, 2015; Abbas, 2015);

(12) **Work ability:** Organizational changes and relative growth of the aging population together with related health problems seem to have increased stressfulness in the work of banking employees. However, little is known about their work-related well-being and the factors, through which their situation could be improved. Some studies showed that banking employees had fairly high job satisfaction, work ability and life satisfaction. One of the most important factors inherent in job satisfaction is work ability (Faragher *et al*., 2005; Devi and Nagini, 2013).

The review of the above existing literature helps the authors identify the various factors capable of influencing the degree of job satisfaction of ACB bank officers in Hai Phong city. The next section presents the methodology employed in this research.

2. Methodology

Figure 1: Job satisfaction and influencing variables



Source: The authors' compilation.

The followings are hypothesized:

H1: There is a positive relationship between Salary and Job satisfaction at ACB Hai Phong;

H2: There is a positive relationship between Efficiency in work and Job satisfaction at ACB Hai Phong;

H3: There is a positive relationship between Fringe benefits and Job satisfaction at ACB Hai Phong;

H4: There is a positive relationship between Supervision and Job satisfaction at ACB Hai Phong;

H5: There is a positive relationship between Leadership style and Job satisfaction at ACB Hai Phong;

H6: There is a positive relationship between Loyalty to bank and Job satisfaction at ACB Hai Phong;

H7: There is a positive relationship between Co-worker relation and Job satisfaction at ACB Hai Phong;

H8: There is a positive relationship between Work ability and Job satisfaction at ACB Hai Phong;

H9: Different Gender groups have different levels of Job satisfaction at ACB Hai Phong;

H10: Different Marital status groups have different levels of Job satisfaction at ACB Hai Phong;

H11: Different Job experience groups have different levels of Job satisfaction at ACB Hai Phong;

H12: Different groups with different Levels of education have different levels of Job satisfaction at ACB Hai Phong;

H13: Different Aging groups have different levels of Job satisfaction at ACB Hai Phong.

2.2. Data collection

For the data collection purpose, a questionnaire on 7-point Likert scale (1-Extremely dissatisfied; 2-Somewhat dissatisfied; 3-Slightly dissatisfied; 4-Neutral; 5-Slightly satisfied; 6-Somewhat satisfied; 7-Extremely satisfied)with 40 questions was developed. The data from 210 bank officers have been collected through face-to-face interviews by the authors during 2018. Then, the authors employ Descriptive Statistics, Frequency Statistics, One Sample T-test, Independent sample T-test, One-way ANOVA techniques and SPSS software to analyze the data collected. The next section makes an analysis of empirical results.

3. An analysis of empirical results and discussion

The followings are summaries of statistical and data analysis results using the SPSS.

Table 1: Descriptive statistics

Variables	N	Min	Max	Mean	Std. Deviation
Salary	210	5	7	6.10	.748
Efficiency in work at ACB in Hai Phong	210	5	7	6.47	.720
Fringe benefits	210	5	7	6.57	.560
Supervision	210	1	3	2.40	.612
Leadership style at ACB in Hai Phong	210	2	5	2.93	.816
Loyalty to bank	210	1	3	2.50	.564
Co-worker relation at ACB in Hai Phong	210	5	7	6.40	.665
Work ability	210	1	3	2.00	.685
Valid N (list wise)	210				

Table 2: One sample T-Test results

Variables	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	90% Confidence Interval of the Difference	
					Lower	Upper
Salary	118.197	209	.000	6.100	6.01	6.19
Efficiency in work at ACB in Hai Phong	130.201	209	.000	6.467	6.38	6.55
Fringe benefits	169.897	209	.000	6.567	6.50	6.63
Supervision	56.785	209	.000	2.400	2.33	2.47
Leadership style at ACB in Hai Phong	52.111	209	.000	2.933	2.84	3.03
Loyalty to bank	64.226	209	.000	2.500	2.44	2.56
Co-worker relation at ACB in Hai Phong	139.485	209	.000	6.400	6.32	6.48
Work ability	42.325	209	.000	2.000	1.92	2.08

Using *One Sample T-Test* technique to check whether or not the following factors: Salary, Efficiency in work, Fringe benefits, Supervision, Leadership style, Loyalty to bank, Co-worker relation and Work ability affect to Job satisfaction of ACB bank officers at in Hai Phong city. The results are demonstrated in Table 2 above. All variables are statistically significant at the level of 1%.

It can be concluded that these factors affecting Job satisfaction of ACB bank officers in Hai Phong are: Salary, Efficiency in work, Fringe benefits and Co-worker relation as the hypotheses. In other words, the bank officers are satisfied with those factors or H1, H2, H3 and H7 are supported due to the Means of these variables are higher than their medium Means (4.0) of the Likert scale.

The Means of Supervision, Leadership style, Loyalty to bank, and Work ability are 2.40, 2.93, 2.50 and 2.0 respectively which are lower than their medium Means (4.0) in 7-point Likert scale. This means that ACB bank officers in Hai Phong are not satisfied with those factors or H4, H5, H6, H8 are not supported.

Using *One Sample T-Test* technique to check whether or not the following factors: Salary, Efficiency in work, Fringe benefits, Supervision, Leadership style, Loyalty to bank, Co-worker relation and Work ability affect to Job satisfaction of ACB bank officers at in Hai Phong city. The

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- **Job satisfaction and demographic variables**

Table 3: Independent sample T-test results

	Gender of Respondent	N	Mean	Std. Deviation	Std. Error Mean
Do you satisfy with current job at ACB in Hai Phong	Female	119	6.41	.494	.045
	Male	91	6.69	.464	.049

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	90% Confidence Interval of the Difference	
									Lower	Upper
Do you satisfy with current job at ACB Branch	Equal variances assumed	9.714	.002	-4.185	208	.000	-.281	.067	-.413	-.148
	Equal variances not assumed			-4.220	199.4	.000	-.281	.066	-.412	-.149

Levene's Test for Equality of Variances is 0.002 (reject H0 and accept H1) so we choose Equal variances not assumed row. In Equal variances not assumed row, Sig. = 0.000 for T-test for Equality of Mean, so we reject H0 and accept H1. It can be concluded that there are

significant differences in the levels of Job satisfaction between male and female bank officers at ACB in Hai Phong city or H9 is supported.

Table 4: Independent sample T-test results

	Your Marital status	N	Mean	Std. Deviation	Std. Error Mean
Do you satisfy with current job at ACB in Hai Phong	Single	56	6.38	.489	.065
	Married	154	6.59	.493	.040

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	90% Confidence Interval of the Difference	
									Lower	Upper
Do you satisfy with current job at ACB Branch	Equal variances assumed	.903	.343	-2.812	208	.005	-.216	.077	-.343	-.089
	Equal variances not assumed			-2.825	98.479	.006	-.216	.076	-.343	-.089

Levene's Test for Equality of variances is 0.343 (accept H0) so we choose Equal variances assumed row. In Equal variances assumed row, Sig. = 0.005 for T-test for Equality of Mean, so we reject H0 accept H1. It can be concluded that there are significant differences in the levels of Job satisfaction between married and single groups of bank officers at ACB in Hai Phong city or H10 is supported.

Table 5: One-way ANOVA Analysis

Descriptive statistics

(Do you satisfy with current job at ACB in Hai Phong?)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Below 10 years	119	6.53	.501	.046	6.44	6.62	6	7
11-20 years	77	6.55	.501	.057	6.43	6.66	6	7
Above 20 years	14	6.50	.519	.139	6.20	6.80	6	7
Total	**210**	**6.53**	**.500**	**.035**	**6.47**	**6.60**	**6**	**7**

ANOVA

(Do you satisfy with current job at ACB in Hai Phong?)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.029	2	.014	.057	.945
Within Groups	52.238	207	.252		
Total	**52.267**	**209**			

Using One-way ANOVA Analysis, the results are presented in Table 5 above. The P-value of One-way ANOVA Analysis is 0.945, which is insignificant. We accept H0 and conclude that Job experience of ACB bank officers in Hai Phong city does not affect their job satisfaction or there are no differences in the levels of Job satisfaction between different experience groups or H11 is not supported.

Table 6: One-way ANOVA Analysis

Descriptive statistics

(Do you satisfy with current job at ACB in Hai Phong?)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Master and above	28	6.25	.441	.083	6.08	6.42	6	7
Bachelor	154	6.59	.493	.040	6.51	6.67	6	7
Others	28	6.50	.509	.096	6.30	6.70	6	7
Total	210	6.53	.500	.035	6.47	6.60	6	7

ANOVA

(Do you satisfy with current job at ACB in Hai Phong?)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.789	2	1.395	5.835	.003
Within Groups	49.477	207	.239		
Total	52.267	209			

Regarding the Level of education, the P-value of One-way ANOVA Analysis is 0.003 in Table 6, which is significant. This means that there are differences in the levels of Job satisfaction between groups with different Levels of education of ACB bank officers in Hai Phong orH12 is supported. This hypothesis is also supported by the study of Phil (2009), who suggested that highly-educated employees may have higher expectations and, therefore, are more likely to remain unsatisfied. Studies by Mora and Ferrer-i-Carbonellb (2009) and Zou (2007) also found that higher educated employees have lower levels of job satisfaction than lower educated employees and receive better promotional opportunities, earnings and job security. Clark *et al.* (1996) stated that higher levels of job satisfaction exist among employees who have lower education while higher educated employees are less satisfied with their jobs[1]

Table 7: One-way ANOVA Analysis

Descriptive statistics

(Do you satisfy with current job at ACB in Hai Phong?)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Below 25	63	6.44	.501	.063	6.32	6.57	6	7
26-35	91	6.69	.464	.049	6.60	6.79	6	7
36-45	49	6.43	.500	.071	6.28	6.57	6	7
>46	7	6.00	.000	.000	6.00	6.00	6	6
Total	210	6.53	.500	.035	6.47	6.60	6	7

ANOVA

(Do you satisfy with current job at ACB in Hai Phong?)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.326	3	1.775	7.792	.000
Within Groups	46.940	206	.228		
Total	**52.267**	**209**			

Using the same technique, the results of One-way ANOVA Analysis are illustrated in Table 7. The P-value of One-way ANOVA Analysis is 0.000, which is significant. Hence, we can conclude that there are differences in the levels of Job satisfaction between Aging groups at ACB in Hai Phong city or H13 is supported.

- **Overall job satisfaction**

Table 8: Overall job satisfaction of ACB bank officers in Hai Phong

	N	Mean	Std. Deviation	Std. Error Mean
Do you satisfy with current job at ACB branches in Hai Phong?	210	6.53	.500	.035

(Do you satisfy with current job at ACB in Hai Phong?)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat satisfied	98	46.7	46.7	46.7
	Extremely satisfied	112	53.3	53.3	100.0
	Total	**210**	**100.0**	**100.0**	

One-Sample T-Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Do you satisfy with current job at ACB in Hai Phong?	189.324	209	.000	6.533	6.48	6.59

Table 8 presents the level of overall Job satisfaction of ACB bank officers in Hai Phong city. The results indicate that, out of the 210 survey participants, no respondent (n=0) fell in the Extremely-Dissatisfied range. However, 46.7% of the respondents (n=98) fell in the Somewhat-satisfied range, while 53.3% (n=112) were in the Extremely-satisfied range. Therefore, it can be concluded that the overall job satisfaction of ACB bank officers in Hai Phong is at the positive level. The Mean of 210 observations retrieved from ACB on job satisfaction is 6.533, quiet high, and it is significant at the level of 1% in One-sample T-test supporting for this conclusion.

Table 9 summarizes the testing results of the above-mentioned hypotheses, of which 7 out of 13 or virtually 54% of analysis results are coincided with the expectations.

Table 9: The summary of hypothesis testing results

Hypothesis	Expectation	Analysis results
H1	Positive	Positive
H2	Positive	Positive
H3	Positive	Positive
H4	Positive	Negative
H5	Positive	Negative
H6	Positive	Negative
H7	Positive	Positive
H8	Positive	Negative
H9	Different	Different
H10	Different	Different
H11	Different	Indifferent
H12	Different	Different
H13	Different	Different

Source: The authors' compilation.

3. Conclusion and policy implications

By employing a dataset collected from a survey on210 bank officers at ACB in Hai Phong city during 2018with the use of SPSS and ANOVA software, the authors find that: (1) The overall job satisfaction of bank officers at ACB in Hai Phong is at the positive level; in which, the Salary, Efficiency in work, Fringe benefits and Co-worker relation are the main factors affecting job satisfaction. Bank officers are not satisfied with Supervision, Leadership style, Loyalty to bank and Work ability; and (2)Gender, Levels of Education, Marital status and Ages are demographic factors affecting bank officers' satisfaction while Job experience is not.

As shown in the above analysis, the bank officers are not satisfied with Supervision, Leadership style, Loyalty to bank and Work ability at ACB branches in Hai Phong city recently. Hence, in order to improve the situation, the following policy implications are important:

First, it is necessary for bank managers to perfect supervision by providing supports and a friendly working environment for their subordinates to perform tasks comfortably and

efficiently. Put differently, employees that experience less supervision from their bosses will perform and satisfy better at work.

Second, regarding leadership style, ACB branches should transform themselves into autonomous, systematic-thinking, professional learning units in order to create a high-performing environment. As the leadership is a decisive factor of job satisfaction of the bank officers, improving leadership and management capability is crucial for ACB Branches in the long term.

Third, ACB branches should as soon as possible find out the pathway to enhance the loyalty of their employees through improving their income policy, promotion policy, etc.

Last but not least, to reduce the stressfulness of bank officers and improve their physical health, ACB branches should have an effective health policy for their employees to ensure that all staffs are in good conditions to carry with their tasks.

Overall, unlike the existing studies, our investigation, to a certain extent, contributes an added value by assessing the job satisfaction of ACB's branches bank officers and providing policy implications drawn from the regression models. It is noteworthy that the methodology used in this research can be employed in the same field in other ACB branches nationwide. Due to the shortages of relevant resources and the limitations in sample size, nevertheless, our study cannot cover other ACB's branches in other provinces of Vietnam to support firmly the research findings. Hopefully, these shortages and limitations of the study can be resolved in the future.

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[1] See more at Bader *et al.* (2013).

Empirical Evidence of the Impacts of Social Trust on Economic Growth and Policy Implications

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Abstract

This study evaluates the impacts of the social trust on economic growth in developed and developing countries via main transmission channels such as human capital, investment, trade and state governance. To do this, we adopt multiple regression models such as ordinary least squares, fixed effects and random effects and so on and use the database from the World Values Survey Program, World Bank's World Development Indicators, World Governance Indicators for the periods of 1990-1994, 1995-1999, 2000-2004, 2005-2009 and 2010-2014. The results of the linear regression analyses prove that social trust has positive impacts on economic growth but these impacts vary in developed and developing countries. Based on the empirical results, this paper provides main policy implications to enhance the contribution of the social trust in boosting economic growth.

Keywords: Economic Growth, Social Capital, Social Trust.

Introduction

Social trust is a multidimensional concept. It is defined as both interpersonal trust and institutional trust and considered as a component of social capital.

Social trust can impact economic growth through a number of transmission channels such as human capital, investment, trade and state governance. The influencing ways and magnitudes of these transmission channels on economic growth, to a different extent, are assessed by a number of studies such as Sequeira and Lopes (2011), Knack and Keefer (1997), Zak and Knack (2001) and Bjørnskov (2006).

The main purpose of this study is to provide a quantitative analysis of impacts of social trust on economic growth and its transmission channels by using different regression models. The research dataset is taken from the World Values Survey (WVS) Program, comprising 92 countries and 215 observations during the period of 1990-2014. In addition, this study also aims to suggest key policy recommendations to enhance the contribution of social trust to economic growth for both developed countries and developing countries, including Vietnam.

Except for the Introduction, this paper is structured into four sections. Based on the literature review, the first section discusses key conceptual issues of social trust and its impacts on economic growth. The following section describes the input data and research methodology used in the quantitative analysis of the study. The subsequent section discusses the findings from the regression models. The last section ends up with the conclusion and key policy implications for developed and developing countries, including Vietnam.

1. Conceptual issues of social trust and its impact on economic growth

Social trust as a concept is multidimensional. In this study, the concept of social trust is defined not only as interpersonal trust, which refers to the trust among individuals but also as institutional trust, which refers to the trust of individuals in institutions and organizations (such as government, business and trade unions) (Kwon, 2019). It is noteworthy that social trust is considered a component of social capital.

There are several approaches to understand the concept of social capital. However, this article adopts the definition of Coleman (1988) and Putnam (1993) as social capital comprises characteristics of social life such as: networks, norms and social trust. Those factors enable members to act together effectively to achieve common goals.

There are a number of transmission channels, via which social trust can impact economic growth. Four elements of economic growth that social trust can affect include: human capital, investment, trade and state governance/management. Coleman (1988) argued that social trust is a factor creating human capital. This opinion is further supported by other studies, for instance, Sequeira and Lopes (2011). Knack and Keefer (1997) also asserted that a society with trust not

only incentivizes greater innovation and physical capital accumulation but also human capital accretion. Wherever trust improves the access to credit for the poor, the number of high school student enrollment could be higher. Citizens' trust and engagement make the operation of governmental organizations including public education better. Higher quality schools promote educational outcomes, thus enhancing human capital. In low-trust societies, recruitment decisions are often influenced by the reliable personal characteristics of job applicants such as blood relations and acquaintances, and rarely by education and training. Therefore, it does not encourage people to invest in education.

Zak and Knack (2001) argued that trust can directly increase investment. Theoretically, investment brokers are intermediaries between investors and businesses. Brokers' lack of trust can make society bear more investment-related transaction costs, reducing the investment rate. Knack and Keefer (1997) claimed that in a high-trust society, governmental officials can be considered to be more reliable, and, therefore, policies stabilizing the investment environment (*i.e.* maintaining a stable interest rate, keeping the nominal exchange rate fixed, not amending tax law too quickly) are seemed to more trustworthy. In this case, trust induces more investment and other economic activities. Consequently, investors would often make long-term investment decisions instead of short-term ones and select optimal production technology.

In a society where people have mutual trust, the risk of non-complying with commercial contracts is very low, thus reducing the cost of commercial transactions (Bjørnskov, 2006). Knack and Keefer (1997) described an economy where many commercial transactions are made is based on mutual trust. Commercial transactions could be in forms of pre-delivery and post-delivery; labor contracts to perform jobs that are hard to control; agreements on investments and savings decisions depending on whether the banks and the government commit to protect or not confiscate the assets. In a high-trust society, individuals pay less economic transaction costs because they concern less over terms related to non-compliance in economic contracts. Since few disputes and lawsuits happen, individuals seem to use fewer resources to pay tax, bribe or use security services to protect their property rights from crimes. If enterprises have to spend a lot of time controlling the potential damages caused by partners, workers and suppliers, they would have less time to invent new goods and production.

Social trust can positively impact institutional quality, including economic and political institutions, regulation quality and efficiency of the administrative apparatus; hence, indirectly affecting the performance of the economy (Knack and Keefer, 1997; Zak and Knack, 2001; Bjørnskov, 2006). Social trust can improve government performance and the quality of economic policies by influencing the nature and extent of people's political participation. A large number of people understanding and participating in political and public affairs plays an important part in

supervising whether politicians and government officials act for the common goals or to enrich themselves and their interest groups. People who are interested in political and public affairs would refuse to vote or ask for information about the State agencies' activities if they do not have all the necessary information (Knack and Keefer, 1997).

Putnam (1993) demonstrated that local governments in Northern and Central Italy, where there was a higher level of social trust, provided more effective public services than the Southern governments, where social trust was lower. Moreover, the Southern people seemed to reach administrative agencies only to solve their personal problems, while the Northern and Central people tended to address broader issues, which brings benefits to the whole regions (Putnam, 1993; Knack and Keefer, 1997). Zak and Knack (2002) pointed out three different mechanisms that lead to this phenomenon. First, higher trust probably leads to higher accountability since the decisions made must meet the public's aspirations. Second, consensus or agreement is likely even the internal politics are divided. In countries where politicians and voters have strong divisions, consensus can be achieved with high confidence because both voters and politicians believe that they will be compensated for the costs incurred current policy decisions. Third, in high-trust states of the United States, politicians often come up with more innovative policies probably because they could avoid public skepticism about changes in institutions.

In a nutshell, social trust can impact economic growth through different transmission channels, including human capital, investment, trade and state governance/institutions. In a high-trust society, economic transaction costs are often lower, hence, promoting economic growth.

2. Data description and methodology

2.1. Data description

This study uses panel data, calculated by the average of each 5-year period from 1990 to 2014 divided into 1990-1994, 1995-1999, 2000-2004, 2005-2009 and 2010-2014. However, the panel data are unbalanced because some countries do not have sufficient data for all five periods.

Data on social trust and religious values are taken from the results of the World Values Survey (WVS) Program. Founded by social scientists, since 1981, WVS studies the changes in values and their impacts on the political and social life. WVS surveys were implemented on nearly 90% of the world population using the same questionnaire. Through 6 stages, 96 countries and territories around the world have conducted surveys with 232 observations, accounting for approximately 36% of the world nations. The total number of respondents was 330 thousand persons. Due to a lack of data of a number of countries and suspending stage 1, the research dataset remains with 92 countries and 215 observations.

Data on economic growth, investment, labor, years of education, government expenditures, trade and inflation are taken from the World Development Indicators (WDI). Economic growth is measured by GDP per capita in USD at 2010 price with purchasing power parity (PPP) adjustment. Physical capital (investment) includes expenditures to supplement the fixed assets of the economy added with the level of inventory change, which is computed in USD at 2010 price. Labor is estimated by the ratio of labor from 15 year-old to the total population. The average years of education of population from 25 years old are derived from the completed school level multiplied by the official duration of that level. Government expenditures on goods and services are calculated by the percentage of GDP. The degree of openness of the economy is the ratio of total foreign trade value to GDP.

Data on political stability, institutional quality, regulatory quality (rule of law) are taken from the Worldwide Governance Indicators (WGI), including 215 economies from 1996 to 2014. The values of these indicators are estimated in the range of -2.5 (bad) to 2.5 (good).

2.2. Methodology

This study applies linear regression models to assess the impact of social trust on economic growth and to verify its transmission channels. Research models and variables are based on Bjørnskov (2006), Knack and Keefer (1997) and Pfister (2010), as follows:

GDP per capita = β1 + β2*social trust + β3*log(physical capital) + β4*labor + β5*years of education + β6*degree of openness + β7*government expenditures + u_{it}

Where: : βi is parameter and u_{it} is error term.

3. Findings and discussion

3.1 Social trust and economic growth

The regression model adopts ordinary least squares (OLS), fixed effects (FE) and random effects (RE). The results are shown in Table 1. F test and Wald test are used to test the appropriateness of the model. *P*-values of the three estimation methods are less than 0.05. Therefore, the regression model is appropriate to estimate the parameters. Since OLS, FE and RE have different values and significance levels for the coefficients, a test to select the most appropriate estimation model is applied. Both the Hausman test and Lagrange test indicate that RE was more appropriate than OLS and FE. In the RE model, all coefficients are greater than 0, implying that all variables have had positive impacts on GDP per capita. R^2 = 0.4685 indicates that the independent variables in the model can explain 46.85% of the changes in GDP per capita. *P*-values of explanatory variables (except for government expenditures) are less than 0.05, which shows that the coefficients are statistically significant at 1%.

Table 1: Regression results

Dependent variable	GDP per capita		
Estimation method	OLS	FE	RE
Social trust	117.66*	74.02**	84.69***
	(0.074)	(0.028)	(0.007)
Log physical capital	3242.02***	2121.12***	2573.29***
	(0.000)	(0.000)	(0.000)
Labor	251.56***	152.51*	220.08***
	(0.003)	(0.066)	(0.002)
Years of education	2225.67***	2520.82***	2285.49***
	(0.000)	(0.000)	(0.000)
Degree of openness	90.72***	41.09**	54.43***
	(0.000)	(0.045)	(0.001)
Government expenditures	235.79	34.33	45.31
	(0.254)	(0.828)	(0.752)
No. of obs	197	197	197
R^2	0.5407	0.6663	0.4685
p-value (F-test)	0.000	0.000	
p-value (Wald-test)			0.0000

Note: *** is significant at 1%; ** is significant at 5%; * is significant at 10%.

The influence of each explanatory variable on GDP per capita can be explained as follows. When social trust increases by 1 unit, GDP per capita rises to 84.69 USD at 1% significance level. Likewise, when physical capital grows by 1%, GDP per capita increases 25.73 USD at 1% significance level; labor/population to 1 unit, GDP per capita to USD 220.08; the average years of education to 1 year, GDP per capita to USD 2285.49; the degree of openness to 1 unit, GDP per capita to 54.43 USD at 1% significance level.

The dataset is split into 2 groups for more in-depth analysis. As results are shown in Table 2, there are differences in the signs of the coefficients of social trust, government expenditures and labor/population between the two groups. For developed countries, the coefficient of social trust is positive, implying that social trust has a positive impact on GDP per capita at 10% significance level. In contrast, the coefficient of social trust variable carries a negative sign for developing countries, however, it is not statistically significant.

Table 2: Regression results by groups of data

Dependent variable	GDP per capita	GDP per capita
Estimation method	RE	RE
Group	Developed countries	Developing countries
Social trust	64.67*	-31.65
	(0.091)	(0.178)
Log physical capital	5343.75***	1768.35***
	(0.000)	(0.000)
Labor	205.08**	-31.96
	(0.025)	(0.393)
Years of education	1307.30***	1072.47***
	(0.001)	(0.000)
Degree of openness	101.24***	15.89
	(0.000)	(0.182)
Government expenditures	503.05***	-19.75
	(0.003)	(0.824)
No. of obs	78	115
R^2	0.5339	0.5799
p-value (Wald-test)	0.000	0.000

Note: *** is significant at 1%; ** is significant at 5%; * is significant at 10%.

The results show that the independent variables in the regression model do not fully explain the variation of economic growth. Due to the limitations of data and the scope of research, it is impossible to include all variables in the model. The error of the model represents the impact of variables that are not included. Increasing social trust along with good economic performance is what can be observed from the data analysis. Therefore, there are other factors outside the model possibly affecting social trust. Studies of Bjørnskov (2006), Knack and Keefer (1997) showed similar results. Thus, social trust could be an endogenous variable in the model. By applying the Durbin-Wu-Hausman test, endogeneity issue with social trust variable is detected.

It is necessary to have representative variables for social trust in order to control the endogenous effect, which must satisfy two requirements. First, they must correlate with social trust. Second, they do not correlate with the error $u_{i.}$ Religion, a dummy variable for nations under monarchy and a dummy variable for post-socialist countries are selected to represent

social trust because they could satisfy the above-mentioned criteria. The three variables were proved to have impacts on social trust by Bjørnskov (2006) and Pfister (2010), thus meeting the first criterion. They also satisfy the second requirement because economic performance cannot change the fact that those countries were once communist nor can it affect a monarchial country, mainly because monarchy is constitutional and spiritual and does not influence people's religious beliefs.

Table 3: Regression results for 2SLS model

Dependent variable	GDP per capital	GDP per capita
Method	RE	2SLS RE
Social trust	84.69***	75.94**
	(0.007)	(0.022)
Log physical capital	2573.29***	3291.59***
	(0.000)	(0.001)
Labor	220.08***	227.29***
	(0.002)	(0.006)
Years of education	2285.49***	1764.02***
	(0.000)	(0.000)
Degree of openness	54.43***	58.47***
	(0.001)	(0.001)
Government expenditures	45.31	129.62
	(0.752)	(0.417)
No. of obs	197	180
R^2	0.4685	0.5213
Wald test (Prob>Chi2)	0.000	0.000

Note: *** is significant at 1%; ** is significant at 5%; * is significant at 10%.

Table 3 shows that the signs and statistical significance of the explanatory variables in 2SLS model are analogous to the original regression model. It proves that social trust reinforces economic growth. However, the coefficient of social trust is lower in the 2SLS model. This finding is consistent with Knack and Keefer (1997) by indicating that social trust improves by 1 unit, GDP per capita rises 75.94 USD at 5% significance level.

The results give sufficient evidence to prove that social trust has positive impacts on economic growth. Although social trust is not the direct input for the production of goods and services like physical capital and human capital, it affects other production factors to create growth momentum.

3.2 Transmission channels

The impact of social trust on the determinants of economic growth is measured by a linear regression model. Besides variables used in the model estimating the impact of social trust on economic growth such as GDP per capita, the degree of openness of the economy (trade), years of education (human capital) and physical capital (investment), a few other variables including a dummy variable for post-socialist countries (1 if the country is post-socialist and 0 if not), a dummy variable for developed countries (1 if the country is developed and 0 if not) and other explanatory variables, namely, institutional quality, political stability, regulation quality and the efficiency of the administrative apparatus are quantified by index from -2.5 (bad) to 2.5 (good).

Table 4: Regression results on the impact of social trust on determinants of economic growth

Dependent variables	Human capital	Investment	Trade	Regulation quality	Efficiency of administrative apparatus
Method	RE	RE	RE	RE	RE
Social trust	0.005	0.0007	0.243*	0.005***	0.004**
	(0.484)	(0.730)	(0.099)	(0.001)	(0.036)
Log GDP per capita	1.792***	1.057***	20.785***		
	(0.000)	(0.000)	(0.000)		
Post-socialist	3.091***		15.936	-0.338***	-0.277***
	(0.000)		(0.199)	(0.000)	(0.000)
Institutional quality	0.386**	0.505***		0.487***	0.640***
	(0.022)	(0.000)		(0.000)	(0.000)
Degree of openness		-0.001			
		(0.140)			
Inflation			-0.003		
			(0.721)		
Developed country			-12.883	0.449***	0.554***
			(0.312)	(0.000)	(0.000)
Political stability				0.282***	
				(0.000)	
No. of obs	185	188	212	196	196
R^2	0.7282	0.9663	0.0957	0.9128	0.8899
p-value (Wald-test)	0.000	0.000	0.000	0.000	0.000

Note: *** is significant at 1%; ** is significant at 5%; * is significant at 10%.

Table 4 shows that social trust positively influences trade, institutional quality and the efficiency of the administrative apparatus, hence, boosting economic growth. When social trust rises by 1 unit, trade increases 0.243 unit (0.243% GDP), institutional quality and the efficiency of the administrative apparatus go up 0.005 and 0.004 unit, respectively. However, there is not enough evidence to prove that social trust enhances human capital formation and investment.

3.3 Discussion

Results of the linear regression analyses using RE and 2SLS RE methods prove that social trust has a positive impact on economic growth. However, when splitting the data into developed and developing countries, the results are varied. For developed countries, social trust promotes economic growth with a high level of confidence. For developing countries, the correlation between social trust and economic growth is negative although this result is insignificant. The causes for such results might be the poor-quality of institutions and administrative apparatus, which if true, people would be exploited and lose their benefits if they put too much trust in others. Likewise, a linear regression analysis using RE is applied to examine the transmission channels, via which social trust impacts economic growth. The results prove that social trust ameliorates trade, institutional quality and the efficiency of the administrative apparatus, which determine economic growth. Social trust also improves the formation of human capital (measured by the number of years of education) and investment; however, there is insufficient statistical evidence for this statement.

4. Conclusion and policy implications

There is enough evidence to prove that social trust positively impacts trade, regulation quality and the efficiency of the administrative apparatus, which would boost a nation's economic growth. However, social trust might not play a role if that nation has low institutional quality and inefficient administrative apparatus.

For developed countries, the majority has high institutional quality (average score of 1.17) and efficient administrative apparatuses (average score of 1.23). In this group of countries, social trust is more likely bolstered by strong sanctions for violations of social conventions and legal provisions. Thence, these countries should find more solutions and policies to enhance social trust for higher economic growth.

The developing countries usually have low-quality institutions and inefficient administrative apparatuses. In those countries, the sanctions for violations are not strict, leaving loopholes for fraudulence. Consequently, the high level of social trust has not always resulted in high economic growth. Therefore, their priorities should be improving institutional quality and efficiency of administrative apparatus to boost the role of social trust in economic development.

In Vietnam, social trust is quite high, nevertheless, the quality of institutions, rule of law and the administrative apparatus are regarded as inefficient[1]. As such, similar to other developing countries, Vietnam needs to improve its institutional quality and administrative apparatus efficiency in order to enhance the role of social trust in economic growth.

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Notes:

[1] According to the WVS, 50.9% of the respondents in the survey said they trusted people; the quality of institutions from 1996 to 2013 deteriorated from -0.53 to -0.65 while the efficiency of the administrative apparatus experienced a slight improvement from -0.47 to -0.3.