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Applying Business Model Canvas for New Social Start Up Enterprise In Organic Farming

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Abstract

Recently, the current conventional farming practice is existing farming method adopted by more than 90% of our Vietnamese farmers under concept of increase production with increased use of fertilizers and pesticides. Even if farmers can read the pesticide labels, they do not always follow the instructions. That is resulting in pesticide exposure and poisonings. It has also been found that poorer farmers apply lesser amounts of pesticides but more toxic than richer farmers. These have affected soil health and fertility. Further, due to the effect of privatization, globalization and liberalization, agriculture turned to be loss making sector, as such which is requiring more and more subsidies and support from the government. The present status of conventional farming is alarming with several issues like threatening food security, contaminated food, mal-nutrition, injury to health of all living beings, decreasing production of important crops, decreasing productivity, polluted water, shortage of water cultivation, more failures of crops, increased input costs...

By using the Canvas's business model, the research tries to clarify all the important factors such as the market, customers, competitors and value proposition. The marketing plan and the financial plan are also mentioned but in general manner. In addition, the market is only focused on Hanoi which is capital of Vietnam with organic plan growing in Moc Chau district. Other markets will not be analyzed, concentrated or compared in this thesis. Besides business model, there are a lot of other elements, which influence successful development of social entrepreneurship. It is not possible to cover all of them, but in this research will try to explain in more detailed the relation between startup issues & social enterprise in agriculture.

Keywords: start up, Business Model Canvas, Organic Farming, Social start up enterprise



1. Introduction

Vietnam is one of the agricultural based countries. With favorable weather conditions of tropical country, fruits and vegetables in Vietnam could grow in all seasons with the wide range of diversity. However, the process of agriculture development is seen not sustainable when the farmers focus too much on productivity, intensive cultivation, and increasing crops with the use of agrochemicals which has increased dramatically since the early 1990s. The increased use and misuse of pesticides is particularly worrying for human and environmental health.

Consumer goods for health safety, environmental friendliness are not just a fad that will definitely be the trend in the coming period. Therefore, this is time for big move from conventional to organic base method which is a production system that avoids or largely excludes the use of synthetically compounded fertilizers. So naturally produce, organic agriculture should be to be healthy, help keep soil fertility, protect water resources and reduce environmental pollution as well as ensuring the health of humans and animals feed.

Development of organic agriculture confirmed the special role of 4 houses: the State, entrepreneurs, scientists and farmers. In four important links that entrepreneurs have particularly important role, there are decisive for the development of agriculture in our country today because enterprises are market-oriented, grasp catch the market demand. Although scientists have a special role, is an important link, but scientists also pointed towards highest economic efficiency and perfection are the stages from research to production when there is active participation businesses.

Ensuring the survival of the social enterprises especially in agriculture is not often easy task even for well established players. As a key to the success of every successful business is about business model and in social entrepreneurship this is no exception. Given of that, this research aims to apply Business Model Canvas for social startup enterprise in organic farming. The Business Model Canvas is a strategic management and lean startup template for developing new start up project. By applying Business Model Canvas we also can understand how Canvas can benefit social startup organic farming enterprise.

Business Model Canvas

A business model is the conceptual structure supporting the viability of a business, including its purpose, its goals and its ongoing plans for achieving them. In theory and practice, the term business model is used for a broad range of informal and formal descriptions to represent core aspects of a business, including purpose, business process, target customers, offerings, strategies, infrastructure, organizational structures, sourcing, trading practices, and operational processes and policies including culture. At its simplest, a business model is a specification describing how an organization fulfills its purpose.

Business Model Canvas is one of the popular business models which very useful today. It is a strategic management and lean startup template for developing new or documenting existing business models proposed by Alexander Oster Walder. It is a visual chart with following 9 elements

describing firms or product's value proposition, infrastructure, customers, and finances. It assists firms in aligning their activities by illustrating potential trade-offs. These are (1) Customer segment; (2) Value propositions; (3) Channel; (4) Customer relationship; (5) Resource; (6) Partners; (7) Key activities; (8) Revenue and (9) Cost.

(1) Customer segments

Social enterprise shall have at least two customer segments which are the customers who are willing to purchase products/services and the customers who are willing to support the social impact. Following questions should be asked about segments in a social enterprise:

- For whom are we creating value and what kind of value are we creating for them?
- Who are our commercial customers and why will they continue to be our customers? Who are our impact customers and what value are they seeking from us?
- How important is the linkage between our products/services and our impact to our customers? Are they prepared to pay more for the impact?
- What kind of value proposition will keep customers coming back over the long-term?

(2) Value proposition

The way a social enterprise communicates its impact value propositions to customers requiring a deep understanding of customers and the nature of the impact itself. Making decisions about what and how to share impact measures with customers can be important part of making sure that the impact value is a part of purchasing decisions by customers. Following question to ask about value proposition of social enterprise: (i) What value do you provide? Why they would come back? (ii) What is the relationship between commercial value and social impact value? (iii) How you measure value proposition?

(3) Channel

Working out to reach and communicate with customers and help them to evaluate the value proposition is a key part of opening business in social enterprises. There are a lot of question for social business enterprise when joining to market as following: (i) How to raise awareness about products/services? (ii) How does social enterprise stand out in a crowded market? (iii) How to help customers evaluate the organization proposition? (iv) How to enable customers to purchase specific products/services? (v) How to deliver value proposition to customers and keeping they come back?

(4) Customer relationship

For social enterprise it can be interesting to push out what we would consider traditional customer relationship with a business, and explore how customers could become our community or how they become our partners. When customers become active in your social enterprise they can also take on roles associated with deepening or scaling social impact.

(5) Revenue stream

Social enterprise derives a majority of its revenue from trade that makes it a social enterprise. In designing social enterprise it is critical that we explore the business models of analogous commercial business. It is important for social business enterprise to focus on the right revenue



stream. That is a mix of revenue which appropriate for the particular impact being delivered, and where there is a real probability that the business will generate profits and become commercially viable.

(6) Key resources

Key resources are the assets, tangible and intangible, that make the business model work. That could comprise all of following elements:

- Physical resources: facilities, building, equipment & tools...
- Intellectual resources: brands, knowledge, partners, skills...
- Human resources: people
- Financial resources: cash, credit from banks, donated fund...

(7) Key activities

Key activities are the things that the enterprise must do to deliver value to customers. That could include following activities like research and development, marketing campaign, testing, training...

(8) Key partnerships

As mentioned before, partnerships refer to the network of suppliers, allies, supporters... They can support and enhance both commercial and social impact. The enterprise may have an active network of supporters who: Promote products and services; As a distribution network; Offer value added to impact of employees.

(9) Cost structure

Like other parts of social enterprise business model, cost structure needs to take into account of both commercial production & operating cost and the cost of delivery impact. All they are costs that the enterprise is willing to incur in order to achieve impact objectives. For example, for the enterprise that aims to ensure long-term development of local farmers by running a community supported agriculture model, then they need to think about the cost are involved.

2. Methodology

To complete the research, the common economic research methods such as analysis, synthesis, logical thinking and technical methods such as statistics, comparisons and reviews, expert interviews were fully deployed.

In reality, because the main contents of the research is about the case study, which highlights the importance of secondary data.

There are many reasons why we choose to use document analysis. Firstly, document analysis is an efficient and effective way of gathering data because documents are manageable and practical resources. Documents are commonplace and come in a variety of forms, making documents a very accessible and reliable source of data. Obtaining and analyzing documents is often far more cost efficient and time efficient than conducting your own research or experiments. Also, documents are

stable, “non-reactive” data sources, meaning that they can be read and reviewed multiple times and remain unchanged by the researcher’s influence or research process.

We use a huge plethora of texts for research, although by far the most common is likely to be the use of written documents. A wide array of documents is better, although the question should be more about quality of the document rather than quantity.

We use secondary data: statistics reports from various sources - General Statistics Office of Vietnam, data from Ministry of Agriculture and Rural Development...

Brief, this research use of documents as a data source in qualitative research and discusses document analysis procedure in the context of actual research experiences. The application of document analysis to a grounded theory study is illustrated.

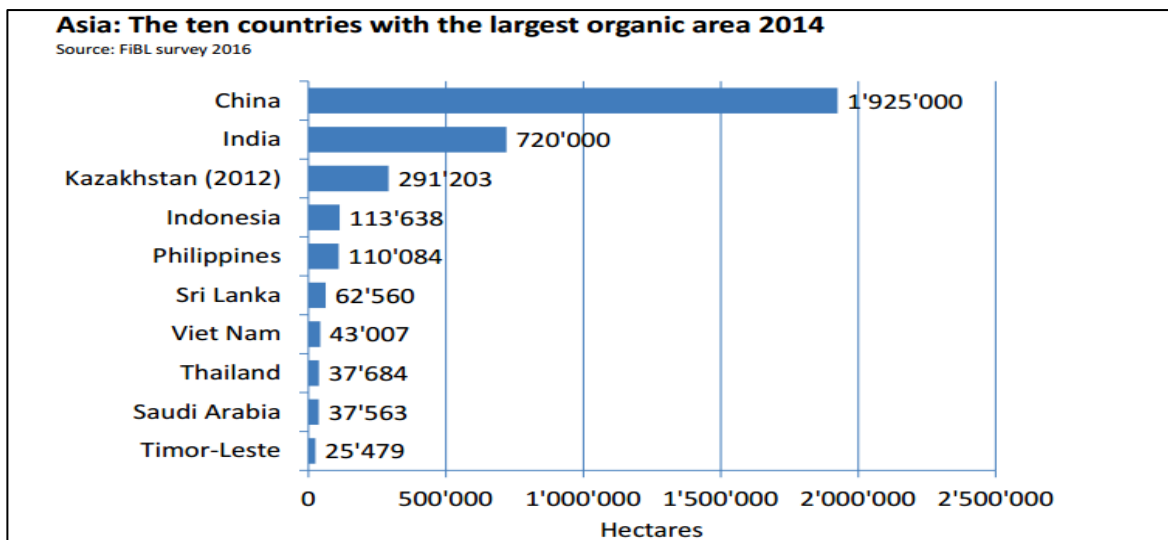
3. Result

3.1 Market research & analysis

Growth in the Organic industry

According to FiBL & IFOAM – Organics international released in 2016, the area of organic agricultural land in Asia is almost 3.6 million hectares equal to 0.3% of the total agriculture area in the region. Eight percent of the global organic land is in Asia, between 2013 and 2014, the organic agriculture in Asia was increased 4.7% with the largest producer is China.

Table 1: The ten countries with the largest organic area in Asia in 2014



Vietnam is in the top of 10 countries with the largest organic area 2014. Vietnam is experiencing strong demand from overseas. However, the authenticity of organic products is now an issue and the organic standards and regulations that have been under development by the Ministry of Agriculture and Rural Development (MARD) since 2014 are still in progress. The foreign



certification bodies active in Vietnam are expanding and focused on providing export certifications. Participatory guarantee systems (PGS) are expanding and now present in many provinces from the North to the South of Vietnam. There is a window opportunity to establish a local organic certification scheme coupled with an inspection service for export certification.

Hanoi Market

Hanoi is the capital of Vietnam. Its population in 2014 is estimated about 7.26 million people and vegetable demand of the whole city is about 2.000 -3.000 tons/day. The safe vegetable productivity of farming areas surrounding Hanoi only meets 30% vegetable demand of Hanoi. According to the survey conducted by author in the last 2015, on total population of 100 peoples which are showing the consumption behavior of customers. More than 65% of customers realize the needs of using organic vegetable is due to it is better for health as well as the environment. However, 57% do not use organic product because of trust as well as it is easy to find. Most of people show that if they can see by eyes the way of farming and if the foods get qualification from Global organization, then they will believe it's actually organic products. More than 90% of customers are buying foods at conventional markets for convenience. However, they are willing to spend money for organic products at the price much expensive than normal foods by 1.5 to 2 times.

Organic suppliers

There are a few numbers of small organic farms that operate near on and in Hanoi. Most of suppliers in Hanoi market are safety vegetable production farms. Total farm size of this type is 4.500 ha and allocated into 116 wards of Hanoi. They can only supply 30% vegetable demand of the city. By making agriculture co-operative businesses, they have advantages of farming size. As a result, low vegetable productivity and limitation in quality controlling are common incurred issues. Moreover, Participatory Guarantee System (PGS) is still not well-known so that it hardly builds up customer trust.

In this section three short case studies are presented to highlight some of the organic farming, which are: (1) The vegetable farm runs by Organik Da Lat; (2) The organic agriculture program by Agricultural Development Denmark Asia (ADDA); (3) VinEco.

Table 2: General dimensions about organic market

Dimensions	Details
Current organic market	Unstable supply Higher price (2 to 3 times or even more, compared to normal products on market) Supply driven by demand Consumer's education Better quality
Organic brand	Several branding in market More choice for the consumer
Trends	Local food Environmentally friendly Gluten free produce New product lines
Organic foods customer	Definition of organic Smarter consumers
Reason to buy	Health Environment Taste
Types of consumers based on trust	Trust labels/not trust the labels Clear differences Brand name
Increase trust	Pricing accuracy Knowledge of clerks / advices Educating consumers Quality Knowing the producer
Sustainable development	Very important Not dangerous Will be a condition to access the market A way of differentiation Could be used to increase trust Competitive advantage

3.2 Developing the Business Model Canvas for social startup enterprise with the first implementation in Moc Chau district

Moc Chau district

Son La is a mountainous province with natural area of 14,174.44 km². With the first implementation, the selected area to implement this project is in Moc Chau district of Son La province. Moc Chau is one of wonderful area with cool climate divided clearly into 4 seasons where plants could grow very well.

In term of developing vegetables and fruit are also thriving in Moc Chau with 25 enterprises and cooperatives, area of vegetables, flowers over 1,100 hectares, creating stable jobs for over 1,500 permanent employees. Moc Chau district has focused on supporting enterprises, cooperatives build multiple models to develop vegetables, tropical fruit and agricultural model high-tech applications, such as: model revenue of 1.5-2 Florists VND/ha/year of JSC tropical flowers; many models of economic fruit such as strawberries, crunchy pink, avocado, passion fruit, vegetable reach 400-500 million safety / ha...

Business Model Canvas for new social start up enterprise in organic farming in Moc Chau district

In this research, the authors want to use the Canvas business model to present the general picture of a business idea as following.

Table 3: Business model Canvas for new social startup in organic farming in Moc Chau district

Key partners	Key activities	Value proposition	Customer relationships	Customer segments
<ul style="list-style-type: none"> ✓ Vietnam National University of Agriculture ✓ Media ✓ National Institute of Nutrition ✓ General Council of Agriculture and Rural development of Vietnam ✓ Local authorities 	<ul style="list-style-type: none"> ✓ R&D ✓ Cooperation with farmers ✓ Planting ✓ Testing (qualitative and quantitative) ✓ Mass production 	<ul style="list-style-type: none"> ✓ Distributing organic foods ✓ Changing customer behaviors ✓ Rural development and industrialize Vietnamese farming 	<p>Workshop, seminar</p> <hr/> <p>Channels Direct: stores in Hanoi, website Indirect: retailers/restaurants</p>	<p>Peoples in Hanoi capital, including but not limited the following:</p> <ul style="list-style-type: none"> ✓ High income customers (tourist, expatriate, rich family) ✓ Low and moderate income ✓ Restaurants ✓ Stores/Retailers
	<p>Key resources</p> <ul style="list-style-type: none"> ✓ Technology ✓ Farmers ✓ Seeds, fertilizes 			

<p>Cost structure Production cost (seeds, nutrition, land, labor...) R&D cost Selling & administrative Other costs (getting organic certification...)</p>		<p>Revenue streams Selling organic products Transferring technology Family outing, site visit trip for customers</p>
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Customer segment

The customer segment focuses on people who are living in Hanoi capital of Vietnam with population in 2014 is estimated about 7.26 million people with nearly 49% living in city. That is considered is target customers who are most likely to purchase the products. People who are among the highest spenders on organic foods are on average more affluent and younger.

Customer Segments	Customer's Behavior	Needs	Alternatives	Competitive Advantages
High income (tourism)	Looking for a "native" and "local experience" Want to try something new	High quality Good looks and taste Exotic, unique choices Authentic, native	Restaurants Conventional vendors Health food stores	Fresh Organic Diversity products
High income (local)	Looking for fresh, organic Increasing social consciousness when buying	Demands high quality product, freshness, appearance, and taste	Health food stores Other market vendors Restaurants	Fresh Organic Diversity of offerings compared to other market growers
Low-Moderate (local)	Makes necessary food purchases, need to spread their income for foods	Food that tastes/looks good Food they like and at acceptable price	Local grocery stores/Prepared foods/Markets Conventionally grown foods	Have been instructed to buy foods by health care providers Pricing comparable to local conventional retail items but with a marketable edge
Retailers/ Stores	Products in high demand and/or trendy	Competitive price Top quality and appearance	Other local and non-local organic producers	Organic often yields superior quality



Customer Segments	Customer's Behavior	Needs	Alternatives	Competitive Advantages
	Want to make a mark-up on re-sale	Organic fills new niche	Conventional producers	Product availability and cost to ship/store imported product
Restaurants	Products in high demand and/or trendy Freshness and reliable source	Competitive price Top quality and appearance Fresh, local, organic	Other local and non-local organic producers Conventional producers	Local and organic often yields superior quality Product availability and cost to ship/store imported product Social mission

Value proposition

Better foods quality

The quality of food is also determined by its taste. The tastiness of fruit and vegetables is directly related to its sugar content, which in turn is a function of the quality of nutrition that the plant itself has enjoyed. It's not just imaginary: organic food actually can taste better than its conventionally farm-raised counterpart. Organic plants have greater metabolic and structural integrity in their cellular structure than conventional crops. As a result, organically grown foods can be stored longer and do not show the latter's susceptibility to rapid mold and rotting.

Changing customer's behavior of using healthy foods

Vietnam now has some 43,000 hectares of land dedicated to organic farming, which is about only 0.2 percent of the total arable land in the country, according to the Vietnam Farmers Union. The area for organic agriculture of Vietnam is too small compared to that of other countries, even Cambodia and Thailand. When people can access safe and healthy food, it would change consumer's behavior leading to create, encourage the domestic market to make healthy, organic food.

Channel

There are hundreds of channels to reach the customer segments. Therefore, the entrepreneurs need to choose carefully to maximize the effectiveness. There are three dimensions of trust considered in this research (i) trust towards the brand/store, (ii) prior experiences with organic foods and (iii) organic labels trust. We ran a three t-test for independent samples to uncover differences/similarities between the regular customer and non-regular customer on the trust dimensions.

Customer Segments	Specific Outreach Strategies
High income (tourist)	Website and online sales Retailer stores with own brand
High income (local)	Website and online sales Retailer stores with own brand Continue to build e-mail database Invite customers to attend monthly/quarterly community workshop Invite customers to attend field visit at production site
Low-Moderate (local)	Website and online sales Retailer stores with own brand Maintain high community profile through presence at markets, occasionally story in the local community newspaper, and by posting fliers and brochures at the stores Connect to, and nurture, repeat customers at farmer's markets Continue to build e-mail database Invite customers to attend monthly community workshop Invite customers to attend field visit at production site
Retailers	Provide on-site marketing collateral such as laminated product nametags for vegetables, fliers, and brochures. Invite retailer to bring staff to the farm to increase education on product and mission.
Restaurants	Encourage restaurant management to acknowledge about this project Provide on-site marketing collateral such as fliers, and brochures. Invite restaurant to bring staff to the farm to increase education on product and mission.

Customer relationship

In order to building up and maintaining customer relationship, the following strategic shall be applied:

Organizing workshop, seminar for current/potential customers

Buy organizing workshop or seminar for customers we can let them know more about organic farming and its benefit. Workshop will help customers learn what food safety programs, resources, and practices are available. In some practical workshops, customers will be given tools to assess actual present farm practices. The workshop topics will include proper hygiene and sanitation,

compost, and post water harvest use. By joining these, customers will receive all the information they need to develop a basic food safety plan that they can use later to grow small scale farming at their home.

Training for children through family outing or school trips

Many kids today lack the knowledge about food such as how they can grow it, care for it, nurture it, and harvest it, where it comes from, and the benefits of growing and preparing your own food. Learning about how food is produced at an early age will improve their knowledge on the environment and ecosystem. Introducing children to organic farming acquaints them with the value of food that's grown in a healthful way.

Revenue

As described in the value proposition column, the enterprise offers vegetables in the market. Therefore, the revenue will be generated from selling organic food.

Partners

The key partnerships of the enterprise must be the suppliers who provide vegetable seeds and fishes. Other key partnerships are the professors of the organic farming to consult and provide the technical support.

Partner	Description of Support
Ministry of Trade	Support in providing information about market, requirements for types of products, quality standards, production volume required for both domestic market and export
Ministry of Agriculture and Rural development	Research organization system policies, rules, standards, quality certification for organic products in order to developing strategic planning and selection of sectors Comprehensive assessment about organic farming to figure out the difficulties and problems and propose solutions suitable for development in the near future
General Council of Agriculture and Rural development of Vietnam	Promote organic agriculture and provide organic certification Connection with organic farmers in other provinces of Vietnam Strengthening international cooperation in order to gain and exchange experiences in organic field
Vietnam National University of Agriculture	Provides additional training for farmers including higher education courses, and is developing a degree program in Tropical Organic Agriculture Organizes course of organic farming toward forming organic specialized training in the future
Media	Provides connection to customers and information on local food demand and availability

Partner	Description of Support
National Institute of Nutrition	Operates a clinic farmer's market, produces nutrition education literature, and promotes market to community Support for frequency organic production testing
Local authorities (People committee of Son La and Moc Chau, Farmers association of Moc Chau...)	Supports enterprises with successful models, helping them promote, introduce products, thereby enhancing the understanding and interest of the society about organic products Supports enterprises in coordination with farmers
Farmers	Produces organic products under long-term agreement with enterprises following the instruction from seeding, planting till harvesting Joins training program about organic farming Regularly updates with enterprises and related organization for any case of uncertain

Resources

The important intellectual resource for the organic farm is the knowledge of running the organic system. It is also the business model which is developed in a sustainable way. The human resource in the start-up process involves only owners who are passionate in the agriculture and want to change the food quality perspective in Vietnam. The local labors can be used to help owners to achieve their mission as well. The financial resource mostly consists of owner's investments, and loans from the government or the bank.

Key activities

For the purpose of distribute the value proposition to customers social startup enterprise shall do a lot of activities. In this thesis, the author would like to focus on some main key activities.

(1) Understanding the organic consumer profile

Hence, the key activities shall be:

- Assessing the importance of the channels of distribution, labeling and certification process and food mileage in the organic food market
- Determining consumers' purchasing behavior in terms of answering how consumers buy, where they buy, their sources of information, their trust orientations, and the trusted channels of distribution
- Conducting consumer survey, the questionnaire might be structured to focus on consumers' general opinion about organic food, consumption and shopping habits, and last, reasons for buying organic and then dealing with trust dimensions



(2) Studying about organic industry and market and current distribution channel

Enterprise can see the big potential in organic industry. From their perspective, consumers seem to be attracted by the health and nutrition aspects, while distributors are attracted by the profitability of this growing market. Therefore, understanding about market is one of key for success.

Further, consumers are becoming more educated about organic foods and they are willing to pay higher price at acceptable level. Therefore, the shorter and direct channel is more appropriate (sales at farms gate, direct from producer/farmer), that not only help to reduce pricing but also can increase customers trust as they can see actual production process and distribution. There are differences in customer purchasing behavior based on different levels of trust: trust related to the labeling and certification, trust related to the channel of distribution, and trust of the producer. Therefore, various channels need to be considered carefully.

(3) Coordinate with farmers and related authorizations

This project is aimed to train farmers in organic agriculture and to develop the market for organic crops, in which:

- Identifying targeted farmers through local authorities like People committee of Son La and Moc Chau, Farmers association of Moc Chau ... to gather qualified farmers into groups produce a single organic crop type and combine their yields to achieve economies of scale.
- Providing technical training to all farmers under this project about organic production and how it benefits farmers. With direct support of technical staff could support farmers control more effective pests and diseases, fertilizer and produce organic products properly. Product appearance, quality is satisfactory for supermarket sales.
- Dividing farmers in to groups, each group will under control of controllers who is responsibility for all steps from seeding, planting and harvesting. Each group also has its own specialization in several kinds of product.
- Implement internal audit activities, in which, each group will provides additionally guidance on technical support for each other. Controllers directly involve in production with the groups and monitor/evaluate the group, expressing advantages and disadvantages of what they have done in order to share experiences for coming time.
- The experts and controllers of the project were very closely managed with local authority, consulting and directing the local officers to effectively bring good demonstrations.

(4) Organic brand and certification

Recently, consumers mainly using standard channels of distribution are looking for convenience, healthy products and taste. These consumers do not have a high knowledge of what organic is and seem to get confused between organic and natural products. Several organic labels are present on the market. This induces some confusion, as consumers do not know which one(s) to trust. Therefore, the organic labels that should play a central role do not seem to have achieved that position in the consumers' decision-making.

In addition, given the confusion that currently exists around 'clean', 'safe' and 'organic', certification and labeling systems serve as tools to enhance distribution and market development, create trust, and foster confidence. It is a commitment from producers/farmers to work with certain standards of production. Therefore, getting of formulated standards for organic production and certification at national level or international level will be an important task.

5) Continuously invested for research and development

Organic production requires extensive knowledge and experience. As such, continuously investing for research and development is one of critical activities. With implementation of crop testing and experimentation with different organic methods could provide invaluable information on organic fertilization; timing of crop planting cycles, and organic seed varieties. The result is a system that has produced high yields with excellent product quality (taste, shelf-life, appearance, weight), and minimal insect damage.

There are numerous variables that must converge to produce a healthy crop so a strong working relationship with relevant organization/department could bring a huge support during production and innovation cycle.

6) Considering about social impact

Some social impacts have been expressed on the first part of Business Model Canvas. In addition, there are some activities can bring not only benefit for social but also for company's future growth such as:

Coordinate with educational organization: the enterprise will look for the educational organization partner to organize extracurricular activities for pupils in company's production area. Through these activities, pupils can get helpful knowledge, for instance: the way that vegetable grow, how to grow plants and the likes. Moreover, they can experience the realities by planting vegetable them self. By joining the program, pupils can apply what they learn in biology subject at schools as well as get the updated knowledge from reality. Besides, the program will educate pupils' awareness of protecting environment and using the organic foods. For long term, the program will create a new generation of citizen who have better attitude of using products which are environmental friendly. For the company, implementing the program bring various opportunities by introduce organic product to the potential customer like pupils' parents, the educational organization partners and the likes. The customers can be not only experience the process of production but also tasting the quality of organic foods. It is the good chance to increase their trust of the foods' quality.



Costs

The costs are required for control and maintain the system, run the distribution channel, create a social media platform and online webpage, and to cover production cost. These are the general costs of the enterprise will be faced and focused to minimize. Some costs in specify as following:

- Labor cost
- Investment for machinery and equipment such as multifunctional and small tillage machine, pesticide spraying machine, green house, rapid assay equipment with good quality for provincial mission group (rapid assay of Content of NO₃⁻, pesticide residues ...)
- Information and marketing system:
 - ✓ Introduction and dissemination of results of the demonstrations to other locations inside and outside project province. To invite radio and television, to make video clips to reports on the province's information system about demonstrations of organic foods production in the project communes as well as nation while.
 - ✓ Promote marketing of products so that consumers will be able to distinguish the difference between products traditionally produced and organic products.
 - ✓ Design, printing of product packaging, quality registration and quality barcodes for products, registration of trademark and product promotion.
 - ✓ Getting organic certification
- Direct production costs comprise seeds, fertilizer, water treatment, electricity...
- And other cost (i.e. general and administrative cost...)

4 Discussion and Conclusion

Organic farming has not yet played an important role in Vietnam's agriculture sector. The major organic commodities include vegetables, tea and, shrimp though efforts have been expanded to include other products such as rice, oranges, lychee, cinnamon and ginger. There is still a lack of specific Government policies to support the development of organic agriculture and as a result, there is still little attention given to organic farming from research, training and its extension services.

The research is based on knowledge in agriculture field and previous professional dissertation about business model, social enterprise and startup. In the context of current need from market, this dissertation is very suitable for further social entrepreneurship startup experience especially in agriculture.

However, the market is only focused on Hanoi market which is one of the biggest cities in Vietnam and it is also the most potential market for the food industry. Other markets will not be analyzed, concentrated or compared in this thesis. There are some limitations of this research:

Firstly, because this thesis project focuses on developing business model adaption for social startup enterprise in organic farming, therefore, nonprofit is not cover at large. Nevertheless, outcomes of this thesis could be adaptable for different kind of social farming enterprise.

Secondly, the sources of evidence in this research are limited. The analysis about successes and failures of sample companies largely based on indirect sources such as the companies' websites, which may be effected by the marketing goals of these companies.

Thirdly, this research is involved by personal judgment which may cause some problems with objectivity. In addition, due to limitation of time and knowledge, as such this research could not cover all possible circumstances that might arise.

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TAJAMAS (Tabungan Jamban Masyarakat) as a Solution Towards Open Defecation Free at Kalongan Village, Bojonegoro Regency, Indonesia

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Abstract

Open defecation by society in Indonesia is still comparatively high. The problem was found in the cities and villages. Included in the Kalongan village, Bojonegoro Regency, which shows that the habit of people who do open defecation is still relatively high. The result of the field practice and observation by student Faculty of Public Health Airlangga University in 2016 shows that 29.6% of 230 families in Kalongan Village, Bojonegoro District does not have toilet. This is a problem because the government of Bojonegoro's target is 100% Open Defecation Free. Public awareness to behave defecation in the toilet is still very low. They do not understand that it can contaminate water and soil in the environment, because the effects do not have a direct impact. Economic limitations is the biggest factor that cause people not to build healthy toilet and prefer to defecate in rivers or in plantations. Based on the problems that have been presented, an alternative solution appears that is expected to solve the problem, namely TAJAMAS Program (Tabungan Jamban Masyarakat) or in english mean Public Toilet Savings. This program will facilitate the people to build healthy toilet, through routine saving mechanisms adapted to the capacity of citizens. This program is implemented with the principle of mutual assistance, where people who already have enough savings will build toilet with the help of all members of the community members pogram. TAJAMAS program is expected to be solution of the problem, so people can build healty toilet and reduce open defecation behavior in the society. The TAJAMAS program also supports the Community- Based Total Sanitation Program proclaimed by the Indonesian Ministry of Health. Of course, this is also expected to bring a change in community behavior towards a healthier life style to improve clean and healthy life behavior, as well as helping the government of Bojonegoro District to achieve 100% ODF target.

Keywords: Health Behaviour, Toilet, Open Defecation Free, Bojonegoro.

Background

Health development in Indonesia is an integral part of national development. The purpose of health development is to increase awareness, willingness, and ability to live healthy for every person to realize the optimal health of society. In order to achieve these objectives it is necessary to endeavor a comprehensive and acceptable health effort that is accessible to all levels of society. The realization of the development is the existence of all forms of efforts to improve the health status, both in the national level to the family level. Faculty of Public Health Airlangga University tries to improve public health at Family level in Village through field practice program. When the program is implemented, students conduct a series of activities. Starting from the research for primary and secondary data collection to analyze the village situation and the problems that exist until the series of activities to solve the problem. Based on the results of data analysis, obtained several problems. However, due to resource constraints, some selection is done through various methods to get priority problem to be solved. Based on the results of questionnaires which are then selected by the CARL (Capability, Accesibility, Readiness, and Leverages) method when the Focus Group Discussion is conducted, the priority of the problem is the lack of the people ownership of toilet, that cause open defecation behavior still occurs in the community. Open defecation is a behavior that still become one of the triggers of health problems in Indonesia. To solve this problem, fishbone method is used to find the determine causes of the problem. After that, people voice collected from the stakeholders to give ideas about alternative solutions to solve the priority problem. From several alternatives solutions, one priority solution is specified. That priority solution will be realized become a program. The program is TAJAMAS or People Toilet Savings in order to solve the problem. This program will support the goverment Bojonegoro's target that Bojonegoro District is 100% Open Defecation Free in 2019.

Objective

1. To study the community analysis in Kalongan Village, Bojonegoro Regency, East Java, Indonesia.
2. To study the health problems in Kalongan Village, Bojonegoro Regency, East Java, Indonesia.
3. To study the main priority health problem and the determine cause of the main priority health problem in Kalongan Village, Bojonegoro Regency, East Java, Indonesia.
4. To study the alternative solution that become a program of the main priority health problem in Kalongan Village, Bojonegoro Regency, East Java, Indonesia.

Problem Question

1. How community analysis in Kalongan Village, Bojonegoro Regency, East Java, Indonesia?
2. What are the health problems in Kalongan Village, Bojonegoro Regency, East Java, Indonesia?
3. What is the main priority health problem and the determine cause of the main priority health problem in Kalongan Village, Bojonegoro Regency, East Java, Indonesia?
4. What are the alternative solution that become a program of the main priority health problem in Kalongan Village, Bojonegoro Regency, East Java, Indonesia?

Method

This research is located at Kalongan Village, Bojonegoro Regency, East Java, Indonesia. It has been done during 35 days start from July 18th till August 22th 2016. It used observational descriptive method. The data collected in the form of primary and secondary data. Primary data obtained from questionnaires that made by regency health office distributed to respondents, focus group discussion to determine prioity problem and solution used CARL and MEER method, and indepth interview. While the secondary data obtained from the village data. CARL method is a technique or method used to determine the priority of the problem. This method is done by determining the score on certain criteria, such as capability, ease of accessibility, readiness, and leverage. The bigger the score the bigger the problem, so the higher is in the order of priority. MEER method is a technique used to determine the priority of the alternative solution. Just like CARL method, this method is done by determining the score on certain criteria, such as methodology, effectiveness, efficiency, and relevancy. The bigger the score, the higher is in the order of priority. Respondents from this research are Kalongan villagers with 230 families consisting of 735 residents. This research used total population sampling. Data analysis techniques using trial application SPSS version 21 and Microsoft Excel.

Results

a. Community Analysis

The number of residents of Kalongan Village that became our respondents was 735 family members or as many as 230 families. Data obtained from questionnaires are demographic data such as population, age, gender, occupation, education level, and income level. Family sanitation data such as availability of clean water, sewerage, ownership and latrine type, reason not having toilet, defecation, relief to build toilet, ownership of trash can, trash sorting, trash collection, trash treatment, and the location of the cattle pen. In addition, environmental health data are obtained which includes cattle ownership and house conditions. Here is the presentation of data obtained :

Table 1. Number of Population and Age of Citizen Categories

Age		Male		Female		Total	
		N	%	N	%	N	%
Baby	(0-11 months)	5	0,7%	11	1,5%	16	2,2%
Toddler	(12-59 months)	13	1,8%	13	1,7%	26	3,5%
Teen	(5-14 years)	57	7,8%	59	8,0%	116	15,8%
Adult	(15-55 years)	213	29,0%	234	31,8%	447	60,8%
Elderly	(>55 years)	71	9,7%	59	8,0%	130	17,7%
Total		359	49%	376	51%	735	100%

Based on table 1 it can be concluded that majority of population in Kalongan village is adult (15-55 years old) amounted to 60.8% of the total population 735.

Table 2. Occupation

Occupation	N	%
Farmers	259	35,2
Entrepreneur	68	9,3
Government Employees	6	0,8
Private Sector	35	4,8
Unemployment	170	23,1
Student	136	18,5
Housmaid	27	3,7
Total	735	100,0

Table 2 shows that majority of the population in Kalongan Village works as farmers at 35.5% of total population.

Table 3. Level of Education

Education	N	%
No school	117	15,9
Primary School	351	47,8
Junior High School	128	17,4
Senior High School	56	7,6
Diploma 1	1	0,1
Diploma 3	5	0,7
Bachelor	4	0,5
Not yet school	73	9,9
Total	735	100,0

Table 3 shows that majority of the population in Kalongan Village have final education level in primary school as 47.8% of total population.

Table 4. Income Level

Income	N	%
<IDR 500.000	94	42,9
IDR 500.000 - IDR1.000.000	51	23,3
> IDR1.000.000 - IDR1.500.000	23	10,5
> IDR1.500.000 - IDR2.000.000	12	5,5
> IDR2.000.000	39	17,8
Total	219	100,0

Table 4 shows that Most of the people of Kalongan Village have income level <500.000 that is equal to 42,9%. The income level data is viewed through the head of families as much as 230 families. However, there are 11 heads of families who are elderly and already not working (have their own family card but live with their children and have no income), so the number of respondents to income data is as many as 219 families.

Table 5. Availability of Clean Water

Availability of Clean Water	N	%
Yes	228	99,1
No	2	0,9
Total	230	100,0

Based on table 5 it can be seen that 99.1% of families in Kalongan Village have access to clean water.

Table 6. Availability of Sewerage

Availability of Sewerage	N	%
Yes	91	39,6
No	139	60,4
Total	230	100,0

Based on table 6 it can be seen that Majority of people in Kalongan Village do not have sewerage on their house.

Table 8. Ownership of Toilet

Ownership of Toilet	N	%
Yes	162	70,4
No	68	29,6
Total	230	100,0

Based on table 8 it can be seen that 29.6 % of people in Kalongan Village still doesn't have toilet on their house.

Table 9. Toilet Type

Toilet Type	N	%
Sanitary	133	82,1
Not sanitary	29	17,9
Total	162	100,0

Based on table 9 it can be seen that most of families in Kalongan have sanitary toilet.

Table 10. Reason Has No Toilet

Reason	N	%
No help yet	1	1,8
Fund	44	78,6
Funds allocated for heart treatment	1	1,8
Has no funds for development materials	2	3,6
Funds allocated for schools	2	3,6
Free toilet from government already broken	1	1,8
The toilet must be nice	1	1,8
Difficult developing process	1	1,8
Elderly	1	1,8
There is no place	2	3,6
Total	56	100,0

Only 56 of 68 families who have no toilets were interviewed for reasons not having toilets. Based on table 10 it can be seen that most of the families in Kalongan Village did not have toilet caused by no funds.

Table 11. Stool

Stool	N	%
River	34	60,7
Rice fields	2	3,6
Empty land	6	10,7

Table 11. Stool (continued)

Stool	N	%
Toilet belonging to neighbors or relatives	12	21,4
Public toilet	2	3,6
Total	56	100,0

Based on table 11 it can be seen that most of families in Kalongan Village defecate on the river as 60.7% of total population.

Table 12. Toilet Assistance

Toilet Assistance	N	%
Already	6	10,7
Not yet	50	89,3
Total	56	100,0

Based on table 12 it can be seen that 89.3% of families in Kalongan Village not receive toilet assistance from goverment yet.

Table 13. Ownership of Trash Can

Ownership of Trash Can	N	%
Yes	56	24,3
No	174	75,7
Total	230	100,0

Majority of families in Kalongan Village do not have a trash can. Based on the results of interviews to respondents there is information that the backyard of their house is large enough so they can throw their trash in there.

Table 14. Trash Sorting

Trash Sorting	N	%
Yes	32	13,9
No	198	86,1
Total	230	100,0

Based on table 14 it can be seen that 86.1% families in Kalongan Village did not sort out their trash. Their just throw it on their backyard.

Table 15. Trash Collection

Trash Collection	N	%
On a vacant lot	224	97,4
In public trash can	4	1,7
In river	1	0,4
Other	1	0,4
Total	230	100,0

Based on table 15 it can be seen that Almost 100% or as 97.4% of families in Kalongan Village collect their trash on vacant lot.

Table 16. Trash Treatment

Trash Treatment	N	%
Burned	206	89,6
Dumped	15	6,5
Recycle	3	1,3
Other	6	2,6
Total	230	100,0

Based on table 16 it can be seen that most of families in Kalongan Village just burn their trash.

Table 17. Location of Cattle Pen

Location of Cattle Pen	N	%
Separate from house	119	51,7
Do not separate from house	111	48,3
Total	230	100,0

Based on table 17 it can be seen that almost 50% as 48.3% families in Kalongan Village did not separate their cattle pen from their house.



b. Health Problems

After data processing, discussion activities are held to determine the list of problems that will be prioritized through CARL method. Here are the health problems in Kalongan Village:

1. 29.6% of the people do not have toilet.
2. Have no sewerage.
3. Incorrect waste management.
4. The cattle pen is not separate from the house.

c. Main Priority Health Problem and The Determine Causes

Priority problem determination is done by conducting FGD together with stake holders as citizen representative. Priority problem are determined by assessment using the CARL method. Each assessment is given by the FGD participants. Student is only a facilitator. Here are the results of prioritizing problems:

Table 18. Priority problem

No	List problem	C (Capability)	A (Acceptability)	R (Readiness)	L (Leverage)	Total	Rank
1.	29.6% of the people do not have toilet	5	5	2	3	150	1
2.	Have no sewerage	3	3	3	2	54	3
3.	Incorrect waste management	1	1	4	2	8	4
4.	The cattle pen is not separate from the house	3	4	3	2	72	2

Based on CARL method that has been found above, the problem priority is obtained that is 29.6% of the people do not have toilet. After finding the priority of the problem, then the next step is to make a fishbone diagram. Fishbone diagrams aim to assist in considering the root causes of problems with structural approaches, encouraging group participation and increasing group members' knowledge of the problem-causing analysis process, and identifying areas where data should be collected for further research. So with the fishbone diagram, we can know what is the

root cause of the problem 29.6% of the people of Dusun Kalongan who do not have toilet. In our Focus Group Discussion activities with stake holders we discussed together and made a fishbone diagram to find out the root cause of the 29.6% priority problem of the Kalongan Hamlet who has no toilet. Here are the results of fishbone diagrams obtained from the Focus Group Discussion.

There are 3 main causes of the priority of the problem, namely:

1. Man

From the human factor, the cause of the people who do not have toilet is the lack of awareness to build toilet. There are two causes of low public awareness to build toilet:

- a. Some people are comfortable to defecate in places other than toilets. This is caused by two factors namely the influence of neighbors and not accustomed to the toilet
- b. Lack of will and experience. This is due to the low quality of human resources (HR).

2. Material

Of the material factors, the cause of the people who do not have toilet is less aid. This is because the government's assistance is only doctors, cement, sand, bricks.

3. Money

From the money factor, the cause of the people who do not have toilet is not having the funds to build toilet. The root causes of community problems that do not have the latrine are supported by the results of the questionnaires that we disseminate to the people of Dusun Kalongan who do not have toilet. Of the total 68 heads of households who did not have toilet, re-interviews were conducted on the reasons for not having toilet and there were only 56 household heads that could be interviewed. Reinterviews were conducted because to find out more about the reasons for not having toilet as well as finding data for intervention needs such as the media preferred by the respondents.

d. Alternative Solution

Alternative solution which then developed into a program is obtained through NGT (Nominal Group Technical) method that is structured method used to dig deeper contribution of participants. Based on the implementation of the NGT method, a list of alternative solutions is obtained:

- a. Provide toilet assistance
- b. Create public toilet

- c. Conducting socialization about the importance of toilet for health
- d. Conducting saving activities together for the construction of toilet

After obtaining some alternative solution, done the solution of solution priority by using MEER method (methodology, effectiveness, efficiency, relevancy) . Here's the alternative solution calculation result:

Tabel 19. Solustion Priority

No	Alternative Solution	SCORE				Total	Rank
		M (Methodology)	E (Effectiveness)	E (Efficiency)	R (Relevancy)		
1.	Provide toilet assistance	2	2	3	3	10	IV
2.	Create public toilet	3	3	2	3	11	III
3.	To socialize the importance of toilet for health	4	4	4	5	17	II
4.	Conducting saving activities together for the construction of toilet	5	5	4	5	19	I

4. Discussion and Conclusion

Based on the results of the calculation of MEER method in table 19 it can be seen that from the alternative solutions that have been presented the first priority solution is obtained through the activities of saving together for the construction of toilet or hereinafter called TAJAMAS. TAJAMAS program aims to realize the behavior of the community to apply the habit of defecation in the toilet so that it can raise the number of ODF (open defecation free) in order to reach the target of Bojonegoro's Government. In particular it aims to raise public awareness to build private toilet and increase the ownership of toilet in Kalongan Village. TAJAMAS began by proposing the concept of savings given to the village apparatus. Once the agreement appears, the program is offered to the citizens. The TAJAMAS program received assistance from the government in the form of one closet. Thus, the burden that must be borne to build a decent toilet is no longer too heavy. The agreement on the TAJAMAS program was endorsed by the MOU between the program implementers (villagers) and the program proponent (researcher).

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The System of Criteria to Assess Sustainable Development of Industrial Parks (IPs) in Viet Nam

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Abstract

On the basis of analyzing the perspective of sustainable development of industrial parks, the author gives two groups of criteria to assess the sustainable development of industrial parks including: assessing the sustainable development of themselves industrial areas and spillover effects of the industrial parks to the development of enterprises, economic sectors and localities where industrial parks have been established.

In addition, the article also analyzes the current status of sustainable development of industrial parks in Vietnam on certain aspects so that suggests some solutions to enhance the sustainable development of Viet Nam's industrial parks in the future.

Keywords: Economic Zones, Industrial Parks, Industrial Zones

1. Introduction

After more than 25 years of constructing and developing industrial parks, Vietnam has established a network of industrial parks across the country. The industrial parks have emerged as a leader in the acquisition of technology transferring, management experience, enhancing competitiveness and promoting the development of supported industries. In addition, industrial zones have made important contributions to the local, regional, and national economic development.

At the end of 9/2016, there were more than 324 industrial parks were established with about 91,800 ha of natural land that is distributed in 60 provinces and cities nationwide, including: 61,700 ha of industrial land can be for rent (accounted for 66.8%). The industrial parks have attracted 7,450 FDI projects with total registered investment capital of more than 147.6 billions dollar, implemented investment capital has achieved 65.8 billions dollar (accounted for 44.6% of registered capital). The industrial parks also have attracted 6,481 domestic investment projects with total registered investment capital of 694.5 trillion dong, total implemented investment capital of 345.8 trillions dong (accounted for 43.7% of the total registered capital) (Thai Son, 2016).

However, the development of Vietnam's industrial parks is not really sustainability, the construction of industrial park's infrastructure has been incomplete and not suitability with the requirements of environmental protection, pollution prevention. Role in promoting technology transfer of industrial parks is weak. Economic linkages and business performance of enterprises in the industry is not high. The ability to creating jobs and attracting workers into the industrial park is still limited. So, building a system of criteria for evaluating the sustainable development of industrial parks is necessary in order to offer solutions to ensure the sustainable development of Vietnam's industrial parks

2. The points of view in sustainable development of Vietnam's industrial parks Vietnam

Sustainable development of industrial parks are beyond three goals of sustainable development: Developing economic effectively; Improving the quality of worker's life; Mining and using rationally natural resources, protecting and improving the quality of the environment inside and outside the industrial parks.

So, when building system of criteria for rating sustainable development in Vietnam's industrial parks has two issues to focus on:

- Firstly, maintaining the sustainability and efficiency in production and business activities of IPs as: the scale and growth rate of output value, total exports, labor productivity, level of technology, average income and the contribution to the state and local budget.

- Secondly, increasing positive spillover effects of the industrial parks to the socio-economic activities. Spillover effects of IPs should ensure that they do not affect the sustainability



development of the industry and local outside territorial boundaries of the industrial parks. This is reflected in the specific criteria:

- + Activities of the industrial parks create a positive shift in the economic structure of industry under trend of industrialization and modernization and export orientation.
- + Operation of the industrial parks has a positive impact in developing economic infrastructure, technical infrastructure and social infrastructure in local having industrial parks.
- + Operation of the industrial parks has a positive impact in improving the material life, the spirit life of the local people through minimizing the negative impact of social issues, creating jobs and improving income for workers.
- + The development of industrial parks needs to ensure limitation of pollution and improvement of ecological environment.

3. System of criteria evaluates sustainable development of industrial parks in Vietnam

To approach the issue of sustainable development in industrial parks, the evaluation system is determined by two groups of criteria: The criteria for evaluating sustainable development of industrial parks and the criteria for evaluating the spillover impact of industrial parks. These criteria can be measured directly by the method of quantitative or qualitative.

3.1. The criteria for evaluating sustainable development in the industrial parks

3.1.1. The geographical location of the industrial parks

The geographical advantages of the industrial park help businesses achieve economic efficiency by location. The favorable conditions of having good technical infrastructure, near by roads, ports, railway stations, airports, and the attractiveness of the input markets as: raw materials, human resources and product markets, ... create an important influence in making decision for investment of businesses.

3.1.2. Quality of industrial park's plan

Quality of industrial park's plan is seen as assurance of the sustainable development of industrial parks. It has to rational, comprehensive, science. The industrial park's plan has to define clearly what industry should be attracted investment and how to construct functional areas, technical infrastructure, electricity, water, communication, telecommunication services, ... to achieve the economic goals, protect and improve the environment.

3.1.3. Land area and Industrial parks occupancy rate

This criterion is considered basing on the planning objectives and operation conditions of industrial parks. Usage of industrial park's land is measured by the percentage of industrial park's land area for businesses hiring compared to the total area of the industrial park.

3.1.4. The total registered investment capital, implemented investment capital

- Total registered investment capital.
- Percentage of implemented investment capital compared with the registered investment capital of FDI in industrial parks.
- Percentage of implemented investment capital compared with the registered investment capital of domestic enterprises in industrial parks.
- The average investment capital of a project.
- The average investment capital per hectare of land.

3.1.5. Performance of the businesses in the industrial parks

The specific indicators to measure the results and performance of businesses in the industrial parks are:

- Total revenue
- Total value added
- The rate of value added to total revenue
- Exports
- The average income per one unit of labor and per ha.

3.1.6. The level of technology and technology applications of enterprises in the industrial parks

- The technological level of FDI enterprises, domestic enterprises in industrial parks.
- The technological level of the industry, the industry group that FDI enterprises engaged in industrial parks (backward, medium, advanced).
- Skills and capabilities of using technology enterprises in industrial parks.
- Capacity of managing and administrating, organizing technological activities.
- Origin of the technology (year and country).
- The size and expense ratio for research and development (R & D) in revenue by sector of FDI enterprises, domestic enterprises.

3.1.7. The scope and scale of activities, level of specialization and economic integration

This reflects economies of scope or specialization and efficiency through economies of scale in the operation of the industrial parks.

- Total revenue and revenue of some major industrial goods in the industrial park.
- The rate of turnover of the industry is mainly concerned items in total revenue chemistry of IPs.

3.1.8. Ability to meet the needs of investors

This criterion reflects the attractiveness of the local industry for investors and is expressed by the specific criteria:

- The degree of assurance of engineering infrastructure system and services to meet the operational requirements of businesses in the industrial park.

3.2. The criteria evaluate spillover effects of industrial parks

3.2.1. The impact of economic spillover

Firstly, It impacts on economic growth, the shift of sectoral and local economic structure in the direction of industrialization and modernization and contributes to the local budget.

- Per capita income is calculated for the total region or locality, compared with the national average.

- Shifting economic structure in locals that having industrial parks such as: Proportion of turnover, Value added, production capital of each economic sector or field.

- Contribution to local budgets: scale and proportion of revenue from local industrial parks; quantity and quality of technical infrastructures of local where have industrial parks.

Secondly, it impacts on improving competitiveness of Vietnam's enterprises

The presence of FDI enterprises is a factor to promote competition. It could force domestic firms to exit the market or to restructure to adapt to the new competitive environment. If local businesses that take advantage of economic linkages with FDI in the exchange of intermediate goods and other factors, the domestic enterprise is entirely capable of reaching out to foreign markets.

Thirdly, this affects the development of Vietnam's supported industries

- The increase in output
- The increase in employment of domestic enterprises that associated with FDI enterprises
- The degree of dispersion of knowledge and skills between FDI and domestic enterprises.

3.2.2. The impact of technological spillover

- The level of technological innovation of domestic enterprises in industrial zones
- The level of technological innovation of the industry and the manufacturing industry group
- Ability to acquire and apply the technological secret
- Executive management capability, organization of technological activities
- Percentage of revenue from R & D activities in the total revenue of the industrial park's enterprises
- Growth in annual revenue from R & D activities

3.2.3. The impacts of social spillover

That reflects the social impacts of the industrial park focused on indicators of creating jobs for local workers:

- Use of local labor: scale and proportion of local workers compares to total workers in industrial parks.
- Effect of industrial parks to restructuring local labor.
- Implementing rules in using national and international employers.
- The development of human capital (qualifications, professional competence, professional skills, behavior, ability to cooperate and work in teams...).

3.2.4. Spillover effects in terms of environmental protection

- The degree of rational exploitation and resource savings.
- The level of solving pollution in industrial park (such as: waste treatment systems), special on industrial parks near residential areas.
- Application of clean technologies
- Having environment reports of the business in the industrial park.

4. Sustainable development of industrial parks in Vietnam

4.1. The construction of industrial park's infrastructure

By the end of 9/2016, Viet Nam has attracted investors to develop infrastructure for 324 industrial zones. Of which: FDI enterprises invested in 45 industrial parks, domestic enterprises invested 227 industrial parks and Industrial park infrastructure development companies invested 52 industrial parks.

The total registered investment capital for infrastructure of 324 industrial parks is equivalent 12.1 billion USD. In which investment capital of FDI enterprises is \$ 3.48 billion (accounting for 28.7%) and investment capital of domestic enterprises is 173.4 trillions dong (accounting for 71.3%). (Table 1).

Table 1: *Industrial Park's Infrastructure investment (9/2016)*

The Region	Domestic Investors (billions dong)		Foreign Investors (millions USD)	
	Registration	Implementation	Registration	Implementation
Northern mountainous and midland	10,921	3,772	101	23
Red river Delta	39,105	16,701	1,262	614
Central Coast	16,875	4,157	420	28
Central Highland	1,509	611	-	-
South East	57,810	31,700	1,494	915
Mekong Delta	47,131	16,730	205	78
Total	173,351	73,671	3,482	1,658

Source: Review Report (2016), Economic Zones Management Department

4.2. Production Investment

Industrial parks have attracted 7,450 FDI projects in which registered investment capital equaled 147.6 billions USD, implemented investment capital was 65.8 billions USD (equaled to 44.6% of registered capital). Industrial parks have also attracted 6,381 domestic projects in which registered investment capital equaled 694.5 trillions dong, implemented investment capital was 347 trillions dong (equaled to 49.9% of registered capital). They have created jobs for more than 2.81 millions direct labor (Table 2).

Table 2: *Status of attracting investment and labor in Industrial Parks (9/2016)*

The Region	Domestic Investors (billions dong)			Foreign Investors (millions USD)			Labor (1,000 person)
	Projects	Registration	Implementation	Projects	Registration	Implementation	
Northern mountainous and midland	345	58,712	26,659	228	12,081	3,103	93.84
Red river Delta	1,362	164,590	134,495	1,890	40,339	21,062	754
Central Coast	1,209	87,160	37,458	278	7,911	2,005	205.8
Central Highland	191	13,278	5,213	34	298	95	9.36
South East	2,143	269,542	104,465	4,470	80,886	34,825	1,455
Mekong Delta	1,131	101,218	38,710	550	6,085	4,710	292
Total	6,381	694,500	347,000	7,450	147,600	65,800	2,810

Source: Review Report (2016), Economic Zones Management Department

By the end of 9/2016, of 324 Industrial Parks were established with 220 active Industrial Parks and 104 Industrial Parks compensation, site clearance and infrastructure construction. 220 industrial parks are operating with occupancy rates of nearly 73% (Duc Trung, 2016).

Every year, foreign direct investment capital flows into IPs, EPZs accounted for 40-45% of total registered foreign direct investment that increased in the country. In the industry, the IPs, EPZs attracted about 80% of total foreign direct investment in the country's industry.

The Industrial parks are seem as an effective tool to attract investment, especially FDI projects, contributing to the goal of restructuring the economy towards industrialization. Many investment projects of large scale, advanced technology, modern such as Samsung, Nokia, Canon, Panasonic, Intel ... have invested in industrial zones, contributing to formation of a number of supported industries in the field of electronics and telecommunications.

4.3. Construction of central wastewater treatment systems in the industrial park

By the end of 9/2016, of the 324 Industrial Parks established has 187 industrial parks with central wastewater treatment system that were complete and in operation, accounting for nearly 57.7% of total industrial parks have been established and 85% of the total number of active IPs. The number of active industrial parks having central wastewater treatment system has increased significantly (4.2 times more than in 2006 and 1.8 times in 2010) (Duc Trung, 2016)

However, implementation of environmental protection in the industrial park has a number of limitations, mainly due to:

- + The laws system for environmental protection is been overlapped and inconsistent.
- + The implementation of regulations on protecting environment, water resources in the industry park are not strictly.
- + Collaboration in managing and protecting environment in the industrial zones are not tight and clear; Inspections still rely heavily on the report content, not totally realistic.
- + Funds for investing and constructing waste water treatment system focuses in the local of poor economic - social conditions is limited, It does not meet the actual needs.



4.4. Contributions of industrial parks to economic development

Contributions of industrial parks to country's economic development have indicated in the following points:

- The first, the proportion of industrial output value of enterprises in the industrial park compared to total value of industrial production of the country has increased continuously from around 14% in 2000 to 28% in 2005, 32% in 2010 and 39 % in 2013.

- The second, the proportion of enterprise's export in the industrial parks compared to total export turnover of the country has increased significantly from 15% in 2000 to around 20% in 2005, 25% in 2010 and 54% in 2016.

- The third, the industrial park's enterprises have initially positive contribution to the state budget. The period of 2001-2005, the industrial park's enterprises have contributed about \$ 2 billions. In the period of 2006-2010, they have contributed 5.9 \$ billions and in the period of 2011-2016, they have contributed 7.2 \$ billions.

- The fourth, in 2016 if the average 1 ha of industrial land that can be rented has created industrial output value of USD 3.8 million / ha, the export value of USD 2.12 million / ha, and contributed to the state budget is about 1.5 billion VND / ha. Average 1 ha of industrial land has created job for 86 direct labors.

Thus, comparison of investment criteria, value of production, exports and job creation on 1 ha of land in industrial zones with 1 ha of agricultural land, it can be seen clearly and effectively outstanding contribution of industrial parks.

The fifth, the development of industrial parks has impact positively on the development of the material regions, promoting forms of industrial services, enhancing the value of agricultural commodities, improving the general efficiency of the manufacturing sector.

5. The main solutions to enhance the sustainable development of industrial parks in Vietnam

The solutions for the sustainable development of Vietnam IPs are proposed based on the criteria system for evaluating sustainable development of industrial parks and analysis on the status of development of industrial parks in Vietnam during the overtime. Includes:

The first, improving the quality of planning industrial parks.

- Planning of industrial parks must be consistent with the planning of local, regional and national socio-economic development. Planning is under the direction of expanding the field of investment, establishing close relationships between sector planning, local planning and regional planning. Planning of Industrial parks should focus on the plan for arranging the industry, the major product groups that match the characteristics of residential, resources (land, capital, labor) and requirements for environmental protection. Industrial parks should be arranged centrally. It should be restricted in constructing scattered industrial parks and mixing with residential zones.

- Researching and applying the model of industrial clusters in industrial network layout in order to optimize infrastructure systems and networks of providing input services, distributing products.

- Completing the industrial park's organizational model: moving from multi-field industrial parks towards the industrial zones of production, processing and service that are concentration, highly specialized, closely linked in the value chain of each industry.

- Implementing the restructure within the industrial zones towards the development of clean technologies. It should be moved from industrial parks of producing products with using labors and natural resources into capital-intensive industrial zones and industrial parks using high technology; moving from industrial park of production to industrial park combined with producing and researching high-tech applications.

- Making opened economic links: internal links in the industrial parks, the links between the industrial parks in the same area, the links between the industrial park's enterprise with businesses outside the industrial park.

The second, the industrial parks should be classified according to use purpose, natural characteristics, socio-economic characteristics. Size of the industrial zones should be determined reasonable as a basis for adjusting planning of industrial parks in the country

- Improving the occupancy rate at the industrial parks.

The third, it is necessary to establish uniform elements of economic and social and environmental infrastructure.

- Promoting the development of industrial park's infrastructure. This can stimulate the local economic development, shorten the development gap between rural and urban. Along with the development of industrial zones, the technical condition of infrastructure in the region will be significantly improved.

- There should be policies to encourage enterprises of all economic sectors to invest in building industrial park's infrastructure to attract investment of industrial enterprises, facilitate business expansion to increase production capacity and competitiveness, and create conditions for solving pollution problems, protecting urban environment.

- Speeding construction, improving the efficiency of using the budget to support the development of industrial park's infrastructure projects in the local that has economic, social difficulties.

- The process of building the infrastructure in and outside the industrial zones must meet the requirements of environmental protection, ensures transferability between regions and orients for development planning of new residential areas, satellite towns, and forms supported



industries, services and social infrastructure system that serving for life of workers and residents in areas such as housing, schools, hospitals, resorts location ...

The fourth, improving the capacity to absorb technology of Vietnam's enterprises.

- Promoting the transfer and integration of technology through FDI and through exchange, hiring experts to create and exploit effective transfer channels. The research should lead to exploitation and localization technology.

- Guiding to the application of modern and advanced technology.

- Promoting the positive impacts of FDI enterprises and industrial zones in terms of technological innovation, self Vietnam enterprises should be built an "absorption capacity" strong enough. This capability can now focus on the development of human resources; and capacity for managing technology of the business.

The fifth, policies of pollution prevention and environmental protection in the industrial parks should be completed

- Self-control capacity should be built.

- Businesses need to protect the environment through technological innovation towards achieving both environmental benefits and business efficiency

- Controlling environment in the enterprise: through from input, source of supply, production processes and outputs.

- Strengthening community participation in the monitoring of industrial activities, the decision-making process related to polluting projects.

- Encouraging corporates to commitment to the community, enhancing contact and communication with the community about its manufacturing operations.

- Encouraging the development of clean production technology; reduction of costs thereby reducing waste.

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Public debt management in Vietnam: Limitations and orientations for resolution

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Abstract

In 2009, the National Assembly issued the Law on Public Debt Management, which is an extremely legal basis for frameworks of public debt management that had not been available before in Vietnam. However, after 8 years of implementation, regulations on functions and duties of relevant levels and authorities in public debt management were no longer appropriate in the context where the 2013 Constitution and certain Laws, especially those directly related to public debt management issued by the National Assembly and still remaining effective, for example, the Law on Public Investment 2014 and the Law on State Budget 2015.

Keywords: State Budget, Public Debt, Public Debt Management



1. Introduction:

According to WB and IMF (2014a), public debt management is the process of establishing and executing a strategy for managing the government's debt in order to raise the required amount of funding at the lowest possible cost over the medium to long run, consistent with a prudent degree of risk. Therefore, public debt management is understood as a process from establishing frameworks and procedures for public debt management to implementing those procedures, including a mechanism for collaboration and practice in order to operate the entire debt management system towards established objectives, with a medium to long-term vision based on prudence with risks and costs of debt.

This definition shows that, regardless of how the public debt management system is organized and operated, the final requirement is to meet any objective of public debt management established by the government. Therefore, it is essential to design an appropriate public debt management model and procedure.

According to IMF (2014a), the main objective of public debt management is to ensure that the government's financing needs and its payment obligations are met at the lowest possible cost over the medium to long run, consistent with a prudent degree of risk. Despite the same objective, different countries can in fact have different ways of organizing public debt management models. (Table 1: Organizational model of public debt management agencies).

For the purpose of studying the current status of Vietnamese public debt in order to identify shortcomings and limitations as a basis for resolutions to ensuring a secure level of Vietnamese public debt, this article focuses on identifying limitations of Vietnamese public debt and recommends basic orientations for resolution.

Table 1: Organizational model of public debt agencies

Type of model	Characteristics
Model within the Ministry of Finance	Debt management functions are performed by an agency managed by the Ministry of Finance
	Debt management objectives are indicated and realized in line with budgetary policy goals
	Possible objectives conflict
Model within the Central Bank	The debt management agency is managed by the central bank
	Public debt management (objectives, strategies, operations) can override monetary policy objectives
	Possible objectives conflict
Independent model	Debt management functions are performed by an independent agency
	High level of operational transparency and broad information policy
	Operational objectives and debt management strategy are worked out and realized within the agency under ministerial approval
	Possible principal - agency conflict

Source: Bartkowiak (2008)



2. Methodology:

To conduct the research, I have applied the following methodology:

- First, I conduct literature review based on authors who have conducted research on public debt management before. Then, I refer to public debt management in legal documents and international experience.

- I develop research orientations and collect secondary data through reports of State agencies on the situation of Vietnamese public debt and related journals.

- I collect primary data through in-depth interview of a number of experts in the same research area as well as focus group discussions, and brainstorm in order to identify limitations and recommend methods of managing Vietnamese public debt.

3. Results:

In Vietnam, according to the Law on Public Debt Management 2009, the National Assembly is the highest authority in public debt management, having the duties of deciding the public debt security targets in five-year socio-economic development plans; deciding objectives and orientations for mobilizing and using loans and managing public debt for every five-year period in order to ensure debt security targets; deciding the total amount of debt, borrowing and repayment structure for the Government in association with the State budget estimation; deciding investment policies for important national projects and works using the Government's loans; monitoring mobilization, allocation and use of loans, repayment and management of public debt.

Taking the role of overall management, the Government has the duty and authority to unify public debt management; deciding specific policies and solutions for implementation of public debt security targets adopted by the National Assembly; approving the Government's scheme on international bond issuance; conducting inspection and examination of loan mobilization, allocation and use, and public debt repayment and management. The Prime Minister has the duty and authority to approve detailed plans on borrowing and repayment on an annual basis; approve medium-term debt management programs for periods of three successive years; approve schemes on debt settlement, restructuring of debts and debt lists; deciding granting of government guarantee and other authorities.

Also according to the Law on Public Debt Management, the Ministry of Finance is the authority that assists the Government in unifying State management in public debt. It is the liaison authority that develops targets, orients mobilization and use of loans and managing public debt for every five-year period; medium-term debt management programs; target systems for monitoring government debt, public debt and national external debt and the Government's borrowing and repayment plans in detail. The Ministry of Finance is also directly responsible for managing the

Government's loans such as developing and issuing financial management mechanisms for loans; allocating funding from the Government's loans to investment programs and projects and other targets approved by competent authorities; guiding and organizing relending of the Government's foreign loans. The Ministry of Finance is also responsible for fulfilling the Government's repayment obligations and guarantor's obligations to government guarantees; managing lists of public debts, organizing analysis of sustainable debt and risk management; managing the cumulative sinking fund, etc.

Related authorities such as the Ministry of Planning and Investment and the State Bank are responsible for collaborating with the Ministry of Finance in certain matters related to public debt management within the scopes of their State management functions according to their authority.

Notably, apart from the function of collaboration according to their management authority, both the Ministry of Planning and Investment and the State Bank are assigned the duty of joining the Ministry of Finance in developing targets, orienting mobilization and use of loans and managing public debt for every five-year period; medium-term debt management programs and the Government's borrowing and repayment plans in detail; participating in the development of target systems for monitoring government debt, public debt and national external debt, etc.

Such general regulations will make it difficult to motivate related authorities in actively joining and collaborating with the Ministry of Finance as well as to clearly separate collaborating responsibility from the final responsibility in public debt management. Apart from that, some other regulations are still not clear enough in division of authority and functions. For example, while the Ministry of Planning and Investment is assigned responsibility to join the Ministry of Finance in developing a scheme on issuing bonds for central Government's projects and a scheme on mobilizing and planning the use of external commercial loans, the State Bank is also assigned responsibility to collaborate with the Ministry of Finance in developing the Government's plans for mobilizing local and foreign capital in association with management of monetary – credit policies.

For ministries and ministry-level authorities, the Law on Public Debt Management also grants them rights to approve schemes on lending and issuance of Government – guaranteed bonds and schemes on relending of Government's loans within their authority. This actually grants more extensive rights to ministries in proactively developing and implementing borrowing schemes. Even though the Law requests these schemes be submitted to the Ministry of Finance for appraisal, it does not provide for any economic criteria as a basis for the Ministry of Finance to give their opinions. It needs to be noted regarding debt management of ministries that these authorities do not have decentralized revenues as localities but only receive funding from the central budget. Consequently, management of ministries' borrowing plans and decisions on borrowing and



repaying debt has to be strictly controlled and ministries' autonomy has to be strengthened but in association with a mechanism that binds "solid" responsibility and accountability in full.

The Law on Public Debt Management also grants duties and rights to local authorities for more autonomy in establishing and approving borrowing and repayment plans of local authorities. Especially, the Law has clearly separated the approving authority of the Provincial People's Council from the planning authority of the Provincial People's Committee. Specifically, the Law stipulates that local authorities are allowed to develop (Provincial People's Committee) and approve (Provincial People's Council) annual borrowing and repayment plans; develop (Provincial People's Committee) and approve (Provincial People's Council) the list of provincial projects with investment capital from borrowing the Government's external debt and domestic debt. In addition, local authorities are granted autonomy in developing borrowing plans for investing in and developing schemes on borrowing, issuance of bonds and repayment of debt (Provincial People's Committee) and self-deciding to borrow for investment through schemes on borrowing, issuance of bonds and repayment of debt (Provincial People's Council). In these cases, the roles of the Ministry of Finance and Ministry of Planning and Investment are to follow up and consolidate information instead of monitoring as presented in Figure 1: Organization of public debt management in Vietnam.

The picture of Vietnamese public debt shows many dark areas that need to be handled in a timely manner. The auditing results recently released by the State Audit show many problems in Vietnamese public debt management as follows:

First, rapidly increasing public debt (due to budget deficit that leads to larger loans). Since 2001, there has been a tendency for public debt to increase rapidly: public debt accounted for 36,5% of GDP in 2001, 40,8% of GDP in 2005, 50% of GDP in 2010 and 62,2% of GDP in 2015. In terms of scale, outstanding public debt by 2015 had been 2,3 times as much as that in 2010, 7,6 times as much as that in 2005 and 14,8 times as much as that in 2001; public debt increased by 18,4% on average over 2011-2015.

Second, in terms of loan management and allocation, so far, most priority has been given to public investment programs and projects (approximately 44% of the total investment capital for the whole society's development over 2011-2015); however, the ICOR of the public sector, despite decreasing to 8,94 (being 9,2 over 2006-2010), has still been completely high in comparison with the ICOR of the economy (5,52 and 6,26 respectively for both periods), which shows low efficiency in the use of this source of capital.

Fourth, some projects incurred risks, making the Government repay debt for them, mostly in such areas as cement, traffic, shipbuilding, hydropower, paper, agro-forestry-fisheries, manufacturing, steel, chemicals, etc. including some large projects of Shipbuilding Industry Corporation and Vietnam Paper Corporation.

Fifth, statistics in public debt reports have not been really accurate:

According to the Government's Report No. 464/BC-CP dated 19/10/2016 on the objectives of mobilizing and using loans and managing public debt over 2016-2020, the public debt by 31/12/2015 had totaled 2.608.421 billion dong (Government debt 2.108.349 billion dong, equivalent to 50,3% of GDP; Government – guaranteed debt 463.755 billion dong, equivalent to 11% of GDP and local authorities' debt 36.317 billion dong, equivalent to 0,9% of GDP), equivalent to 62,2% of GDP, and the actual GDP in 2015 was 4.192.862 billion dong.

However, the State Audit identified the public debt by 31/12/2015 according to the Law on Public Debt Management to reach 2.556.039 billion dong including Government debt of 2.064.632 billion dong, equivalent to 49,2% of GDP, accounting for 80,8% of public debt; Government – guaranteed debt 455.122 billion dong, accounting for 17,8% of public debt; local authorities' debt 36.285 billion dong, accounting for 1,42% of public debt, equivalent to 61% of GDP. Therefore, in comparison with the Government's report, there was a decrease of 52.382 billion dong in the public debt. Including:

(i) *Government's domestic debt: lacking 477 billion dong* (foreign currency bonds in the country 432 billion dong; Government bonds 45 billion dong). It was due to consolidation that there was an ineligible amount of 4.177 billion dong of Government's debt in the report (the advance from the Sinking Fund for VEC to pay for due bonds guaranteed by the Government was 2.477 billion dong; the value of VEC bonds guaranteed by the Government was 1.700 billion dong); and there was overlapping consolidation of the loan of 830 billion dong from the budget for enterprise reforms, originating from foreign loans, which was counted as the Government's external debt.

(ii) *Government's external debt: reported excess of 39.641 billion dong:* comparisons between 19 samples of projects/foreign loans for the outstanding debt of 43.976 billion dong (accounting for 5% of outstanding debt) and consolidated data collated by the Department of Debt Management and External Finance and creditors show that the Ministry of Finance has not updated data on capital withdrawal in the previous years in a timely manner and not adjusted data after collating with creditors, which leads to a lack of 453 billion dong.



(iii) *Government – guaranteed debt: reported excess of 10.333 billion dong:* the amount of 1.700 billion dong as the guarantee for issuance of VEC bonds was reported as Government's debt; (iv) *Local authorities' debt: reported excess of 32 billion dong.*

If all loans granted in 2016 were fully counted to compensate for deficits of 2014 and 2015 of 25.219 billion dong (24.900 billion dong's worth of bonds issued in 2016 to compensate for the deficit of 2015; 319 billion dong's worth of debt from the State Treasury to compensate for the deficit of 2014) and 8.171 billion dong to compensate for the deficit of 2015 until the auditing time, the public debt would reach 2.589.429 billion dong, equivalent to 61,8% of GDP, Government debt 2.098.022 billion dong, equivalent to 50% of GDP. Taking the case of 05 expressway projects of Vietnam Expressway Corporation (VEC) in which there was a shift of their financial mechanism into the Government's direct investment capital according to Decision No. 2072/QD-TTg of the Government dated 08/11/2013, the Government debt would reach 2.105.149 billion dong, equivalent to 50,2% of GDP.

Fifth, the Ministry of Finance's public debt management still has a number of shortcomings, specifically:

(1) *The Ministry of Finance has not prepared Debt Monitoring Reports in a timely manner* (On 20/3/2017, the Ministry of Finance submitted Report No. 308a/BC-BTC on debt monitoring targets of 2015 to the Prime Minister; however, according to Article 25, Decree No. 79/2010/ND-CP, "The Ministry of Finance is responsible for reporting to the Government for submission to the National Assembly and National Assembly's agencies, etc. before 31/3 of the following year." It did not prepare the Public Debt Newsletter for 2015 according to the Law on Public Debt Management regarding reporting and disclosure of information on public debt; managing public debt in a fragmented way without collation; not monitoring, collecting, consolidating and reporting public debt data in a timely, sufficient, and accurate manner according to regulations. Therefore, the Ministry of Health might not have sufficiently consolidated Government debt and local authorities' debt. Furthermore, although State enterprises' debt without Government's guarantee is not public debt, it is potentially risky, thus effecting the economy and the Government's reputation when State enterprises incur losses and find it impossible to repay the debt.

(2) *In terms of managing lists of debts:*

- The situation in which debt from the State Treasury is incurred without being accompanied by repayment deadline or the repayment duration is extended multiple times despite the advance duration of only 12 months is handled slowly, causing potential liquidation risks for the State Treasury (by 31/12/2015, the total outstanding debt as advance from the State Treasury had been 157.162 billion dong; out of which the advanced capital for more than 03 years' duration was 60.816 billion dong and that for more than 01 years was 61.045 billion dong; loans incurred before

2014 and due to extension in 2017 had reached 120.725 billion dong in 2015). Apart from that, the Ministry of Finance applied the fees for advancing from the State Treasury (0,15%/month) to loans from the State Treasury for compensation for deficits of the State Budget due to wrong applicable entities according to Article 2, Circular No. 162/2012/TT-BTC.

- Loans from funds outside the State Budget are not entered into accounts in detail by entities. The Government's external debt is monitored by the Department of Debt Management and State Treasury but not in a relevant way in terms of criteria and data.

- By 31/12/2015, the Ministry of Finance had transferred 4.438 billion dong to VEC to pay for due Government – guaranteed bonds but that have not been acknowledged as debt by VEC, out of which 2.477 billion dong was recorded by the Ministry of Finance as Government debt; recording allocated capital borrowed from foreign loans as revenues – expenditures for 05 VEC's expressway projects (the total amount of 18.123 billion dong recorded as revenues – expenditures was not settled with the State Budget, including 10.783 billion dong in 2014 and 7.340 billion dong in 2015) when their investment capital was not been converted into allocated capital and capital plans not supplemented; not signed a relending contract for the loan restructured from 01 billion USD's worth of international bonds according to Decision No. 1227/QD-TTg of the Prime Minister dated 31/7/2015 on restructuring of relent loans of Shipbuilding Industry Corporation from international bonds in 2005 and 2010.

- A number of programs and projects were exempted by the Government from mortgage of properties according to Clause 1, Article 13, Decree No. 15/2011/ND-CP. Specifically, the lease and purchase of 04 Boeing B787-9 planes and 02 A321 planes by Vietnam Airlines JSC. was exempted from mortgage of properties according to Resolution No. 62/NQ-CP dated 07/9/2015 at the Government's regular meeting in August 2015, Resolution No. 83/NQ-CP dated 08/07/2013 at the Government's regular meeting in June 2013; management of collaterals for Government – guaranteed loans according to Clause 4, Article 13, Decree No. 15/2011/ND-CP was taking place slowly; many Government – guaranteed projects funded by re-loans and loans did not use capital effectively, encountered difficulty in repayment, had production and trading stopped and were restructured, leading to increasing obligations of the Sinking Fund and the Government's direct debt obligations for the following years. By 31/12/2015, there were the following cases:: (i) The overdue outstanding debt of relending projects was equivalent to 28.034 billion dong (55 projects for 5.641 billion dong and Vinashin 22.393 billion dong), accounting for 9,1% of the total outstanding debt, including the overdue debt of 9.730 billion dong (Vinashin 6.562,8 billion dong; 08 shipbuilding projects of Shipbuilding Industry Corporation 1.402 billion dong; Ha Long Cement Project 268 billion dong; Works construction equipment project – Traffic Works Construction Corporation 6 185 billion dong; Nam Chien Hydropower Project 129,5 billion dong...); 05



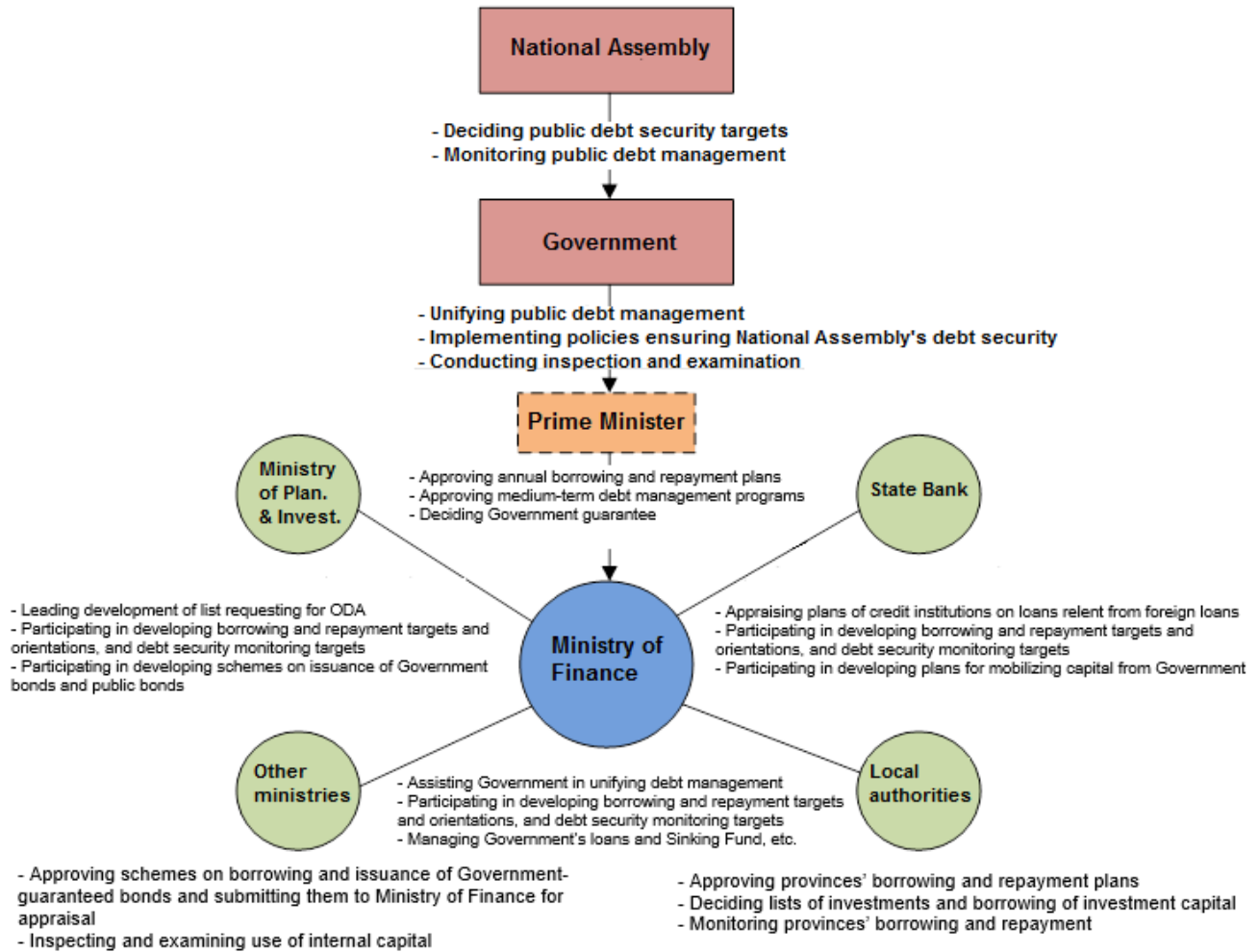
relending projects having debt as capital advance from the Sinking Fund totaling 1.217,8 billion dong (Hai Phong Cement: 39,6 billion dong; Thai Nguyen Cement: 575,2 billion dong (overdue 411 billion dong); DakMi Hydropower: 13,3 billion dong; Lao Government: 68,9 billion dong; Vinashin: 520,5 billion dong (debt charged off from 2015); (ii) 10 Government – guaranteed projects having capital advanced from the Sinking Fund for repayment having the outstanding debt of 199,02 million USD (07 projects with overdue debt and having charged – off debt of 105,95 million USD, accounting for 53,2% of the total outstanding debt as capital advance from the Sinking Fund), including Phuong Nam Paper Pulp Manufacturing Factory Project 60,42 million EUR (overdue 41,9 million EUR, debt charged off from 2014); Ha Long Cement Project 52,21 million EUR (overdue 23,51 million EUR); Thai Nguyen Cement Project 30,79 million EUR (overdue 14,27 million EUR).

- Insufficient and untimely repayment of relent loans to the State Budget: (i) Payment for interest from international bonds 2014 (relent to SBIC) amounting to 24 million USD, equivalent to 515 billion dong; (ii) Payment for interest in 2015 by North – South Expressway Project amounting to 35 billion dong (VEC's relending project).

(3) In terms of local authorities' debt

Some provinces still have not established their lending limits (Hai Phong, Can Tho, Nam Dinh, Ha Tinh, Nghe An, Thanh Hoa, Binh Phuoc, Bac Lieu, Kien Giang, Ninh Binh, Quang Binh, Quang Tri, Binh Dinh, Bac Ninh and Ca Mau); not prepared lending and repayment plans (Hai Phong, Dong Nai, Tra Vinh, Nam Dinh, Bac Lieu and Binh Dinh); allocated funds to projects for irrelevant purposes and without compliance with the registered lists (Tuyen Quang (06 projects with the total capital allocated of 60 billion dong); Ca Mau (disbursement for projects funded by loans not complying with the lists approved by competent authorities); not made and submitted reports on local authorities' debt according to regulations (Dong Nai, Kien Giang and Ninh Binh); 14/46 audited localities having outstanding debt by 31/12/2015 exceed 30% of the construction investment capital in the provincial budget according to the Law on State Budget; some provinces having loans incurred within the year but not disbursed completely by the end of 2015; in particular, Quang Ninh issued bonds but did not allocate and use them in a timely manner, thus reducing the effectiveness of loan use.

Figure 1: Organization of public debt management in Vietnam



Source: Do Thien Anh Tuan, 2014



4. Discussion and conclusion

Solutions to improving effectiveness of public debt management

First, considering the establishment of the Public Debt Monitoring and Control Committee under the National Assembly that performs the following functions: (i) Monitoring issues related to public debt and the State Budget; (ii) Monitoring and directing activities and collaboration among units related to the above mentioned issues; (iii) Licensing and monitoring activities of highly professional authorities allowed to provide consultancy and tender services to projects funded by public debt; (iv) Advising the National Assembly on issuance of laws, including regulations on incentives/ sanctions to individuals involved in public debt management, use and monitoring; (v) Approving and monitoring decisions on the State Budget, loans and relending from public debt based on a pre-defined minimum value.

Second, issuing the Law on amendments of the Law on Public Debt Management 2009. So far, the implementation of the former has shown a number of shortcomings, especially in public debt management. Specifically, there has not been clear separation and strict collaboration among public debt management, budget management and public investment management; it is essential to separate regulations on the Government's loan management by sources of capital mobilized for stricter and more effective management in the context where Vietnam will gradually have limited access to ODA. Some regulations on separation of functions and duties of involved levels and authorities in public debt management have not been relevant in the context where the 2013 Constitution and a number of laws, especially those directly related to public debt management, were issued by the National Assembly and have recently become effective, for example, the Law on Public Investment 2014 and the Law on State Budget 2015.

In fact, even though laws have in a way separated authorities of making and approving borrowing and repayment plans between the People's Committee and the People's Council, their roles and authorities have not always been clearly separated. In this case, the separation between the preparing authority and approving authority is only notional, especially for loans relented from Government's loans. Consequently, the roles of monitoring and inspection of the Government and the Ministry of Finance as unified public debt management authorities need to be promoted.

This is actually being applied to the case of borrowing through issuance of bonds when the scheme on issuance of bonds has to be approved in writing before implementation. However, it is important to avoid the asking-approving mechanism, and there need to be criteria on local authorities' borrowing through bonds based on which the Ministry of Finance produces inspection reports and provides recommendations instead of acceptance. Moreover, while unbonded borrowing plans do not need to be approved by the Ministry of Finance, the fact that issuance of local bonds has to be approved by the Ministry of Finance can motivate provinces to strengthen

borrowing instead of securitizing those debts through local bonds. However, along with expansion of budget decentralization, especially in authorities of approving borrowing plans, borrowing and repaying debts to local authorities, the Government should also strengthen its monitoring function to ensure public debt remains within the allowed limit and in a sustainable manner.

Currently, the Government has submitted the draft of the amended Law on Public Debt Management. Regarding the complicated status of public debt, the National Assembly should consider and pass this Law promptly.

Third, completing management tools: Complying with credit principles, only borrowing for effective projects with clear sources of repayment, taking into consideration possible risk scenarios to ensure the Government's repayment ability. Gradually applying the principle of "whoever benefits repays the debt" to strengthen responsibility for using and protecting revenues from owners of projects spending public debt.

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Labour and Employment for the Elderly in Vietnam

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Abstract

The report analyses the reality of the elderly people and their employments in Vietnam. The results suggest that there is substantial margins of elderly people wish to work or continue working. The report also proposes some solutions to utilise the role of the elderly in labour, helping the economy to adapt with the aging population and allows them to continue producing property, making ends meet and contribute to the overall growth of the nation. That's the foundation for Vietnam to enter aging population period safely and proactively.

Keywords: Employment for the Elderly, Labour for the Elderly, Aging population and solution, solutions for elderly people economy



1. Introduction

Vietnam is benefiting while being in the first decade of its “golden population” period, which started around 2010 and is predicted to last for 30 years. However, the Vietnamese population is also rapidly aging in this period. The total number of elderly people, including those that 60 years of age and above, rose from 4.6 million in 1989 to nearly 9.5 million in 2014. A past population forecast estimated that Vietnam would enter its “aging period” in 2017 or in other words the elderly people margin would account for 10% of the total population and would enter the “aged population” in 2032. This heavily affects our economy as a massive number of the labour force will be reduced and more people will become dependent. It is important that we have policies to maximise the role, experience and health of the elderly. Since there are prejudices that they need to rest, the right for the elders to work is taken away.

2. Research Method

The study used data collected from the General Statistic Office Vietnam, Information from newspaper employments advertisements, reports from the Institute of Labour Science and Social Affairs from 2012, 2014, authors’ observation of the elderly’s activities, demands, cultures, levels of educations and from which, analysis, quantitative and qualitative comparisons are made, generalizing common characteristics of Vietnamese’ elderly. This is very useful in helping the government, managers and employers coming up with solutions to not only take advantage of the knowledge, experience of the elderly but also to take care and protect them in the development of eco-social in general and business in particular.

3. Results

3.1 Legal basis of the older labour force

Conditions of using the older labour force

Term 1 and term 3 Article 167 2012 Labour Code regulated: In the case of demand, employers can negotiate with the older, healthy employees to prolong or renew labour contract according to Chapter 3 of the Code:

- There is an agreement between the two, signed to be a labour contract.
- The employee must be healthy enough (To be understood as health certificate approved by authorised health institution must be provided once a year).

- Older workers can reduce their working hours or allow to work non-full-time.
- Due to their health concerned and having to provide yearly health certificate, even when there is no clear regulation, business should only agree to employ them under “Fixed time contract” (12-month period) since this is the most appropriate.
- At the end of the contract, if both sides are still in demand and health is ensured, contract can be prolonged on yearly basis.
- The 2012 Labour Code does not state how many times the contract with the older worker can be made but only set out health condition so it can be understood as the contract can be renewed many times.

About the actual employment

Term 3 Article 167 regulated: The older workers are not allowed to do heavy lifting, hazardous, harmful to their health with the exceptions of government regulations.

Benefits

Term 2 and term 4 Article 167 Labour Code regulated: Once retired, if under new labour contract, older workers can benefit from both pension regime and what have been agreed in the labour contract. Employers are obliged to look after the health of older workers in the workplace.

3.2 The characteristics of the elderly in Vietnam

The total number and proportion of elderly in Vietnam

By the UN definition, in 2012, Vietnamese population has begun aging with 10.2% of the population is the elderly, about 9 million people in total. The pace at which the elderly grow is much faster than the pace at which the population grow. During 1989-1999 period, the population growth rate is 19.8% while the aged population growth rate is 25%, while in 2009 in compared with 1999 is 12.4% and 24.7% respectively.

Structure by age of the elderly

Data from the Population and housing censuses showed that the ratio of people of the smallest age (60-69 years old) increase slowly, while the same ratio for the middle group (70-79) and the highest group (80+) tend to grow quicker. In 1979, people who are 80 years and above accounted for 0.54% of the total population but rose to 0.7% in 1989, 0.93% in 1999, and 1.47% in 2009 and is predicted to reach 4.16% in 2049. In Vietnam, not only does the population aging but the elderly themselves seem to become even older, the ratio of people over 80% tends to increase dramatically.

Structure by gender of the elderly

Generally, the older they grow the more female elderly to male. From 80 years and above, the ratio is varied around 50 which mean that there are 50 male elderly every 100 female, or in other words, there are 2 female elderly every 1 male. We can clearly see that the aging population is mainly aging female elderly and according to the Eastern culture, women in general when they grow old they will have to face more challenges than their male counterpart as they will live in loneliness and have to take care of their yet to be mature kids.

Number of elderly live in household

According to 2010 Survey on household living standard, 26% household has elderly people 60 years old and above, with 28% in the city area and 26% in the country area, in which the number of household having 1 to 2 elderly account for 17.7% of the total number. This number for the city is higher than the countryside (18.5% and 17.4% respectively).

Table 1: Proportion of household by number of elderly

Unit: %

Area	1 person	2 people	3 people	4 people	Total
Urban	18,5	9,5	0,1	0,05	28,1
Rural	17,4	8,2	0,2	0,00	25,5
Total	17,7	8,6	0,1	0,05	26,4

Source: Living standard survey, 2010

The main elderly's income source

According to the 2016 result of Nation-wide survey on the family in Vietnam, there are 30% of the elderly work to make a living, 35.2% of which are in the country and 17.5% of which are in the city. The number of elderly living on pension and subsidizes in the city is 1.5 times higher than in the country (35.6% and 21.9% respectively). On contrary, elderly working in the country double the same number in the city (35.2% and 17.5% respectively). However, financial support by children remains important regardless of the area, country or city (40.1% in the city and 38.9% in the country). At the time of the survey, most of the elderly are born and grew up in the time of war; therefore they don't have the opportunity to save for their retirement. That is why when the economy was changed to market mechanism, they find troubles adapting with changes that they have never seen before.

Table 2: The main elderly's income source by urban and rural, 2006

Unit: %

Source	Total	Urban	Rural
Working	30	17,5	35,2
Pension/Subsidize	25,9	35,6	21,9
Supported by children	39,3	40,1	38,9
Saving from the earlier	1,6	2,3	1,3
Other	3,2	4,5	2,7
Total	100	100	100

Source: Results of Nation-wide survey on the family in Vietnam 2006,

3.3 Employment of elderly in Vietnam

3.3.1 The proportion of elderly's labour force

The alderfly's economical activities are affected by many factors, but the 2 most typical factors are history and economic growth rate. The Vietnamese fought 2 wars in the past and a major number of the elderly have contributed to the victory and when peace is made they are patronized by the government. There are 40% of the elderly living on social welfare such as subsidize pension, incapacitation allowance, martyr family policies, homeless loners and so on. These people participate less in social economic activities because they have to care less about it income and everyday life. With a low economy growth rate and poor living standard, the elderly, although have past their working age, very much in desire to continue taking part in different economic activities to improve their and their family's living.

Table 3: Proportion of alderfly's labour force from 2011 to 2014

Unit: %

Age	2011	2012	2013	2014
60-64	3.3	3.6	4.0	4.2
65 +	3.5	3.7	3.9	4.0
Total	6.8	7.3	7.9	8.2

Source: 2014 Report and labour force survey, GSO



The figure in table 3 tell us that the percentage of elderly workforce increase steadily throughout the years from 6.8% in 2011 to 8.2% in 2014, this trend occurs with both age group 60-64 and 65 years and above so there is no reason to stop this, along with prolonging working time, this would put a solution to the aging population issue.

3.3.2. The education level of elderly

Labour with higher education level will be offered higher salary, more employment opportunity, require less physical stamina and bring about higher places in society in comparison with those of the lower education level. This is an incentive to encourage the elderly to stay in the work force.

Table 4: The alderfly's and 20-59 age group education level

Unit: %

	From 20 to 59 years of age	From 60 and above	Total
Graduated high school and above	21.6	16.8	21.6
Urban	37.4	33.1	36.3
Rural	15.6	15.6	15.6

Source: 2010 Vietnam household living standards survey

The elders' education level is lower than the youngsters (16.8% to 21.6% respectively) and the country area is lower than the city in both age groups. This makes them less competitive in finding suitable employments for themselves in the labour market.

3.3.3. The unemployment of elderly in Vietnam

The definition of unemployment used in this survey is defined as people from 15 years and above who is not currently working but have started looking for and ready to work in a projected time. With this definition, there are 1003, 5 thousand unemployed people in which 6.2 thousand are 60 years and above (0.6% total). The number of unemployed elderly in the country is 3.5 times this number in the city. This shows us that even though in the country where the elderly can do farming, increase production, there is still a large margin still jobless, hoping to get an employment.

There is a huge demand of the elderly that they can continue to work and contribute to their family, society with suitable health and condition. To work, to contribute is to create joy in life. It also improves mental and physical health. This is also a right that a lot of countries have shown interest on. Past investigations pointed out that 70% of people from 60 to 69 years of age still have to work to make a living and 38% of which is the main income of the household. They have to take care of their and their children's life. During this time when labour force is redundant and economic

activities of every fields are setting higher profession standard, it is very difficult to find a suitable employment for the elderly regardless of the area.

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Table 5: Number and structure of unemployed of elderly (60+) in 2014

Unit: Thousand people

Age group	Number of unemployed people	Proportion (%)	Proportion of male (%)	Proportion of female (%)	Proportion of female in old age (%)
Total	6.2	0.6	0.6	0.6	45.6
Urban	1.3	0.3	0.2	0.4	61.7
Rural	4.9	1	1.2	0.8	41.2

Source: 2014 report on the labour force survey, GSO

The unemployment ratio for female is 45.6%. This shows us that even though the elderly sometimes self-employed or do family business, there is a massive number of elderly hoping to be employed, and the ratio of female account for half despite usually being at home and do housework. It is worth noticing that the unemployment rate in the city is much higher than in the countryside (61.7% to 41.2% respectively). This could be explained as retired female workers in the city were once officers and employees and they still expect to continue to work. There is a big difference in unemployment ratio by gender in the city and in the country as well. For instance, the ratio of unemployed country male is 6 times this number in the city (1.2% to 0.2% respectively), while this number for female is only 2 times in the country compared with in the city (0.8% and 0.4% respectively).



3.3.4. The employment of elderly in Vietnam

Analysis on the reality of elder workers shows us that the elderly is proving their role in production and contributing significantly to the economy. Though in comparison to the working age, the number is smaller but the difference is not so big. The table illustrated clearly that older people tend to change from being in paid jobs to self-employed.

Table 6: The proportion of profession of elderly based on position 2015

Unit: %

	Male	Female	Urban	Rural
Wage	13.7	6.3	19.1	7.6
Unpaid family workers	9.8	24	13.9	17.7
Self-employed	73.5	68	60.5	73.5
owners	3	1.7	6.5	1.2

Source: 2015 result of labour force survey, GSO

The elderly work mainly in the private, household sector, those who work in the public-sector account for a smaller margin and the participation of female is substantially lower than of male. According to the table, in 2015, female elderly only participated in 0.8% of the economy, while their male counterpart accounted for 5%. The retirement age of female is 55 and male is 60 can be a crucial explanation for the giant gap between the two genders in the public sector. Another reason is the ability to renew contracts of some specific male group in the sector.

Figures suggested that during 2009 – 2014, structure of work sectors by the elderly in both the city and country is maintained stable.

**Table 7: The proportion of employment for the elderly by rural and urban and by sectors
2009 - 2014**

Unit: %

		2009	2010	2011	2012	2013	2014
Rural	Service	11	11	11	12	13	12
	Industry and construction	6	6	5	6	6	6
	Agriculture and Forestry	83	83	84	82	81	82
Urban	Service	56	54	53	54	54	56
	Industry and construction	9	10	10	10	10	9
	Agriculture and Forestry	35	36	37	36	36	35

Source: 2015 Result of labour force survey, GSO

In the countryside, there are 82% of the elderly working agriculture and forestry sector in 2014 and a little proportion working in the service and industry sector. In the city, due to the shortage of agricultural soil, more than half of them (56% in 2014) work in the industry and service sector instead. However, 35% still work in agriculture sector, which is not too small of a portion, while the disparity of industry and construction sector in both the city and the country is not massive.

Nearly 63.8% of the elderly in the country does simple employments while 65.8% of them in the city do low or mid-level employees profession and artisans. Only a little number of them is in management or expert positions, with 1.1% in the country and 7.3% in the city.

Table 8: Proportion occupational of tenderly in 2015

Unit: %

	Male	Female	Urban	Rural
Simple employments	51.6	60.5	26.9	63.8
Employees and artisans	44.6	38.5	65.8	35.1
Management and expert positions	3.8	1.1	7.3	1.1

Source: 2015 Results of labour force survey, GSO

Structure wise, we can see the movement to simpler employments, those that do not require much expertise. It is worth noticing that female does more simple employments than male by a margin. Older male does more expert and management positions than their female counterpart (3.8% to 1.1% respectively). This can be explained that because after retirement, female spend more time doing housework, taking care of their children and family or it can be related to the fact that retirement age of male is 5 years older than female.

According to a statistic on elderly's working hour in 2015, unlike our prediction that the elderly will most likely do less work, having more flexible time in order to ensure health condition, most of them still work full-time. On average, they work 7 hours a day, 5 days a week. Although this is less than 8-hours of work regulation and the average of 8.8 hours a day for the working group, the difference is not so high.

Table 9: Average income per month of elderly workers in 2015

Unit: Thousand Dong

Age	Male	Female	Urban	Rural
15-59	4687	3128	5380	3250
60+	3189	1660	3768	2056

Source: Result of labour force survey 2015, GSO

Studies have shown that at the age ò 60, people are physically and mentally 20% less effective than those who are 20-40 years old. At the same time, the elderly does not work dramatically less than the working age and the average monthly income by their employments are much less than the average monthly income by the employments done by people in the working age, by 32% for male, 46.9% for female, 30% in the city and 36.9% in the countryside. This is a considerable amount and there should be policies to effectively change this. There is a giant gap between the averages in come by female in and out of working age. Female out of working age earn nearly 46.9% less than they who are in working age (1660 thousand Dong/month in comparison with 3128 thousand Dong/month).

To generalise all the statistic, the Vietnamese elderly work in some of the sector with a few following characteristics: (1) The majority of the working elderly are working in private or household economic activities; (2) Most of them are working in the agriculture and forestry sector in the country and service sector in the city; (3) They do simple employments, work as a low or mid-level employees or artisans; (4) Their average income is much lower than the income of the working age.

4. Discussion and conclusion

According to conclusions from analysis above, the elderly, generally speaking, hope to continue to work and once they do they do not work any less than their colleagues in the working age. Vietnam is among the countries in the area and over the world that facing the same challenge: changing from unofficial family support to official governmental support. However, this is a major challenge because the contribution of the people in the working age in the pension fund and the social insurance fund is low as their salary and average income is low. In addition, the margin of working people enjoy pension scheme is not high. Therefore, with the low contribution to the pension fund, the social insurance fund, the margin of working people enjoying pension is low, tight governmental budget, official governmental support would not be enough to cover the life of the elderly, especially those that without pension, the homeless. These problems mean that Vietnam would have to face consequences from aging population and these consequences would be even more serious compared with first world countries.

Recommendations

Putting an end to the elderly's employment problem requires the assistance of government's policies, strong actions from all levels: government's policy, business' policy and the elderly themselves.

Government policy

The government should pass policies that help the elderly to continue their work in the same workplace and avoid waging disadvantage. For example, the government can increase their business support and provide consultancy on reconstructing human resource management, waging policy (on work and effectiveness basis) for the elderly or the government can create a new working plan for the elderly with flexible hours for them to continue their employment. In addition, training for the ones in disadvantage in life should also be provided (using big enterprise's training institution, schools and other private institutions). Along with that, to help the elderly with expertise looking for an employment, employment centre should care more about the working elderly, categorising them by expertise, health condition and work expectation. For instance: In the Singapore, taxi drivers can be up to 70 to 75 years of age, therefore, they will feel happier, more useful and increase productivity after retirement.



Nowadays, most people go into retirement without proper preparation, lifetime profession plan, skill trainings or service to change occupation. This is essential for not only because of the preparation for the life later but also because this directly related to the rise of current life expectancy. Specialized institutions should make free orientation programmes for the elderly and make it suitable for the usage of the elderly, their experience and expertise. Occupation changing system should be established along with special training programmes to enhance work capability. Financial aid, job training and opportunity programmes for the ones in disadvantage (elderly with low income) should be developed so that not only their employability but also their salary and working hours will be improved.

The government should make a budget to encourage business modify their facility and infrastructures, making it more friendly, suitable, less dangerous and maintain productivity for the elderly. These activities should be considered to ensure the health and work environment for the elderly.

Due to majority of the elderly working in service and agriculture sector, another budget should be considered to support enterprise businesses, household business and production, helping the elderly getting access to the latest technology, enhances productivity. Taking care of the products' outcome and helping household with their business, helping them with getting access to the distributing and consuming channels.

Changing social's perception on older workers, changes in demographic such as solutions to aging population, economical activities are very important. For example: we can clearly see that in the Singapore, people of 65 or 75 years of age still work as taxi drivers or cleaners. They work voluntarily to contribute to society. These jobs although seem tough for and hard works but it creates joy for them as it helps them earn respects from others.

Business' policy

Making sure the elderly's working hour is flexible, expand and commit to create new opportunity for them. Re-design and continuously modify working tools for the elderly to utilise their life long expertise and experience.

Business should make efforts to improve their financial support and ensure that the older workers' health condition is secured. The balance between work and family should be taken care of so that the employment burden is lessen and still attracts older workers. Employers should think about ensuring health condition and even personal problems for these specific workers as well.

The elderly themselves

Workers need to negotiate with employers about terms on personal health issues and benefits. The elderly workers themselves should understand and consider the role of flexible employments, especially part-time employments as they tend to make them stall retirement.

Individuals should also prepare mentality and suitable knowledge to prepare for employment opportunities that is timely flexible and not similar to their traditional field. Each of the workers should be aware while they are still young that work hard produce more property, saving for the older age. Reduce smoking, drinking, having health checked more regularly, continuously learn and update knowledge, skills to be well-prepared for later in life.

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