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Challenges, Opportunities and Prospects of Swine Industry in Vietnam

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Abstract.

In the gross output of agriculture sector, livestock contributes about 19% and is important income for farmers, especially small-farmers in Vietnam. Small-scale farms accounted for 85% in livestock scale of Vietnam. The swine sector is the most important livestock sector in Vietnam because of its contribution to the people's nutritional requirements annually, about 70-76% of total meat production. This paper reviews the Vietnamese swine trading sector. Starting with an overview of Vietnam's natural conditions of swine industry, including a description of prevalent swine production systems, the value chain of swine trading, the paper then takes a systematic view of opportunities, challenges and prospects of swine product marketing. Besides, the government implemented strategies for strengthening swine industry, keeping pork price stable and balancing swine herd. The opportunities offered by swine farming to improve livelihoods, enhance their standard living and alleviate poverty. However, swine producers mostly face with the challenges of knowledge gap in best practice in husbandry and management of farms as businesses. Other challenges are low quality-high cost feeds, inability to service quantity and quality demands of the market. Among the emerging problems are majority of swine farmers are limited in market power, and in 2019, African Swine Fever (ASF) emerged in Vietnam and rapidly spread to whole country which led to the decrease of swine herd. This paper also assessed likely changes in the next 5 years based on past trends and future scenarios, and evaluated growth potential, viability, and the sustainability of smallholder swine systems in Vietnam.

Keywords: value chain, swine industry, Vietnam.

1. Introduction

The swine industry in Vietnam, which has continued to expand from 2010 to 2019, has played a major role in Vietnam's economy. The industry brings more income for the Vietnamese people, creates new jobs and new products for the market, and meets the demands of Vietnamese people in industrialization period. Pork makes up a high ratio in the total meat production in Vietnam, and is the most widely eaten animal food source, about 24.7 kg/capita/year (Nga et al., 2015). Because of swine price crisis in 2016, the swine ratio had a steady decrease, about 78% (GSO, 2016). The declining price of swine puts smallholder farmers into difficult situations, the state of low price had lasted which led to the decrease and change in the herd in many small-farmers. In 2017, the whole Vietnam had 29 million live swine with more than 2.1 million tones of pork, according to the General Statistics Office (2016). On February 19th, 2019, Vietnam confirmed its first ASF outbreak with the announcement of detections in Thai Binh and Hung Yen provinces, which are located southeast of the capital Hanoi, approximately 160 km away from the Chinese border. Since the Ministry of Agriculture and Rural Development (MARD) confirmed the first ASF outbreak, a total of 63 provinces/cities reported outbreaks and more than 4,500,000 swine have been culled (FAO, 2019). Normally, most of the farmers sell their swine through middlemen who collect, buy finisher swine from the farm/house holders, sell them in slaughter houses, and then sells them to the market. This is the reason why Vietnam faced a very difficult situation in preventing the spread of ASF.

About 80% of swine raisers are identified as smallholders, and the development of the swine sector in the South and North of Vietnam is very important for improving income and creating livelihood (Lapar, 2014). Pork always accounts for the highest proportion in the consumption structure of Vietnamese people with the proportion of over 70%. The proportion will gradually decrease due to diversifying structure and category of food (predicting 2020: 68- 69%, 2025: 62-63% and from 2030: around 60%). In the future, pork scarcity in Vietnam is urgent problem, not only for Vietnam swine industry, but also for Vietnam's economy. Besides, the price of pork and swine will increase rapidly beyond consumers' affordability, which leads to the challenges of swine production. For this reason, the Vietnamese government now implements some strategies such as importing pork from the other countries in order to balance the price of pork, and also to meet the demand of the customers. Prioritizing the restructuring of the swine industry bases on enterprises to create commodity production, hi-tech investment, chain production, linking production with processing and trade promotion, connecting markets. By doing so, the swine industry can increase its production efficiency, can decrease the price, strengthen its competitiveness, and export to other countries.

2. Methods

The study was an exploratory research, with data based from secondary literature from the reports of the General Statistics Office, the Food and Agricultural organization, International Trade Centre, Food and Agriculture Organization in United Nations and Government policy documents. The second data on swine production for the period 2010 - 2018 is provided in Vietnam. The forecasting for the five coming years was analyzed by the SPSS application.

3. Results and discussion

3.1. Vietnam swine value chain.

3.1.1. Swine production

Swine production is socially and economically indispensable in Vietnam where three-quarters of meat consumed is pork and pork products. In Asian countries, Vietnam ranked second in pork meat produced in 2013 after China - the largest pork producer (Lapar, 2014) and ranked seventh in the world. Swine are typically reared in intensive systems, most of people in Vietnam raise swine in small-scale. Besides that, a large proportion of rural areas in Vietnam keeps and rears swine which derive income for farmers, about 80% (Lapar, 2014). This is a reason why the Ministry of Agriculture and Rural Development (MARD) plans to restructure swine production to solve the current problems in Vietnam like reduced arable land, limited genetic resources, and polluted ecological environment.

Table 1: Vietnam's volume of swine, cow and buffalo production 2010 – 2018 (thousand heads)

Criteria	Volume of swine, cow and buffalo production (thousand heads)								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Swine	27373.3	27056	26494	26264.4	26761.4	27750.7	29075.3	27406.7	28151.9
Cows	5808.3	5436.6	5194.2	5156.7	5234.3	5367.2	5498.6	5654.9	5802.9
Buffalos	2877	2712	2627.8	2559.5	2521.4	2524	2519.4	2491.7	2425.1

Source: Livestock production department, MARD – Vietnam (2018).

This is swine production trend from 2010 to 2018 compared with other livestock species. When we compare swine performance with other livestock such as cows or buffalos about 5808.3 thousand heads and 2877 thousand heads in 2010 respectively, the number of swine is more dominant and larger, reaching a peak in 2016 with 29075.3 thousand heads. Swine price crisis led to decrease swine production and resulted in significant contraction in the swine industry (30% of small farm gone out of business) (Coyne et al., 2019). In early 2018, swine production increased again with 28151.9 thousand heads.

Table 2: Vietnam's swine production by areas 2010 – 2018

Areas	Vietnam's swine production (thousand heads)				
	2010	2015	2016	2017	2018
Red river delta	7301,0	7061,2	7414,4	7085,5	7157,6
Northern midlands and mountain areas	6602,1	6841,5	7175,5	6786,8	7120,2
North Central and Central coastal areas	5552,9	5367,9	5420,6	4978,0	5153,4
Central Highlands	1633,1	1797,4	1903,3	1806,2	1841,6
South East	2485,3	3093,6	3358,5	3245,4	3422,8
Mekong River Delta	3798,9	3589,1	3803,0	3504,9	3456,4

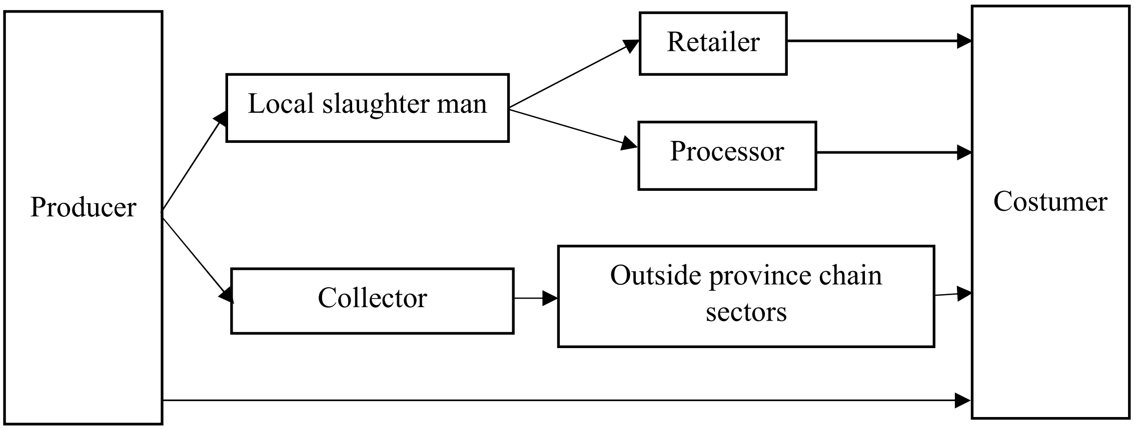
Source: Livestock production department, MARD – Vietnam (2018).

Swine performance is different and depends on the areas. In Vietnam, the structure of swine industry is small and medium commercial production, and swine production focuses mainly on Red river delta, the number of swine in the North is more than other areas in the period of 2010 to 2018, about 7157,6 – 7301,0 thousand heads. However, for farming scale, there is more intensive and larger swine scale production in the South of Vietnam when compared with scale production in the North of Vietnam (Coyne et al., 2019). The figure 2 showed that swine production trend in Vietnam is not stable, especially in 2017, the number of swine decreased in all of areas.

3.1.2. Swine marketing system

Intensive large-scale commercial farms, small-scale commercial farms, and the traditional free-range system is the three swine production systems which have been available in Vietnam and depending on hygiene. Currently, Vietnam has four types of swine production encompassing (1) small-scale with low hygiene; (2) small-scale commercial farms with standard hygiene and combined with VAC (rearing swine combines with growing plant and raising fish); (3) intensive large-scale commercial farms with high level hygiene; and (4) collaboration farm with medium level hygiene.

Figure 1: Mapping of basic local swine value chain of smallholders in Vietnam, 2015



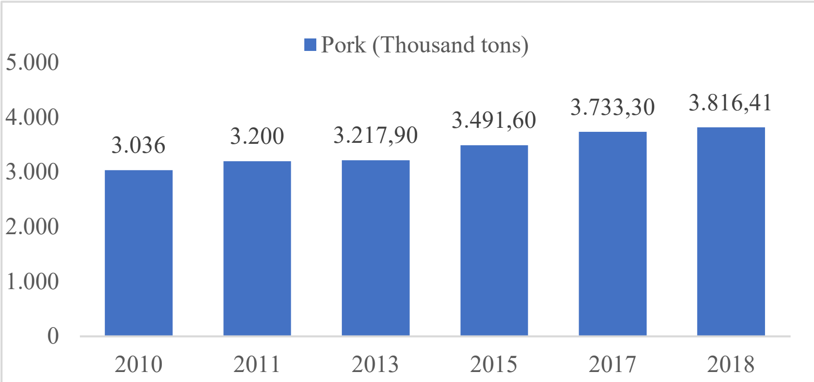
Source: Nga (2015).

Swine products in Vietnam have to pass through many intermediaries prior to reaching the final customer. The swine marketing system in Vietnam have to assemble a large number of swine from farmers with small-scale and poor infrastructure. This is the reason why transaction costs in swine marketing is high. The most common channel in marketing system: sale to assemblers or middleman and sale to slaughterhouses. Middleman usually collects fattened swine from farmers and then they will sell them to bigger middleman or slaughterhouses. Following this channel, slaughterhouses in Vietnam will sell carcass to three categories such as slaughterhouses selling to both wholesale and retail (70%), slaughterhouse exclusively for wholesale (24%), and slaughterhouses only selling to end consumers (6%) (Tung el at., 2005). There is small number of farmers who sells their products to the slaughterhouse or the market without middleman. In addition, the market in Vietnam is mainly traditional markets, also known as wet market or public markets which dominate traditional retailers accounting for 94% of sales in this food retail channel (Vo, 2017). Traditional markets in Vietnam are ideal for purchasing small-quantity food.

3.1.3. Pork consumption

In Vietnam, pork is very important and is the most consumed meat, providing livelihoods and income for more than 4 million small farmers (Nga et al. 2015). Depending on the area, there are many places where people may purchase pork. In the countryside, 93.3% of the people tend to purchase pork in the small market. This problem led to only 13.2% of pork has quality-controlled stamp (Nguyen & Thuy, 2014). In the cities, people pay more attention to higher pork quality. They buy pork in the supermarkets and do not mind to pay for more. There are also people who care about their health and are overly concerned with food safety. They are much more likely to purchase their meat from modern retail outlets rather than traditional wet markets (Tisdell et al., 2010; Stark – Ewing & Saskia, 2018).

Figure 2: Graph of volume of pork in Vietnam during 2010 – 2018



Source: Livestock production department, MARD – Vietnam (2018)

From 2010 to 2018, pork consumption in Vietnam has a steady increase, about 3036 thousand tons in 2010 to 3816,41 thousand tons in 2018. Although affected by swine price crisis in 2017, the number of swine herb in Vietnam decreased, the amount of pork consumption has not changed. However, there is a change in meat consumption ratio in Vietnam, that is the decrease of pork consumption ratio and increase of other kinds of meat ratio such as chicken, beef, buffalo. Particularly, in 2017, the ratio of pork consumption is 71.8%, falling down nearly 4% when compared with ratio of pork consumption in 2010.

3.2. Challenges Facing in Swine Industry

As compared with other countries, farm size in Vietnam is much smaller and more spontaneous, with farms having 1 to 4 swine occupied 71.63 % (GSO, 2011), the majority of swine herd is less than 100 swine while Thailand is less than 500 swine for their small swine farm production (Dang et al., 2013). This problem caused the difficulty in controlling and managing swine herb and also in controlling the price of swine and pork. The supply exceeded the demand and strict policy in exporting of China leading to swine price crisis in 2017. Another challenge in the swine industry in Vietnam is the price of animal feeds. Almost all of the farmers are buying mixed animal feeds from the agents around their house, and there are small number of farmers who are directly buying animal feeds from companies (Nguyen & Thuy, 2014). Besides that, swine industry consumed a lot of industrial feeds per year, around 70% of the total of 14.4 million tons (MARD, 2015) and the price of materials depends on importation, and that led to the change in the price of animal feeds. The price of swine and pork has not increased but the feed and its materials have steadily increased. Since early 2017, Vietnam has experienced falling swine prices, which has resulted in significant contraction in the swine industry (30% of smaller farms have gone out of business) (Coyne et al., 2019).

Because of small and spontaneous scale, the government and government agents faced a difficult situation to control the diseases of swine. Particularly, foot and mouth disease (FMD) struck Vietnam and caused economic losses. Recently, Vietnam was affected by African swine fever disease and this disease spread to whole country after several months. In February 2019, the African swine fever has caused serious damage to the swine herd in Vietnam and more than 4,500,000 swine have been culled (FAO, 2019) and still continue to spread to other areas.

3.3. Opportunities and Prospects in Swine Industry

3.3.1. Opportunities

Vietnam has a mass of opportunities that could help develop the economy, including the swine industry. First, Vietnam is now one of the most dynamic emerging countries in East Asia region and it has transformed from one of the poorest in the world into a lower middle-income country (World Bank, 2019). Besides, population in Vietnam is large, around 93 million, half of which are under 30, which is a key reason behind the strong surge in food and beverage products consumption. Furthermore, an average population in Vietnam is growing of 1% per year which means that every year, new potential consumers and customers nearly 1 million are born, making Vietnam extremely attractive to food retailers (Vo, 2017). Additionally, people show more concern about where their food comes from and how it is processed and the food industry is moving towards the same direction to meet the needs of their newly enlightened consumers (Park et al., 2017).

Nowadays, pork still makes up high proportion of meat consumption in Vietnam. Although this proportion will gradually decrease due to diversification of structure and category of food consumption, gradual shift to consuming fast food and processed foods, Vietnam ranked seventh in the world in terms of pork consumption (after China, Europe, America, Russia, Brazin and Japan) (Lapar, 2014). In addition, the demand for pork is still high in Asian countries, and this is an opportunity for Vietnam to improve swine herd and pork quality to export to Asian countries.

The fact that Vietnamese consumers, like many other cultures, prefer fresh meat is an advantage to internal pork producers. Despite the demand for fresh, local pork, the government has expressed its intention to increase the pork export quantities dramatically. The Vietnamese government also implements some strategies to improve swine industry such as improving quality of swine herd, decreasing the price of pork, attracting investment from large companies to enhance swine industry forward high technologies and closed-chain. In 2018, Vietnam signed in EU Free Trade Agreement (FTA), it is a great opportunity for Vietnam to improve exporting commodities.

3.3.2. Prospects

Livestock is one of the most important and fastest growing sectors in Vietnam's agriculture and economy. In the recent years, the livestock industry in Vietnam has experienced a lot of changes. Especially, livestock population has been growing fast but the number of households raising animals has gone down. Small-scale swine production in Vietnam decreased and disappeared mostly in 2017 because of swine price crisis. However, swine farming has quickly recovered, especially in the last months of 2018 due to an increase of the market prices and the producer's earnings (MARD, 2018). Facing African swine fever in the first months of 2019, Vietnam will again wrestle with pork scarcity in the future. Following information from MARD, August 2019, the total volume of swine in Vietnam has decreased by 18.5% when compared to the total swine population in the same period of 2018. In the coming years, Vietnam may have to import pork from other countries to meet the demand for consumption and make up for the pork (Nga Bui, 2019). By 2025, some industry experts predict that the modern food retail will account for 20 percent of sales in Vietnam (Vo, 2017).

Figure 3: Prediction of swine production in Vietnam in coming years.

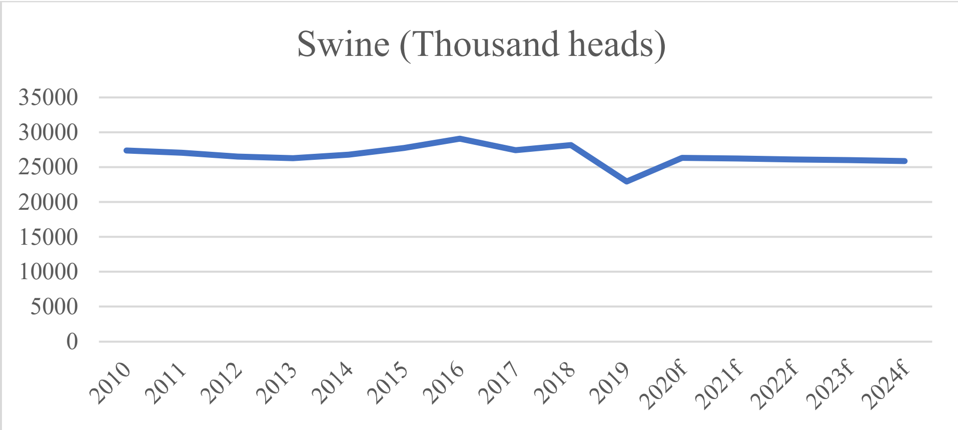


Figure 5 shows that in the next five years, swine production will be stagnant. Not only swine production will be stable in coming years but also the price of pork will be adjusted. Besides that, swine industry in Vietnam will be more systematic than the last ten years with large commercial scale production, good hygiene and more competitiveness in the market. Moreover, Vietnam's government will control the consumption of pork to balance meat consumption and keep the pork consumption around 60%.

4. Conclusions

The swine industry in Vietnam is developing and expanding. The swine production is still on small scale and the price of swine products are not stable. Besides, the farmers are not that receptive in adopting new technologies and knowledge on disease management in Vietnam is still low. Stabilizing the price of swine products, reproducing, improving swine herb, and controlling diseases are currently the urgent problems in Vietnam. Although facing lots of challenges, the swine industry in Vietnam has many growth opportunities in the future. Vietnam is one of the countries in Asia with the fastest economic growth, has a young population, and has an increase in consumption index over the years that will surely help develop the swine industry in the future. The swine production in Vietnam will change from a small-scale to a much modernized and advanced, thereby improving productivity and quality, and thus more ready for export markets.

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