

## PIG PRODUCTION AND MARKETING IN VIETNAM

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### ABSTRACT

*Pigs have been raised traditionally in Vietnam for so long a time and they have become one of the symbols of our culture. Pork occupied the highest proportion of animal meat in the daily meals of the Vietnamese people. Pig production has grown up twice after 10 years from 2001. In the period of 2001-2006, the number of slaughtered pigs and sows increased quickly with the annual rate of 5.9% and 7.7%, respectively, leading to pork production which has been increasing by 10.9% per year. After 2006, production became slower primarily because of continuous disease outbreaks.*

*In 2013, the total number of pigs on recording Vietnam is 26.3 million of which the number of sows is 3.91 million; the estimated pork production is about 3.22 million tons (Livestock Production Department MARD, 2014). Vietnam ranks as the world's 5<sup>th</sup> biggest in terms of the total number of pigs and the 6<sup>th</sup> in terms of live weight of pork production. However, pork products are mainly used for domestic consumption, and its export value is not considered significant.*

*Pig production in Vietnam is mainly comprised of three systems, they are: (i) small-scale householders with low level of hygiene; (ii) small-scale commercial pig producers with minimum hygiene standards; and (iii) large-scale commercial pig producers with high hygienic standards.. At present, about 70% of pig heads and 60% of pork products are produced by the small-scale householders. The large-scale commercial pig producers with high hygienic standards supplied only about 15% of the total pig products in the market.*

*Aside from some exotic pig breeds imported from England, Denmark, Belgium, Canada and US, such as Landrace, Duroc, Yorkshire and Pietrain, and Hampshire etc, Farmers in rural areas normally are raising the local breeds, such as Mong Cai, I, Man, Lung fu, Muong Khuong, Co (Nghe An), Khua, Van Pa, Soc and Moi etc. of which Mong Cai is the best one and normally used as good sows for reproduction. Commercial pigs obtained by crossbreeding of exotic and local breeds have been raised in small-scale commercial pig production in different areas accordingly. Pig's market depends mostly on the middlemen. Supermarket system is limited in the big cities.*

*Disease situation: besides common diseases pigs are prone to foot and mouth and PRRS diseases which occurred recently in Vietnam.*

**Keywords:** Pig Production, Small-scale Pig Producers, Local Pigs, Crossbred Pigs, Middlemen

### INTRODUCTION

Vietnam is a monsoon tropical country located in Southeast Asia. Its total area is 331,114 sq. km., with a population of 90 million; 55 million are farmers (who occupy about 67% of the country's total labor) working in agriculture. The cultivated area is small, about 11 million ha. Vietnam's agriculture is based mainly on rice production of about 37 million tons per year or 77% of the cultivated area. Other crops such as maize, potato,

cassava, groundnut, soybean, sugarcane, fruit trees and other perennial commercial trees as coffee, tea, rubber and coconut, support it. The agricultural output value contributes 25% of the GDP, of which food production is 77% and livestock production is about 32%. The latter deals mainly with pigs, buffaloes, cattles, chicken, ducks and goats etc.

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### The role of pig production in livestock production in Vietnam

Vietnam's agriculture faces many challenges such as: reduced arable land, limited genetic resources and polluted ecological environment while climate change has become more serious influencing directly the development of agriculture. The Ministry of Agriculture and Rural Development (MARD) plans to restructure the agricultural production in a sustainable way. This year, 2014, livestock production increased to higher proportion of 32% and is projected to continue to rise to 35% in 2015, when the new agricultural structure has been adopted.

This is the pig production trend from 2007 to 2011 as compared to other livestock species. The number of pigs increased slowly from 26,560 in 2007 to 27,055 in 2011; cattle and buffalo decreased slowly from 97,21 to 81,48 in 2011; poultry from 226,000 to 322,569 birds; goats and sheeps went down from 17,77 in 2007 to 12,77 in 2011. While there is an increase in the population of pigs and poultry, the rise of the figures appears to be slow. The reason is due to the frequent outbreak of animal diseases. It is however their productivity that continued to increase. Both pig and poultry contribute a lot in the foodstuff supply chain in Vietnam.

Table 1 can show you the production trends of some main livestock species in Viet Nam.

Table 1. Livestock population and production trends of some main species

| Criteria                     | 2007<br>(thousand<br>heads) | 2008<br>(thousand<br>heads) | 2009<br>(thousand<br>heads) | 2010<br>(thousand<br>heads) | 2011<br>(thousand<br>heads) |
|------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Pig                          | 26,560.7                    | 26,701.6                    | 27,627.7                    | 27,373.1                    | 27,055.9                    |
| Cattle and<br>buffaloes      | 97,21.1                     | 92,35.4                     | 89,89.8                     | 88,29.7                     | 81,48.6                     |
| Poultry                      | 226,000.0                   | 248,300.0                   | 280,200.0                   | 300,500.0                   | 322,569.0                   |
| Goat and<br>sheep<br>(Total) | 17,77.7                     | 14,83.4                     | 13,75.1                     | 12,88.7                     | 12,77.3                     |

Source: Livestock Production Department, MARD - Vietnam

Pig production plays an important role in the livestock production as pork production now occupies 75.9% of the total meat production consumed in Vietnam. Manure from pig production serves as good fertilizer source for crop production. The total quantity of livestock meat production increased more than three times from 2001 to 2011. The total amount of livestock meat in 2011 is 4,083 thousand tons, of which pork comprises 3,098 tons (75.9%), much more than poultry and other livestock meat.

Table 2 showed the pork is standing in the first place of foodstuff in Vietnam.

Table 2: Livestock meat production in Vietnam (live weight)

| <b>Products/year</b>          | <b>2001</b> | <b>2005</b> | <b>2011</b> |
|-------------------------------|-------------|-------------|-------------|
| Total production (1000 tones) | 1,988       | 2,822       | 4,083.9     |
| Pork                          | 1,513       | 2,288       | 3,098.8     |
| %                             | 76.1        | 81.1        | 75.9        |
| Poultry                       | 322.6       | 321.9       | 695.7       |
| %                             | 16.2        | 11.4        | 17.0        |
| Beef                          | 149.1       | 202         | 287.2       |
| %                             | 7.5         | 7.2         | 7.0         |
| Goats and sheeps              | 3.7         | 9.6         | 11.2        |
| %                             | 0.2         | 0.3         | 0.3         |

Source: Livestock Production Department, MARD - Vietnam

Vietnam has set up the livestock development strategy for the period up to 2020. Its main objectives are as follows:

- Adopt farm-applied mode in animal production for animal products, by 2020 aimed at safety against epidemic, food safety and environmental protection, meeting major food demand for local consumption and export.
- Raise animal production rate in agriculture by 32% in 2010, 38% in 2015 and 42% in 2020.

Based on the livestock development strategy, the great challenge for millions of Vietnamese farmers is how to maintain their livelihood to sufficient levels given the many natural and man-made problems of agriculture. According to the GDP, livestock production occupies a small portion, but it concerns the lives of about 3/4 of Vietnam's population which is mostly composed of poor people. Problems such as: eradication of animal diseases (A-I, PRRS, FMD and etc.) has now become more serious.

### **Situation of pig production in Vietnam**

#### **Pig population:**

Table 3 shows the Statistical data of pig production in Vietnam. Pig production in Viet Nam increased nearly twice after more than 10 years starting from 2001. From the period of 2001-2006, the number of finishing pigs and sows rapidly increased with the annual average growing rate of 5.9% and 7.7% respectively. Pork production increased with the rate of 10.9% per year. After 2006, pig production had a lower rate because of continued pig disease outbreak. The only pork proportion in the livestock meat slightly decreased because people had more options in the consumption of livestock meat in their daily meals, especially those coming from beef and poultry.

According to the statistical data in 2011, the total number of pigs was about 27.1 million of which 4.04 million are sows (accounting for 14.9%). Pig production percentage distribution by ecological areas: The Red River Delta is approximately 27%; Northern Midland and Mountainous areas: 24%; North Central and Central Coastal areas: 20%; Central High Land: 6%; South East area: 9% and Mekong River Delta: 14%. (Please refer to the map). Pork production by the main ecological areas are as follows: The Red River Delta is approximately 33%; Northern Midland and Mountainous areas: 13%; North Central and Central Coastal areas: 19%; Central High Land: 5%; South East area: 12% and Mekong River Delta: 18%, (see Table 4). Table 4 shows the pig production in Red River Delta, Mekong River Delta had higher yield, because pig breeds reared tended to have higher proportion of exotic breeds and farming system is more integrated and advanced. Pig production in Northern Midland and other mountainous areas comprised of more native and mini pig breeds where experts say many precious native and mini pig breeds should be conserved.

Table 3. Statistic data of pig production in Vietnam

| Criteria                       | Unit     | 2001       | 2005       | 2006       | 2011       | 2012       | 2013       | Av Gro rate (%) |
|--------------------------------|----------|------------|------------|------------|------------|------------|------------|-----------------|
| Total pig                      | Head     | 21.765.949 | 27.434.895 | 26.855.330 | 27.055.984 | 26.493.922 | 26.261.408 | 1.58            |
| Sow                            | Head     | 2.947.008  | 3.882.328  | 4.337.977  | 4.043.365  | 4.025.551  | 3.916.035  | 2.4             |
| Fattening pig                  | Head     | 18.679.404 | 23.421.871 | 22.433.315 | 22.911.251 | 22.739.122 | 22.269.240 | 1.48            |
| Finishing pig                  | Head     | 22.722.429 | 36.254.131 | 39.304.850 | 45.765.317 | 48.147.734 | 48.045.417 | 6.44            |
| Pork proportion                | %        | 76.3       | 81.4       | 81.5       | 74.3       | 74.0       | 74.2       | -0.23           |
| Sow/total herd                 | %        | 13.54      | 14.15      | 16.15      | 16.28      | 15.19      | 14.91      | 0.81            |
| Finisher /sow/year             | Pig/ Sow | 8          | 9          | 9          | 10         | 12         | 12.3       | 3.6             |
| Average finishing weight/ year | Kg/ Head | 66.6       | 63.1       | 63.7       | 67.7       | 65.6       | 67.0       | 0.05            |

Source: Restructure of livestock production for the sustainable trend (MARD)

Table 4: Pig production in Vietnam's ecological regions

| Ecological areas                        | Percentage of pig head (%) | Pork production portion (%) |
|---|----------------------------|-----------------------------|
| The Red River Delta                     | 25                         | 33                          |
| Northern Midland and mountainous areas  | 24                         | 13                          |
| North Central and Central Coastal areas | 20                         | 19                          |
| Central High Land                       | 6                          | 5                           |
| South East area                         | 9                          | 12                          |
| Mekong River Delta                      | 14                         | 18                          |

Source: Statistical Year Book of Vietnam in 2010

By the end of 2013, there are 26.3 million pigs recorded in the whole country, of which 3.91 million are sows. Pork production is estimated at 3.22 million tons (live weight) (livestock Production Department-MARD). Viet Nam ranks as the 5<sup>th</sup> of the world's total number of pigs and the 6<sup>th</sup> of the world's the pig production according to the live weight. However, Pig production in Viet Nam is mainly served for domestic consumption and exports is not considered significant.

The productivity of sows rearing in Viet Nam is much lower than it is in the world. The average number of finishing pigs is 12.3 heads/ sow/year in 2013. But it is higher rate at 20.5 heads/ sow/ year in the industrial farm (CP Pig Company data).

The above mentioned data showed that pig production in Viet Nam ranks number one in terms of value and proportion in the current livestock sector. However, as compared to other countries in the region and in the world, the current productivity and quality of genetics are still very low. From the 4 million sows, only 27-28 million slaughtered pigs can be produced annually.

#### **Pig farming system:**

Fattening pig production in Vietnam comprised of mainly three systems. These are: (i) small - scale householders with low level of hygiene; (ii) small - scale commercial pig producers with minimum hygiene

standards; and (iii) large commercial scale producers with high hygienic standards. At present, 70% of pig heads and 60% of pork production are produced by the small-scale farm householders. The large-scale commercial producers with high hygienic standards supplied only about 17% of the total pig products in the market. The hygiene and food safety management is still a problem in Vietnam's pig production.

According to the data recorded in the 2011 census, the farm size for pig production and its percentage can be ranked at 5 levels as follows:

- Farms having 1 to 4 pigs occupied 71.63 %
- Farms having 5 to 19 pigs occupied 23.36 %
- Farms having 20 to 49 pigs occupied 3.6 %
- Farms having 50 to 99 pigs occupied 0.85%

(Source: Agrocensus 2011 of General Statistic Department-VN)

It appeared that the small-scale pig farms still occupied the larger component. Poor farmers in the countryside and mountainous areas don't have money to invest for larger scale pig production. They mostly make use of the available feed resources around their houses and the available labor resource in their families. Some of them engage in contract growing of pigs and sign up with larger companies who supply them with pig breeds, feeds and collect the finisher pigs. In many remote mountainous areas in the North West, North East and Central high, land the farmers still keep the native mini pig breeds, they and have very low productivity. But the meat quality of their products is very good and tasty. Pigs in these areas are now preferred by many people.

Table 5. Pork production by farm size in Vietnam

| Farm year | size/ 1-4 pigs (%) | 5-19 pigs (%) | 20-49 pigs (%) | 50-99 (%) | pig 100 and over (%) |
|-----------|--------------------|---------------|----------------|-----------|----------------------|
| 2000      | 65.0               | 28.0          | 4.0            | 1.0       | 2.0                  |
| 2005      | 37.5               | 37.0          | 13.0           | 4.5       | 8.0                  |
| 2010      | 25.0               | 35.0          | 17.0           | 6.0       | 17.0                 |

Source: Agrocensus 2011 of General Statistic Department-VN

Farm size in Vietnam is much smaller as compared to other countries. In 2010 and even 2011, 83.0% of total pig heads are reared by the farm size under 100 pigs. The large – scale farms occupied only 0.85% but supply 17% of the total pork production. The data also showed that small-scale farms with only 4 pigs or less decreased quickly while the number of medium and large-scale farms increased.

Pig production in Vietnam is mainly of the small- scale type. Infrastructure investment in farm pig production farm is limited; the proportion of big and integrated farms with automatic feeding system, drinkers and cooling system is very low.

There are some Foreign Pig Companies which have modern integrated farms. Normally these farms dealing with breeding of GGP and GP farms also carry out the contract-growing scheme with farmers for pig fattening.

#### **Pig Breeding:**

There are some exotic pig breeds imported from England, Denmark, Belgium, Canada and US such as Landrace, Duroc, Yorkshire and Pietrain, Hampshire etc. These exotic breeds are reared in the big integrated farms. The local pig breeds are Mong Cai, I, Man, Lung fu, Muong Khuong, Co (Nghe An), Khua, Van Pa, Soc and Moi etc. of which Mong Cai is considered the best one and is normally used as sows for reproduction. Vietnam also has some crossed pig breeds, such as: Ba Xuyen, Thuoc Nhieu etc

Today, the most popular pig breeds are crossbred pig between Local Mong Cai pig breed with exotic pig breeds (74.0%) (Livestock Production Department – LPD – MARD). The good points of these crossbred pigs are their being well-adapted with local condition and good adaptability even in terms of coping with diseases. The exotic breeds, on the other hand, are reared in the big and industrial farms owing to the outstanding characters of high productivity and quick growing rate. The portion of exotic pig breeds is 19% of the total; and the local pig breeds is 7%.

## Country Report

In 2011, there were about 195 GGP and GP breeding farms in Vietnam with total sow population of 73, 500, of which 10 pig breeding farms are under the management of the Ministry of Agriculture and Rural Development (MARD) comprising of 4.4 thousand GGP and GP sows. The biggest breeding pig population belongs to Viet Nam CP Company with about 25.6 thousand GGP and GP sows; Darby Company has 5.0 thousand GP sows, some other companies like San Miguel, JAPFA having about 1.0-2.0 thousand GP sows. GGP and GP breeding sows are mainly exotic breeds.

The application of artificial insemination rate (A.I) in Vietnam now is only 35.1% while it is 60% in US and 69% in European countries. The quality of sows in Viet Nam is lower than those in other parts of the world. At average the number of piglet/ sow/ year in 2013 was 12.3 piglets/ sow/ year. But it is rather high in intensive pig farms (20.5 piglets/ sow/ year) (CP company data)

### **Pig feeding:**

Pig feeding in Vietnam depends on the pig farming system of the householder. The small farms normally rear local pig breeds using feeds made on their own and make use of available feeds around their houses, such as the agricultural by products (22.5%). This may take more labor cost for feed preparation. These are mostly farmers who use a combination of between Industrial ready mixed feeds and their own homemade feeds (70.7%). There are 6.8% of farmers who use only industrial ready mixed feeds.

The average feed conversion rate in Vietnam is 4.4 kg/ 1 kg weight gained, while it is 2.8 kg/ kg weight gain in the industrial farms and more than 5 kg/ weight gain in the small-scale farms. As far as the feed quantity is concerned, the industrial ready mixed feeds occupied about 45% of the total pig feeds used in livestock production. Almost all of the pig farms in Vietnam are buying mixed feeds through their agents and there are small amount of large-scale farmers who buy pig feeds directly from the animal feed companies. There are also some cooperatives who act an important role in grouping small pig farms to buy animal feeds from feedmills in order to reduce the cost. There are 57.7% householders and 27.5% farm holders who are buy pig feeds in dept, a common trait in buying feeds in Vietnam. This is also one of the reasons why there is an increase in the production cost that further reduces the competitive capacity of Viet Nam's pig production.

### **Pork consumption and marketing:**

Pork consumption per head in Vietnam increased rapidly from 2001 – 2013. In 2013, the average pork consumption per head is 20.1 kg that is double compared to what it was in 2001 (12.84 Kg/head/year). The pork consumers in Viet Nam prefer fresh pork, and don't like the frozen one, that's why they usually buy fresh pork in the small sleeve market. In the countryside, 93.3% of the people buy pork in the small market. This is why only 13.2% of pork has quality controlled stamp (AGROINFO 2012). In the cities, people pay more attention to higher pork quality; they buy pork in the supermarkets and doesn't mind pay more for that.

In general, the supply chain in Viet Nam is mainly based on small-scale pig farming. Normally most of those farmers sell their pigs through middlemen who collect, buy finisher pigs from the farm/ house holders then sell them in slaughter houses. There is small amount of farmers/ householders who sell their pigs directly to slaughterhouse owners in case their farms are close to the slaughter houses. (ACIAR, 2010). Slaughterhouse activities vary according to different regions. In the North of Vietnam, like Hanoi and some neighboring provinces, it is free and participated in regularly by middlemen at every scale including the small - scale middle men of 1-3 pigs/day. These middlemen participate in the whole process -- from collecting to slaughtering pigs and selling them, including whole sale and retailing. While, in the central and Southern regions, most of the middlemen operate on a large - scale mode, they can rent the slaughter houses for processing, and the smaller number of middlemen can slaughter pigs in their own houses. (ACIAR 2010).

The pig slaughter houses in Vietnam belong to three categories: (i) Slaughterhouses selling carcass by wholesale and retailing (70%); (ii) Slaughterhouses exclusively for wholesale (24%); (iii) Slaughterhouses which do retailing directly for consumers (6%). At present, there are many slaughterhouses in the whole country, it is mostly owned by members of the private sector and is manually operated with small-scale capacity, poorly equipped and with low hygienic standards. Imported pork almost did not enter Vietnam before 200. In fact, after 2006, frozen pork was imported from Canada and the US. In 2012, 6.87 million USD were paid for imported pork, it decreased by 53.2% when compared to the figures of 2011. Total value of pork exported in 2012 was 60 million USD (19% increase as compared to 2011), and is mainly shipped to China and Hong Kong.

**Pig disease:**

Pig production activities in Vietnam run at dense level, with most of the pig farms operated by small-scale farmers and control of diseases is facing many difficulties. Most of the pig houses are opened style with low bio-security level. In the countryside, although we have crowded number of Veterinarians in the village level (Para-vet) but whenever diseases outbreak, it is easily transmitted to other places. It is difficult to control the diseases

Beside common animal diseases there are Food and Mouth and PRRS diseases which occurred only recently in Vietnam.

**The orientation and demand for pig production development by the year 2020**

Based on the growth rate of Vietnamese population and the economic development of the country, the World Bank has predicted in the coming years that meat consumption in Vietnam will increase by 7.8% per year. There for the Ministry of Agriculture and Rural Development in Vietnam has set up the goals for pig sector development by 2020 as follows:

- Develop the intensive pig production in large and medium – scale farms along with the application of high technologies towards industrialization and modernization of livestock sector to satisfy the increasing demands for domestic pork market and step-by-step for pork exportation;
- Improve pig production efficiency through increasing productivity, quality and competitiveness of pork products;
- Develop the sustainable systems of pig production in association with the rational exploitation of local advantages in natural, economical and social conditions;

According to the new orientation of restructure of the pig production in Vietnam, the production cycles will be concentrated to three main regionsnamely: i) The Northern and Southern Central Coastal regions, these regions have larger agricultural land area, far from the inhabitants, having favorite condition for disease isolation, and environment treatment, land for cultivating livestock feed is available, good condition for establishing industrial pig farm (Nghe An, Dinh Dinh, Quang Nam, Quang Ngai provinces; ii) The East of Mekong River Delta region: this region is suitable to establish the large-scale pig farm toward the industrial modern integrated system, avoiding the environment pollution. There will be the intensive pig farms in Dinh Duong, Dong Nai, Ba Ria-Vung Tau provinces

The total number of pigs is targeted to increase from 27.1 million in 2011 to 33.1 million in 2015 and 34.7 million in 2020; the exotic sows are projected to increase by 26.8 % in 2015 and 37.1% of the total number of sows in 2020. It means that the proportion of crossed breed and local breeds is still high. Pork could be exported to China and Hong Kong. The indicators and specific targets are showed in table 7.

Table 7: The oriented indicators for pig production development in the period of 2015-2020 in Vietnam

| No. | Items   | 2011 | 2015  | 2020  |
|-----|---|------|-------|-------|
| 1   | Total pig population (million heads)            | 27.1 | 33.1  | 34.7  |
| 2   | Proportion of exotic sows (%)                   | 17.6 | 26.8  | 37.1  |
| 3   | Total sow population (million heads)            | 4.04 | 4.83  | 4.81  |
| 4   | Number of exotic sows (thousand heads)          | 730  | 990   | 1.390 |
| 5   | Number of finishing pigs/sow/year               | 18.5 | 20.0  | 21.0  |
| 6   | Feed conversion ratio (for the intensive farms) | 2.8  | 2.6   | 2.4   |
| 8   | Exported pork production (thousand tons)        | -    | 35-36 | 58-60 |

Source: Data base of Livestock Production Department LPD-MARD

## CONCLUSION

- Production scale is small, and occupied 70% of pig heads and 55-60% of pork production. Infrastructure investment in pig production farm is limited; the proportion of big and integrated farms with automatic feeding system, drinkers and cooling system is very low.
- Pig breeds are mainly from local and crossbred pigs; the exotic breeds comprise about 19%; the pure exotic pig breeds are still dependent on the foreign companies.
- Most of the animal feed materials for feedmills are imported; animal feed price is 8-12% higher than it is in the world.
- The veterinary service and extension activities have not yet met the requirement that lead to lower effective management of pig diseases control.
- In the marketing system, there are many middlemen who continue to increase the transaction fees while issues like pig disease control and food safety abound.
- Outbreak of diseases is continuously happening, (A-I, PRRS, FMD and etc.) and is becoming more serious

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Picture: Map of Ecological regions in Viet Nam

