

DEVELOPMENT OF HOUSEHOLD CHICKEN FARMING IN VIETNAM: A CASE STUDY OF YEN DINH DISTRICT, THANH HOA PROVINCE

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TÓM TẮT:

This study examines the status quo and explores factors affecting the development of household chicken farming in Yen Dinh district, Thanh Hoa province. The study finds out that the farming scale has increased gradually with diversified chicken genotypes. The two most common genotypes are Choi crossbred and Mia. There are three main household chicken farming models including: intensive, semi-intensive and scavenging farming. In which, the most popular farming model is the semi-intensive model thanks to its low production costs and high quality of poultry. There are several factors affecting the chicken farming including: local policies, infrastructure, capital, expertise of farmers, and output price. This study proposes some solutions for sustainable development of chicken farming in Yen Dinh district.

Keywords: contract farming, farming practices, influencing factors, farming model.

1. Introduction

Chicken production has played an important role in Vietnam [7]. Especially, since the outbreak of African Swine Fever in 2019 a large number of farmers have stopped producing pigs and changed to raise chickens [3]. In addition, the demand for chicken meat of the Vietnamese is high and has increased recently [8]. The chicken meat consumption per capita was about 16.5 kg/year in 2016 and expected to increase to 17.22 kg/year in 2022 and 20.3 kg/year in 2029 [2]. This should be an opportunity for the development of chicken production in the country.

Contract farming is widespread throughout the world and many studies have argued that there are benefits for both contract farmers and contractors [6]. Furthermore, contract farming is considered relevant to developing countries and has also been a means of attracting income-generating projects from developed countries [6]. Contract farming has been introduced and developed in Vietnam. Some foreign feed companies such as Japfa Comfeed Vietnam Limited Company (JAPFA LTD) and Charoen Pokphand Group Vietnam (CPV) have contracted with farmers to grow chickens and pigs.

Yen Dinh is a district in the delta and midland

area of Thanh Hoa province. It is about 28 km northwest of Thanh Hoa city. The district is a typical district of Vietnam with potentials and advantages for development of chicken production. In 2020 the district had a total poultry population of about 1.7 million heads, of which the total number of chickens were 1.46 million heads [9]. There were 62 large chicken farms, most of which signed farming contracts with the above enterprises [10]. Therefore, this study aimed to evaluate the status quo and explore factors affecting the development of individual and contract household raising chicken, thereby proposing solutions for development of chicken production in the district in the time to come.

2. Research Methods

2.1. Data collection

Primary data were collected through a survey in 2022 with 40 large producers signing farming contracts with enterprises, and 50 independent farmers at different chicken production scales. Independent households were selected randomly in 3 developed chicken raising communes, namely: Quy Loc, Dinh Hoa, and Yen Lam, and 2 less developed chicken farming communes, namely: Ding Cong and Dinh Tan. The number of producers per commune was calculated to be proportional to the total numbers of chicken farming households of those communes.

2.2. Data analysis

The data were classified into 2 groups according to types of households, viz. independent and contract households. Descriptive statistics was used to calculate mean and percentage of different parameters. Those parameters were compared between independent and contract households.

3. Results and Discussion

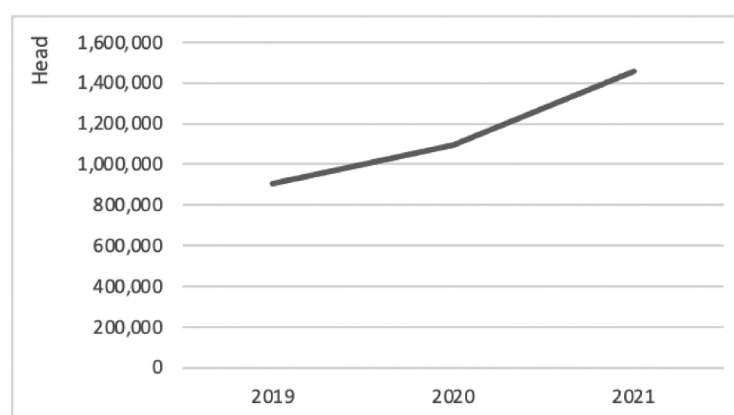
3.1. The status quo of household chicken production in Yen Dinh district

Production scale: In the studied district, there were five concentrated and large-scale production

areas, including: Dinh Hoa, Yen Tam, Yen Phu, Yen Lam, and Quy Loc town. In these areas, there were 89 large chicken farms with production scales ranging from 12 thousand to more than one hundred thousand heads of chickens.

The model of raising chickens based on contracts signed with enterprises such as Phu Gia Agricultural Products Joint Stock Company, JAPFA LTD, and CPV developed significantly in the district. According to Yen Dinh DARD (2021), there were 46 large farms practicing contract farming. Those farms raised around 5000 - 20000 heads per each production cycle.

Figure 1: Total chickens of Yen Dinh district in from 2019 to 2021 (heads)



Source: Yen Dinh DSO (2019, 2020, 2021)

Figure 1 shows that the total number of chickens in Yen Dinh district increased gradually during the period from 2019 to 2021. That was because farmers recognized the development potential of and the significant income gained from chicken production. In addition, chicken is a fast-growing animal with short production cycle and can eat diversified types of feed. Hence, producers in Yen Dinh district expanded their chicken production scale.

3.2. Genotypes

Yen Dinh district had a variety of chicken genotypes as presented in Table 1. The chicken genotypes that were most raised were Choi crossbred (37.5% in 2021) and Mia chicken (34.8% in 2021). The fact is that these two chicken

Table 1. Chicken genotypes raised in the district of Yen Dinh

Genotypes	2019		2020		2021	
	Population (Thousand heads)	Percentage (%)	Population (Thousand heads)	Percentage (%)	Population (Thousand heads)	Percentage (%)
Choi chicken	250.4	27.7	360.7	33.0	540.2	37.5
Mia chicken	300.7	33.3	450.6	41.2	500.9	34.8
Luong Phuong chicken	260.1	28.8	185.4	16.9	150.9	10.5
Others (Broilers, Dong Tao, Ho, etc.)	92.8	10.3	117.1	10.7	246.6	17.1

Source: Yen Dinh Department of Agriculture and Rural Development (2021)

genotypes have good disease resistance, high meat yield, delicious meat, nice appearances, and thus satisfying local consumers' preferences. However, the growing times of these two genotypes are longer than those of other genotypes such as industrial broilers of Hubbard and Luong Phuong breeds. The scale of Luong Phuong broiler production decreased because of the fact that its meat quality did not meet the eating habits of the local consumers due to its short raising time; moreover, Luong Phuong chicken is often susceptible to diseases, especially under unfavorable weather conditions.

Broilers had short raising time and high productivity. This type of chicken has just been

raised recently. However, the production process requires high technical attention. The production conditions must be absolutely guaranteed in terms of biosecurity. The product marketing also faced several difficulties, especially during the Covid-19 pandemic, so broiler production did not become a sustainable choice of producers in the district.

Beside the above-mentioned genotypes, other indigenous chicken breeds such as Dong Tao, Ho, and Lac Thuy, etc. were also found in smaller numbers in the district.

As can be seen in Table 2, chicken seedstock of contract households were totally provided by contract enterprises. The quality of seedstock from this source was good. For independent households,

Table 2. Sources of chicken seedstock supply

Supply sources	Independent households (%)	Contract households (%)
Contract enterprises	0.0	100.0
Thuy Phuong Breeding Centre	26.0	0.0
Thanh Hoa Poultry Breeding and Development Joint Stock Company	30.0	0.0
Local hatchery	18.0	0.0
Others	26.0	0.0

the selection of seedstock suppliers depended on the scale of production and the household's capital. Those households raising chicken at medium and large scales often chose reputable seedstock suppliers. Differently, those households raising at small scales chose local hatcheries or used their own produced seedstock.

3.3. Farming systems

There were three main chicken farming systems, viz. intensive, semi-intensive, and traditional scavenging systems (Table 3). The intensive farms totally used commercial feed for their chickens. The semi-intensive farms used commercial feed in part. Scavenging chickens were fed with traditional feeds such as corns, rice, green vegetables, and kitchen leftovers. The intensive and semi-intensive systems had short production cycles (ranging from 90 to 120 days), high productivity and low production costs with finish chickens mainly sold to traders or restaurants. Scavenging chickens had better meat taste for local consumers and were thus sold at higher prices. However, scavenging farming systems required more labor and land area.

The semi-intensive systems in the district accounted for the highest proportion and increased gradually over the three years. It can be explained that these systems could help solve the limitations of the other two types of systems, helping farmers get

higher profits compared to the intensive systems. Another advantage of these systems was that the chickens were still free to move around, thus improving chicken welfare and meat quality. However, this system requires a large production area enough to make cages and gardens for chickens.

Hidayat et al (2015) reviewing research works related to native chicken production in Indonesia show that semi-intensive and intensive systems significantly improve chicken productivity [5]. Similarly, Alam et al (2021) agreed that feeding regime was one of the important factors affecting the production of poultry [1].

3.4. Diseases

The incidences of chicken diseases in the independent households were higher than that of contract farming ones. This might be because all of the contract households applied disease preventing practices whereas this number for independent household was about 58%.

The remaining independent households did not use veterinary drugs because they feared the cost. They might slaughter the diseased chickens for home consumption (4% of the households) or even sold the chickens immediately (10% of the households).

For contract farming households, when their chickens got diseases, they received treatment

Table 3. Chicken farming systems in Yen Dinh district

Farming systems	2019		2020		2021	
	Population (thousand heads)	Percentage (%)	Population (thousand heads)	Percentage (%)	Population (thousand heads)	Percentage (%)
Intensive	7.6	27.6	9.3	33.6	10.4	36.9
Semi-intensive	10.2	37.0	11.3	40.9	12.1	43.1
Scavenging	9.7	35.4	7.1	25.5	5.6	20.0
Total	27.4	100.0	27.7	100.0	28.1	100.0

Source: Yen Dinh DARD (2019, 2020, 2021)

support from the contract companies due to the contractual obligations. Therefore, there was no case of selling unquarantined chickens to the market, thereby discrediting the companies.

4. Factors affecting the development of chicken production in Yen Dinh district

4.1. Policies

Over the years, Yen Dinh district always focused on implementing guidelines and policies of the central and provincial governments to encourage people to invest in development of livestock production in general and chicken production in particular. The goal was to develop livestock production from small and scattered to concentrated farms with high investment. Key highlights were the policies to encourage the restructuring of agriculture in Thanh Hoa province in the 2016-2020 period under Resolution No. 151/2015/NQ-HDND dated 11 December 2015 and Resolution No. 191/NQ-HDND dated 16 October 2019 of the provincial People's Council. These policies were an important factor influencing the development of sustainable poultry production in general and chicken production in particular.

4.2. Production facilities

The survey results in Table 4 shows that chicken barns of the independent households with small scale production were constructed quite simply, mainly in the form of tents with mesh fences or using old cattle sheds reinforced into chicken barns.

For the group of independent households, most of them (82%) built solid barns with ventilating fans (42%), automatic feeders (26%) and automatic drinking water taps (44%).

For the contract households, their chicken barns were well equipped. All of them had solid barns, ventilating fans and automatic drinking water taps. That was because the investment in production facilities was a necessary condition to be able to cooperate with the contract companies.

4.3. Production capital

Research results show that the majority of capital for chicken production of households in Yen Dinh was from loan sources. Households using their own funds mostly were those with small-scale production. Large-scale production independent households or contract households often had to borrow loans. The percentage of households borrowing loans of the contract households was higher than that of the independent households (57.5% vs. 38%, respectively). There was a large difference in the average amount of loans between the two groups of households due to the difference in the levels of investment in production facilities between the two groups.

4.4. Expertise of farmers

The independent farms had an average of 15.5 years raising chicken, which means that their experience in chicken farming was accumulated. However, the experience sometimes became the

Table 4. Facilities for household chicken production in Yen Dinh district

	Independent household (%)	Contract household (%)
<i>Chicken barns:</i>		
- Households with stable barns	82.0	100.0
- Households with enough barns for expanded production	18.0	27.5
<i>Ventilating fans</i>	42.0	100.0
<i>Automatic feeders</i>	26.0	87.5
<i>Automatic drinking water taps</i>	44.0	100.0
<i>Heat system</i>	0.0	22.5

Table 5. Participation of chicken producers in training courses in Yen Dinh district

	Independent households (%)	Contract households (%)
Households receiving trainings on chicken raising techniques	42.0	77.5
Topics in the training courses		
- Farming techniques	47.6	64.5
- Disease prevention	62.9	67.7
- Biosecurity	23.0	45.2
- Others	19.0	35.4
Application of the training contents by households in practice:		
- Applying most of the training contents	23.9	41.9
- Applying a few of the training contents	33.3	35.5
- Applying none of the training contents	42.8	22.6

cause of conservatism that refused to innovate in farming practice. The contract farms had a shorter farming experience (10.4 years) due to the fact that farming contract had appeared for a short time and more often young people were engaged in contract farming.

Participation in training courses should help farmers improve their farming knowledge and skills. As shown in Table 5, the percentage of the independent households participating in training courses was lower than that of the contract households (42% vs. 77.5%). That was because contract households were often large-scale producers and, therefore, in addition to training courses held in the locality, they were regularly invited to attend training sessions and workshops held by business partners such as veterinary medicine companies, associated contract companies.

After training, much knowledge was not applied in practice. The reason was that many households went to training courses only under the movement, getting money for their participation without the spirit of learning, to build up their capacity. In addition, due to the limited educational background of many farmers, the training contents were too complicated and

theoretical for them to follow and apply in practice. With the contract households, the rate of application to their production practice was higher than that of the independent households because the leaders of the contract households were in most cases younger so they were more active in learning and applying in practice.

6. Conclusions and recommendations

Chicken production scale in Yen Dinh district was increased gradually with diversified genotypes, of which, Choi crossbred and Mia chicken were two most common ones. Farmers applied three main production systems, viz. intensive, semi-intensive and scavenging. Among those, the semi-intensive system accounted for the largest proportion because it had low production costs and high quality of chicken meat. Chicken raising generated quite stable income for farmers. Chicken diseases quite often occurred, especially for independent households. Farmers applied composting, biological products and biogas digesters for chicken waste treatment.

Policies, production facilities, households' capita, expertise of producers, and output prices were the main factors affecting chicken production in Yen Dinh district.

In order to develop chicken production in Yen Dinh district in the coming years, several recommendations are proposed as follows:

- There should be solution to improve production capita for chicken farmers.
- Producers should also pay more attention to the selection and purchase of high-quality chicken seedstock.
- Relevant agencies could support producers to learn techniques of self-mixing chicken feed from

available feed sources such as corn, rice, and soybean... to reduce production costs and ensure quality of feed.

- Producers should proactively prevent chicken diseases with the vaccine and properly apply biosecurity measures.
- Yen Dinh district's administration should provide more trainings by coordinating with vocational training schools inside and outside the locality ■

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SỰ PHÁT TRIỂN CỦA HOẠT ĐỘNG CHĂN NUÔI GÀ TẠI CÁC HỘ GIA ĐÌNH Ở VIỆT NAM: NGHIÊN CỨU ĐỐI VỚI CÁC NÔNG HỘ TẠI HUYỆN YÊN ĐỊNH, TỈNH THANH HÓA

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TÓM TẮT:

Nghiên cứu này nhằm đánh giá thực trạng và các yếu tố ảnh hưởng đến sự phát triển của hoạt động chăn nuôi gà tại các nông hộ thuộc huyện Yên Định, tỉnh Thanh Hóa. Kết quả cho thấy quy mô chăn nuôi đã tăng dần cùng với sự đa dạng về các giống gà. Hai giống gà phổ biến nhất là gà Chọi lai và gà Mía. Phương pháp chăn nuôi gồm: thâm canh, bán thâm canh và thả vườn. Trong đó, hình thức bán thâm canh chiếm tỷ trọng cao nhất do chi phí sản xuất thấp, chất lượng thịt gà cao. Có một số yếu tố ảnh hưởng đến hoạt động chăn nuôi gà, gồm: chính sách địa phương, cơ sở hạ tầng, vốn, trình độ chuyên môn của nông dân và giá đầu ra. Nghiên cứu đề xuất một số giải pháp nhằm phát triển bền vững hoạt động chăn nuôi gà trên địa bàn huyện Yên Định.

Từ khoá: hợp đồng canh tác, tập quán canh tác, các yếu tố ảnh hưởng, hệ thống canh tác.