



FACTORS AFFECTING INCOME OF HILL- CHICKEN FARMERS IN YEN THE DISTRICT, BAC GIANG PROVINCE, VIETNAM

Huong Nguyen Thi 

Faculty of Accounting and Business Management,
Vietnam National University of Agriculture, Vietnam
huongnt.vnua@gmail.com

Yen Dang Thi Hai

Faculty of Accounting and Business Management,
Vietnam National University of Agriculture, Vietnam
haiyendang88@gmail.com

Abstract

This paper intended to explore the factors affecting income of hill- chicken farmers in Yen The district, Bac Giang province, Vietnam. For this, a descriptive research design was adopted. The empirical results shown that the average age of farmers is about 46 years old, most of them finished formal education at secondary school and the average number of labor directly involved in hill-chicken production is 2 labours. The average time of raising hill-chicken is 4 months and each farm has an average of 1340 chickens. Age of farmer, cost of chick and cost of feed are negatively correlated with the income of hill- chicken farmers. It is indicated that farmer has used input materials inappropriately or/and the price of input materials has fluctuated sharply. In contrast, the variables of farm size and access to credit in hill-chicken production have a positive impact on farmer income. Based on the results, this paper suggests some recommendations for farmers: farmers should involve in contract farming to ensure the stability of production inputs as well as to be able to access loans to expand farm scale to rise income.

Keywords: Income, hill-chicken farming, small-scale poultry, poultry production

INTRODUCTION

Small-scale poultry production, as an agricultural subsector, plays an important role in improving rural livelihoods, food security and poverty reduction in rural and semi-urban communities in many countries. Due to the short life cycle, low capital investment and fast return on investment, poultry as well as chicken farming can be a good source of income for rural farmers.

From 2006, Yen The district has aroused the movement of raising local chickens under the canopy of forest and fruit trees. In 2011, Yen The hill-chicken of Bac Giang province was the first chicken brandname in Vietnam to be granted the Certificate of Exclusive Trademark. Since then, Yen The hill-chicken production helps farmers get out of poverty and increases livelihoods. As a result, it has increased chicken production and increased income for farmers. Bac Giang currently has about 40 million poultry per year, of which chickens account for about 86%. In 2013, the production of commercial chickens of Bac Giang reached more than 38,200 tons. However, chicken farmers still have to face of many types of risk in farming, especially when avian influenza outbreaks continuously break out in recent years. Therefore, many farmers tend to develop other occupations to reduce risks and increase income. Furthermore, small farmers do not manage their farms efficiently because of limited resources, lack of knowledge and low investment, resulting in unstable production. Research on factors affecting income of chicken farmers in rural areas is still limited. Therefore, this paper focus on the topic "Factors affecting income of hill- chicken farmers in Yen The district, Bac Giang province, Vietnam".

LITERATURE REVIEW

Poultry production in the world

The poultry industry continues to grow quickly due to greater purchasing power and urbanization in many countries. The United States is the world's largest producer of poultry meat, accounted for 18 percent of global production, followed by China, Brazil and the Russian. China is the world's largest egg producer, with 42% of global production, followed by the United States (7%) and India (6%). Asia is the largest egg production region, accounted for more than 60% of global production. To meet the growing demand, world poultry meat production jumped from 9 to 122 million tons between 1961 and 2017, and egg production jumped from 15 to 87 million tons. In 2017, poultry meat accounted for about 37% of global meat production. Over the past three decades, egg production has increased by more than 150%, in which poultry is raised by about 80% of rural farmers in developing countries.

There are many related studies on poultry production and factors affecting poultry production in different countries. Notably, the research of G.M. Monirul Alam (2012) examined

the contribution of factors affecting poultry production and identified the problems and limitations of poultry farmers in some rural areas in Bangladesh. The results showed that different inputs including feed, veterinary medicine and time feeding had a positive influence on poultry production. Farmers have allocated their resources in the first stage of production for the chick farm and in the second phase of production for the broiler farm. The study identified the major problems faced by farmers in poultry production as: high feed prices, disease outbreaks, lack of stable electricity supply, lack of veterinary care and service facilities, inadequate knowledge about poultry production and lack of credit. Poultry as well as chickend production not only helps increase income for farmers but also can take advantage in creating job for farmer.

Poultry production in Vietnam

From 2016 to 2019, poultry production grown at rate of 15.43%; in which broiler chickens increased strongly with 19.32%. According to the Department of Livestock Production, in 2019 there were no major diseases in poultry; as a result, poultry farmers have expanded their farm size. Huynh Thi Dan Xuan and Mai Van Nam has described and identified the factors affecting the income, income structure and income diversity of poultry farming in the Mekong Delta. The analysis results shown that the farmer's income mainly depends on agricultural activities, accounting for 95%. Farmers are interested in diversifying income sources. Factors affecting farmer income are total farm land, loan, quarantine, income from poultry production, income from other livestock and non-agricultural income. It shows that in order to increase the income of livestock farmers, it is necessary to use land resources reasonably, boldly borrow investment capital when lack of capital, fully participate in the quarantine of livestock, pay attention to income sources from livestock and non-agriculture. In addition, many studies have also shown the economic efficiency of the livestock industry on farmer income. Notably, the research of Nguyen Quoc Nghi and associates; In which, research results shown that raising chickens brings quite high economic efficiency to farmers. The variables of chick cost, feed cost and veterinary medicine cost are negatively correlated with profitability of chicken production, while the variables of farm size, education level and technical training are positively correlated with profitability.

METHODOLOGY

Research design

A descriptive research design was adopted.

The Data

Secondary data: Collected from local reports on the situation of hill- chicken farming

Primary data: Based on Cochran (1977), the sample size was selected by following formula:

$$n = \frac{Z^2 \times p \times (1 - p)}{e^2},$$

Where, n is the sample size; Z is the statistical value containing the area under the normal curve (e.g., Z = 1.96 for 95% level of confidence); p is the estimated proportion of a feature that is present in the population (in general, the p value is equal to 0.5); and e is the desired level of precision. As a results, the sample size is 120 which appropriate to represent hill- chicken farming in Yen The district, Bac Giang province.

The questionnaire survey in which included two main parts: (1) socioeconomic characteristics of hill- chicken farming and (2) the input and output of hill- chicken farming was conducted among 120 randomly chosen hill- chicken farming.

Analytical approach

Descriptive statistics: Used to clarify the situation of hill chicken farming in the study site

Multivariable regression model: Used to analyze factors affecting income of hill chicken farming.

$$y_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_p x_{pi} + e_i$$

Yi: Income from hill-chicken farming.

X1i, X2i....Xpi are factors affecting income from hill chicken farming: education level, use of loan, labor...

ei: Error

RESULTS AND DISCUSSIONS

Overview of Yen The hill- chicken farming

Yen The district has up to 90% of farmers raising hill-chicken. About 2000 farmers have 500 to less than 1000 hill-chicken per farm (up 33.19% compared to 2018); 650 farmers have 1000 to 2000 hill-chicken per farm; 200 farmers have 2000 hill-chicken per farm. Hill chicken production is a semi-industrial method, the level of investment in material and technical facilities is not as large as that of industrial-scale farming. The main source of feed used for chicken production is a combination of industrial bran with other feeds, not completely industrial bran. In the district, there have also been many programs and solutions to encourage farmers. Therefore, farmers can support and guide each other in husbandry knowledge, exchange breeds, feed, and veterinary medicine. As a result, the poverty rate in 2018 decreased to 11%/year, the goal towards 2019 is to reduce it to 7%/year.

Socio-economic characteristics of hill- chicken farmers in Yen The district

Table 1 that the average age of the farmers is about 46 years old and the formal education level is relatively low (grade 9), which has affected the ability to access information and new techniques in production. The number of family labour involved in hill-chicken farming is about about 2 people because the chickens are left in the garden and surrounded by a fence, so they don't need spend much of time for the farming. The experience of farmer in hill-chicken farming is about 9 years, which shows that the hill- chicken farming model recently has been developed in the locality.

Table 1. Socio-economic characteristics of hill- chicken farmers in Yen The district

	Unit	Mean	Std.Dev	Min	Max
Farmer' characteristics					
<i>Age of Farmer</i>	Year	46.43	7.86	32.00	67.00
<i>Farmer's gender</i>	0- 0- Female				
	1- 1- Male	0.97	0.18	0.00	1.00
<i>Farmer's formal education</i>	Year	9.19	0.52	9.00	15.00
<i>Total No. labour</i>	People	2.63	0.87	1.00	5.00
<i>Total income</i>	Mil.VND/year	206.66	103.67	22.00	638.00
Hill-chicken farming's characteristics					
<i>Farmer's experience in hill-chicken farming</i>	Year	8.92	2.92	5.00	16.00
<i>No. labour in hill-chicken farming</i>	Labour	2.05	0.51	1	4
<i>Access to credit in hill-chicken farming</i>	0- 0- No				
	1- 1- Yes	0.16	0.37	0	1
<i>No.chicken/round</i>	Chicken head	1,343.33	765.62	500.00	5,000.00
<i>Participation in group</i>	0- 0- No				
	1- 1- Yes	1.00	0.00	1.00	1.00

Moreover, all surveyed farmers confirmed that they will continue to raise hill- chickens. Most of farmer has a small and medium scale farm, so the initial investment capital is low, most farmers use available capital or borrow a little from relatives for investment. Bank loans accounted for about 16.7%, in which, loans are mainly from Agribank and Vietnam bank for social Policies bank in the locality.

Hill- chicken farming has long time feeding than other type of chicken farming with average feeding time is 4 months. On average, each farmer raises 1340 chickens, it can be

seen that most farmer has small and medium scale farm. Since there have been no serious disease outbreaks in farm with loss rate is low. All farmers have participated in farmers' associations and technical training organized by the authorities and/or feed companies.

Factors affecting income of hill- chicken farmers in yen the district

Based on the multivariate regression model, the analysis results are shown in the Table 2.

Table 2. Factors affecting income of hill-chicken farmers in Yen The District

		beta	Significant
Income from hill-chicken	Y		
<i>Age of Farmer</i>	X1	-0.61	0.10*
<i>Farmer's formal education</i>	X2	0.79	0.91
<i>Farmer's experience in hill-chicken farming</i>	X3	-0.36	0.80
<i>Cost of chick</i>	X4	-11.17	0.04**
<i>Cost of feed</i>	X5	-1.37	0.06*
<i>Cost of veterinary medicine</i>	X6	4.80	0.13
<i>Access to credit</i>	X7	21.86	0.02**
<i>No. Chicken/round</i>	X8	0.04	0.00**
<i>Intercept</i>		18.41	0.01
R ²	0.57		
Adjusted R ²	0.51		

Notes: * statistical significance level at 10%

** statistical significance level at 5%

The model's adjusted R² is 51%, which means that income is explained by 51% of the variables included in the model.

There are 5 variables have statistical significance (Sig. < 10%), 3 variables are not significant, namely education, experience and cost of veterinary medicine. Age of farmers, cost of chick and and the cost of feed are negatively correlated with the income of hill- chicken farming in Yen The. This shows that farmers has used input materials inappropriately or/and the price of input materials has fluctuated sharply.

In contrast, the variables of farm size and access to credit in farming have a positive impact on income.

RECOMMENDATIONS

Yen The district has advantages in development hill-chicken farming, the district's total chicken has always remained stable from 4 to 4.5 million chicken. From the research results, it can suggest some solutions to improve the income of hill- chicken farmers in Yen The district. Specifically:

Due to the unstable price of input materials (feed, chick), the income of livestock farmers is negatively affected. To minimize the unstable price of input materials (feed, chick) farmers can participate in contract farming (contract to buy chick, feed).

Farmers can access loans to expand farm size, set-up semi-industrial/industrial model to increase income.

Although hill-chicken farmers participate in groups such as farmers' unions and women's unions, they do not benefit much from these groups. Since then, local authorities have had mechanisms and policies to strengthen the role of groups to make such group are more helpful for farmers.

REFERENCES

Department of Agriculture Yen The district (2019). Livestock Report

G.M. Monirul Alam (2012) Factors affecting poultry production: empirical insights from rural areas of Bangladesh. (<https://www.researchgate.net/publication/311543438>)

General Statistics Office (2019). Statistical Yearbook

Huynh Thi Dan Xuan and Mai Van Nam (2011). Factors affecting the income of poultry raising farmers in the Mekong Delta. Journal of Science 17b 87-96 Can Tho University.

Nguyen Quoc Nghi (2011). Economic efficiency of semi-industrial free-range chicken farming model in Chau Thanh A district, Hau Giang province. Journal of Science 2011: 20a, 230-238. Can Tho University.