

Linkages in the Chicken Chain of Vietnam: A Case Study in Kim Dong District, Hung Yen Province

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Abstract

Chicken raising in Kim Dong district, Hung Yen province of Vietnam is currently still in the first stage of development with spontaneous, small-scale, and easily vulnerable. These things lead to the inefficiency in the chain activities, and in the long run, all the chain actors will have less benefit. This study aims to analyze and assess the real situation of linkages in the chicken chain and proposed some recommendations to strengthen the linkages and improve the chicken chain in the Kim Dong district based on the questionnaire survey data of chicken chain actors. The findings showed that the chicken chain in the study site was undeveloped. The chain actors included input suppliers, chicken raising farmers, traders, retailers and some restaurants and supermarkets. Farmers accounted for the most important role. The other actors in the chain play a role of a bridge between producers and consumers. Processing agent did not appear in the chain. The linkages in the chain were simple, informal and loose. The actors were discrete and lack of cooperation. To promote the linkage of the chicken chain, farmers should improve their linkages to improve their strength, their voice and their power. Farmers could establish cooperation groups or cooperatives to support each other. Cooperation among chain actors should be enhanced to form a tight and official chain. Local authorities should support in finding markets, creating a bridge and an environment for chain actors. Extension and educational institutions should support farmers and other actors and stakeholders to improve knowledge of the chain, so they could understand the benefit and form effective chain.

Key Words: linkage, chicken, farmer, chain

1. Introduction

Chicken raising is a traditional occupation and plays an important role in the economic development of Vietnam. It ranks the second important positions, just after pigs raising in the whole livestock sector (Nguyen Van Khoa, 2014). In 2014, the numbers of poultry in Vietnam reached 327.7 million heads (GSO, 2015), in which, the amount of chicken accounts for around 95% and provides proportion of meat for the market of 14-15% (Nguyen Van Khoa, 2014). It is considered as an important economic sector and a great value contribution to the agricultural production, significance in the process of restructuring the rural agricultural economy in Vietnam in general, and in Kim Dong District, Hung Yen province, in particular.

In the conditions of economic integration, in order to improve the added value and improve the competitive capacities, all the business actors have to link and cooperate together in a whole chain from the first producers of products to the end consumers. Production along the chain, therefore, has become popular in the world in general and in Vietnam in particular. However, chicken raising in Vietnam in general, and in the Kim Dong district in particular, is currently still in the first stage of development with spontaneous, small-scale, easily vulnerable. The chain actors seem not to link with each other. In addition, the value added of agricultural production chains in Vietnam is still bias distribution to the non producers (Bui Thi Nga, Tran Huu Cuong, 2011; Bui Thi Nga et al, 2012). All these things lead to the inefficiency in the chain activities, and in the long run, all the chain actors will have less benefit.

This study aims to analyze and assess the real situation of linkages in the chicken chain and proposed some recommendations to strengthen the linkages and improve the chicken chain in the Kim Dong district in particular, in Vietnam in general.

2. Literature Review

Numerous earlier studies have concentrated on the value chain. In Vietnam, an economic and technical cooperation program funded by the German government (GTZ-SME) helped Vietnam to establish and improve a value chain of ornamental trees in Nam Dinh province, tourism in Danang, rattan handicraft production in Quang Nam, coffee in Dak Lak, safe vegetable growing in An Giang, avocados in Dak Lak, Pangasius fish farming in An Giang and longan fruit in Hung Yen.

These programs have proven that promoting the value chain is meaningful for the development of the farmers. The action creates employment for them, increases their income, enhances their knowledge, and improves their living standard (GTZ-SME, 2008). However, in a comprehensive value chain, farmers who produce and distribute products are forced to bear the largest share of the cost, but their corresponding earnings are the lowest and their growth rate lower, especially when it comes to value added.

A case study to estimate the cost of a value chain of rice in Vietnam and Cambodia showed that farmers bore 56.1% of the total cost, with a profitability margin of only about 20% (WB/GDS, 2007; Lebailly et al., 2008). Intangibles such as the distribution and marketing phases, often account for a larger share of the final price of a good than do its manufacturing costs (Kaplinsky, 2000; Lebailly et al., 2008).

One research project analyzed the stakeholder costs and benefits in a tea value chain in Vietnam (Ipsard, 2007; Lebailly et al., 2008) and found similar results. The farmers had to invest the most but earned the least in terms of proportion of benefit. The highest proportion of benefit came to the retailers. Farmers who joined the export market earned the most in comparison to those who sold in the domestic market.

The Mekong Delta Development Research Institute (Can Tho University, 2007) analyzed the Pangasius fish value chain and reported that there was an unequal distribution of benefits. Farmers always got the lower proportion of value added in comparison to collectors, retailers, and export manufacturing companies. Statistics showed that farmers got only 19.4% of the total benefits, retailers 2.1% and export manufacturing companies 78.5%. The research recommends that in order to achieve sustainable development, farmers must be the in center of development and be given due consideration.

Although there are many studies about value chains, it seems that none of them has tackled linkages the chicken chain in northern Vietnam. Besides, chicken is highly subject to heavy disease (such as H1N1, H5N1, ... appeared in Vietnam in the past). In this case, farmers are confronted with increased risk and vulnerability. Thus, the study of linkages in chicken chain is crucial.

3. Methodology

3.1 Selection of the Study Site

Kim Dong was selected as the study site because of the following reasons:

- Kim Dong has large consumer markets in the commercial centers of Hanoi, Hung Yen and rounding areas.

- It has a convenient transportation network, a good conditions to expand exchanges and commodity consumption.

- It is located in the triangle economic growth zone in the North Vietnam, therefore, it has attracted many domestic and foreign enterprises to invest in, including the processing companies. It also attracts many labors who consume the chicken products.

3.2 Collect and Analyze Data

The in-depth interviews, expert method, and standard questionnaire were used to collect primary data from the study site with a specific number of agents representing each chain actors as follows:

Table 1: Sample Size

Actors	Farmers	Traders	Retailers	Restaurants /Supermarket	Consumers
Numbers	40	3	6	3	18
Total	70				

Source: Survey results, 2016

The data were processed and analyzed using descriptive statistical methods, chain analysis to make judgments about the development of the chain.

4. Results and Discussion

4.1 Characteristics of Chicken Raising in Study Site

Most of the farmers raised hydric Dong Tao¹ breed chicken. Raising period ranged from 110 to 130 days. On the average, farmers raised 4 liters per annum. However, some farmers could raise 6 litters. The survival rate was 81.3% and common adult weight from 1.9 to 2.5 kg per head. The chicken was entirely captive with a playground, but a quite high density of average 9.6 chicken heads per m². They used entirely mixed bought feed. Some families added some additives such as wine by-products, vegetables to the diet. On average, each chicken consumed 4 kg mixed bought feed. Farmers using family labor for farming, almost no external hired labor, but sometimes, they exchanged labor or support each other in raising chicken. Numbers of common labors on farms were two or three.

Table 2: Characteristics of Chicken Raising

Characteristics	Unit	Mean
1. Numbers of litter per annum	Litter/annum	4.3
2. Farm size	Head/litter/farm	2340
3. Density	Chicken/m ²	9.6
4. Average adult weight	Kg/head	2.2
5. Feed consumption	Kg/head	4.02
6. Survival rate	%	81.3
7. Numbers of average labors	Labor/farm	2.4
8. Breed	Hybrid Dong Tao	
9. Raising method	Entire captive with playground	

Source: Survey results, 2016

4.2 Chicken Chain and Functions of its Actors

There are many suppliers of breed (nearly 20), mixed feed (around 15), veterinary (around 10), materials (many), for chicken raising farmers in the region. These suppliers are

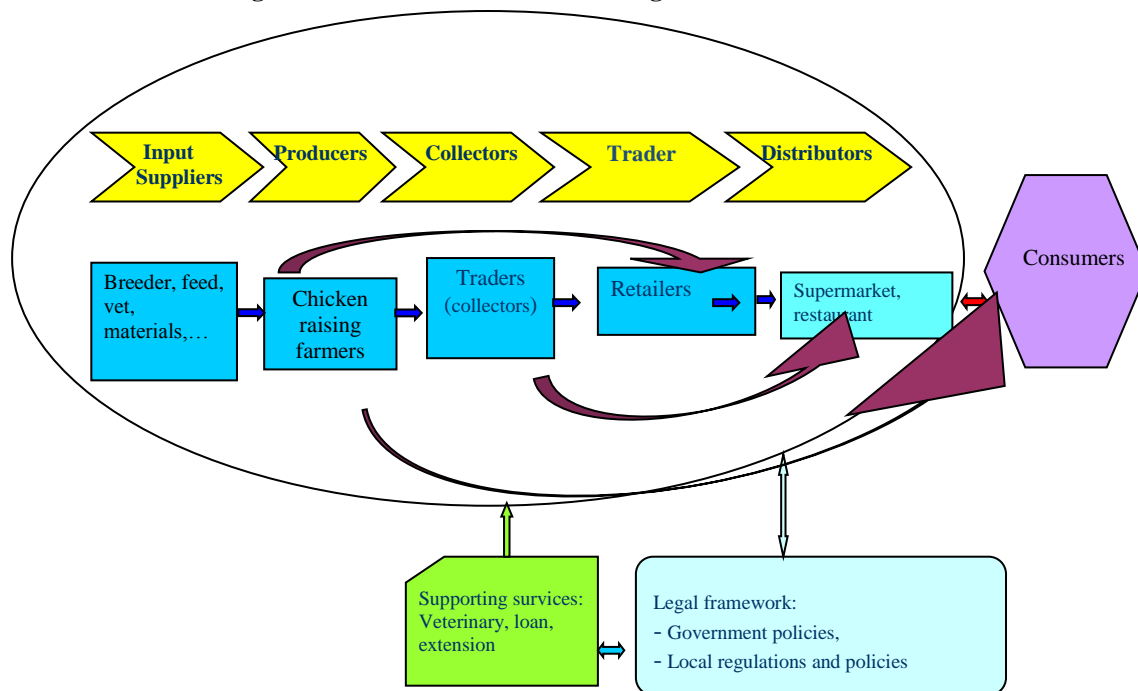
¹ Dong Tao is a pure chicken breed of Vietnam. It is considered to be very tasty meat and favoured by consumers in the north of Vietnam

both small shop and big enterprises, and have a loose relationship with the farmers. There are also many farmers raising chicken in the region. In the study site, traders play a role of collectors and wholesalers. Retailers often sale lives chicken or chicken meat in the local market. There are only few restaurants or supermarket joined this chain. All consumers bought fresh (not processed) chicken for meals.

Chicken raising farmers are considered as the core element to create the chain. Adult chicken will be collected by traders and then, sold mostly to retailers, a small part to restaurants, supermarket.

In the chicken chain in the study site, there are some support agents for the development of the chain. Some veterinary companies provided information about veterinary services through workshops, meeting; banks provided funding; and extension provided technical knowledge of chicken raising. Government and local authorities provide a legal framework for and create conditions for development the chain.

Figure 1: Chicken Chain at Kim Dong District



Source: Own compilation based on observation²

Note: Suppliers Function of the chain Actor of the chain
 Supporters of the chain Flows of goods and directed information

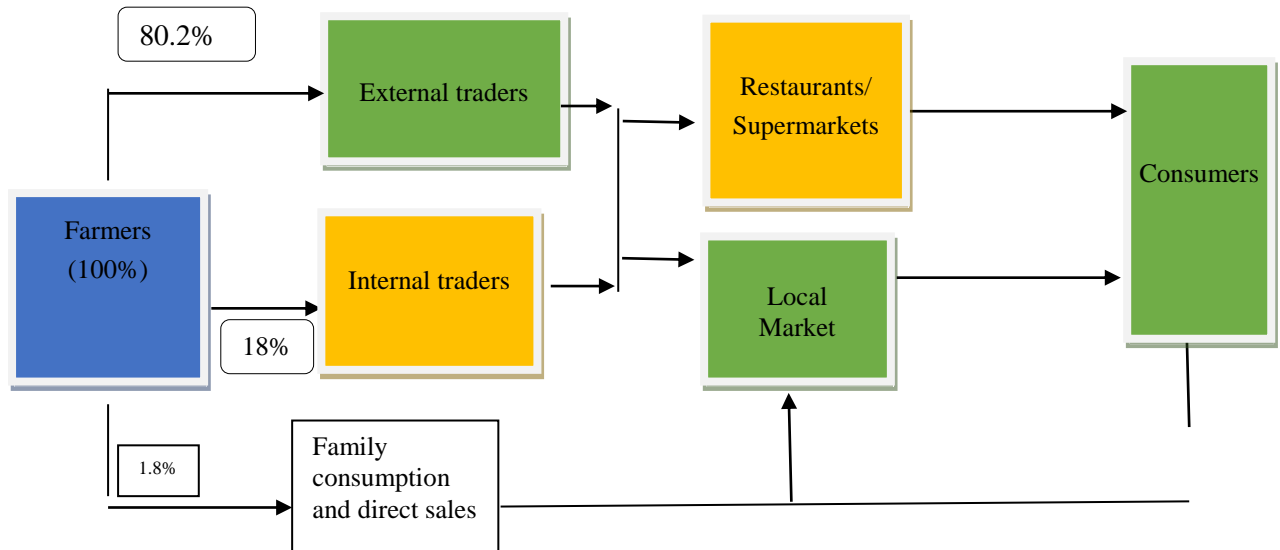
4.3 Chicken Distribution Channel

According to the surveyed results, 80.2% of adult chicken were collected by external traders (people outside of the district), 18% were collected by the local traders, 1.8% families

² The symbol based on Value link methodology

kept for auto consumption or direct sale. Most of the chicken collected by traders was sold to retailers who in turn, sold to end consumers in the local markets in kind of fresh chicken meat or live chicken. Only small proportion was sold to restaurants and supermarkets.

Figure 2: Chicken Distribution Channel



Source: Survey results

4.4 Value Chain Distribution among the Actors

Research showed that the farmers achieved 55.6% total revenue of the whole chain while the cost that they invested was the largest proportion, account for 84% total cost of the chain. The very high cost resulted in the low added value proportion of the farmers. They received only 24.84% total value added of the whole chain.

Table 3: Benefit Distribution among Chicken Chain Actors
 (VND³ per Kg of chicken)

	<i>Farmers</i>	<i>Traders (collectors/wholesalers)</i>	<i>Retailers</i>	<i>Restaurants</i>
Turnover	70523	77575	105785	126941
Intermediate cost	55378	55993	60761	65976
Value added (VA)	15145	21582	45023	60965
Labor cost	0	0	7520	10020
Financial cost	261	261	261	470
Gross profit (Pr)	14884	21321	37242	50476
Depreciation	144	187	337	495
Net profit (NPr)	14739	21134	36905	49981
<i>Marginal VA</i>	<i>15145</i>	<i>6438</i>	<i>23441</i>	<i>15942</i>

³ Vietnamese currency. 1 USD= 22,260VND, consulted on 12/09/2016
 (https://www.vietcombank.com.vn/exchangerates/)

<i>Marginal Pr</i>	14884	6438	15921	13233
<i>Marginal NPr</i>	14739	6395	15771	13075

Source: Survey results

Value added seems distributed unequally among actors along the chain. The farmers, who spent the most of investment (84% total cost of the chain), received only one fourth the total value added of the whole chain. The retailers and restaurants received 38.45% and 26% total value added of the chain, respectively, while they invested only less than 10% of the total cost. Trader invested only 1% of the total cost and gained 10% of the value added. In terms of value added in comparison to the expense, retailers and traders were the most benefits actor as they spent the least and gain the highest proportion of value added.

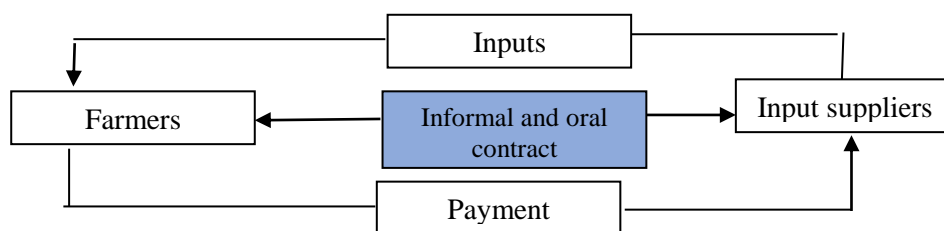
4.5 Linkages in the Chicken Chain

4.5.1 Vertical Linkages

4.5.1.1 Linkage between Farmers and Input Suppliers

At the surveyed farms, there was a linkage between chickens raising farmers and input suppliers through the informal and oral contract. According to this contract, suppliers provided necessary inputs to farmers, according to a predetermined time agreed. There were three types of input: breed (chickens 0-1 days), mixed feed and veterinary drugs. The breed would be provided when adult chickens were sold. For mixed feed, suppliers provided once a week or according to actual needs. The chicken was normally fed according to the norms, thus both farmers and suppliers could estimate the amount of food to be purchased and stored. Veterinary medicine was provided periodically (1 day old, 5 days old, 10 days old, 1 month old and 2 months old chicken). Regarding to the payments, farmers could make a payment at the time of purchase at the market price or pay after the sale of adult chicken with the agreed price that was normally higher than the market price.

Figure 3: Linkage between Farmers and Suppliers

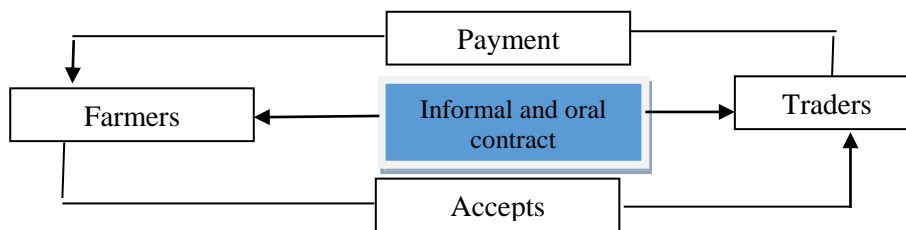


Source: Survey results

4.5.1.2 Links between Farmers with Traders

Similar to the linkage between farms and suppliers, a linkage between farmers and traders was informal and oral contracts. When the farmers want to sell their chicken, they will negotiate with the regular traders about quantity and chicken price. When their negotiation finished, traders would come to the farm and collect all or part of the adult chicken according to the agreement. All of the payment was in cash at the time of collecting chickens.

Figure 4: Linkage between Farmers and Traders

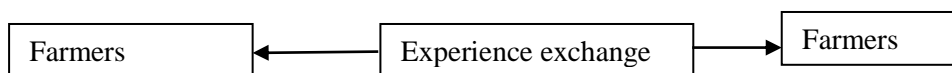


Source: Survey results

4.5.1.3 Horizontal linkage

In addition to vertical linkages between the farmers and suppliers/traders, there were a horizontal linkages among farmers, mainly to exchange and share experiences of chicken raising and farm management.

Figure 5: Linkage among Farmers



Source: Survey results

There were many veterinary companies/shop and mixed feed companies providing veterinary drug and mixed food in the study site. They did not link together, but competed with each other, sometimes causing instability temporary phenomena on the market.

In brief, the linkages in the chicken chain in the study site undeveloped, loose, informal, and just based on personal relationships and believe.

5. Conclusions and Recommendations

The chicken chain in the Kim Dong district, Hung Yen province of Vietnam was undeveloped. The chain actors included input suppliers, chicken raising farmers, traders, retailers and some restaurants and supermarkets. In which, farmers accounted for the most important role that created original products for the chain. The other actors in the chain play a role of a bridge between producers and consumers. In which, the traders played the role of collectors and wholesalers. Adult chickens are consumed mainly external regions. Most consumers used fresh chicken meat, so the processing agent did not appear in the chain.

The linkages in the chain were simple, informal and loose. The actors were discrete and lack of cooperation, therefore, it did not create a strength of the whole chain, and difficult to deal with the risks involved in production and trading, especially in case of market shock or disease.

To promote the linkage of the chicken chain in the Kim Dong district, some recommendation were considered:

- The farmers should improve their linkages to improve their strength, their voice and their power, especially in the negotiation process to ensure their benefit against the traders. Farmers could establish cooperation groups or cooperatives to support each other in finding

the market, such as signing contract with supermarket, restaurant, or finding the capital investments, farming techniques, veterinary services, etc.

- Farmers should improve the cooperative with other actors in the chain such as input suppliers, traders, retailers, etc. to form a tight and official chain. This chain could help them to receive input supports, product consumption, reduce market risks, and bring high economic efficiency and stability.

- Local authorities should support farmers in finding markets, creating a bridge and an environment for them to connect with other actors. They should create mechanisms to form the linkages among actors in the chain and work as a counterweight to make the chain linkage tighten.

- The extension and educational institutions should support farmers and other actors and stakeholders to improve knowledge of the chain, so they could understand the benefit and form effective chain.

References

Bui Thi Nga, Tran Huu Cuong, Luong Thu Ha, Philippe Lebailly (2012), Milk production and Marketing in small dairy holders in the Northern area of Vietnam: A case study in Phu Dong, *Vietnam's Socio-Economic Development journal*, ISSN 0868-359X, A quarterly review, Vietnam, September, 2012.

Can Tho University (2007), <http://www.baovietnam.vn/kinh-te/65262/23/Nghien-cuu-chuoi-gia-tri-ca-tra,-Doanh-nghiep-che-bien-huong-loi>, consulted on 22/12/2009.

GSO (2015), Vietnam Annual statistically Year Book, Statistical Publishing House, Vietnam.

GTZ-SME (2008), Report of *Value Chain Exchange Seminar*, Dalat, Vietnam. 11/2008.

Ipsard (2007), Report on Tea value chain, Hanoi
<http://www.ipsard.gov.vn/News/mispa/Taphuan/Nganhanghe.pdf> consulted 20/11/2009

Kaplinsky R. (2000), Globalization and unequalization: What can be learned from value chain analysis, *Journal of Development Studies*, Vol 37 No 2, p117-146.

Lebailly Ph., et al (2008), Commodity chain research methodology, *Journal of Science and Development*, Vol.6, No.3, P 15-31.

Nguyen Van Khoa (2014), Research the chicken value chain in Chi Linh district, Hai Duong province of Vietnam, Thesis, Hanoi Agriculture University, Vietnam.

Tran Huu Cuong, Bui Thi Nga (2012), Actors' benefit analysis on value chain of fresh dairy milk in Vietnam; *Journal of Economics and Development*, National Economics University, Hanoi, July 2011, Vol. 169, P 68-78.

WB/GDS (2007), "Toward a development strategy for private sector in Campuchia", No1, P.19.