

Upgrading the Milk Chain in Ly Nhan District, Ha Nam Province of Vietnam

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Abstract: In Vietnam, numerous earlier studies have concentrated on milk chain. But it seems that none of them has tackled upgrading the milk chain, while milk is a fresh food, highly subject to spoilage and hence waste. Dairymen are affected by the harsh natural conditions of high temperatures, humidity, and heavy seasonal rains. Thus, they are confronted with increased risk and vulnerability. Therefore, this study aimed at using SWOT analysis to get insight into the milk chain in Vietnam in a case study in Ly Nhan district, Ha Nam province and suggest some strategy for upgrading the milk chain in this area. The data came from standard questionnaires in a survey of all chain actors in the region. The result shows that milk chain in the study site includes 19 dairy farmers, 01 milk collector, 01 dairy plant, and many milk distributors. Formal milk distribution channel starts from dairy farms to milk collector, dairy plants, to wholesalers/retailers and to the consumers. Dairy farmers have a good motivation to develop their dairy herds but they suffer from high feed cost. The dairy plant has the highest power. The study also presents some recommendation for upgrading strategies for actors in the short and long term, which could improve the skills, capacities, competitiveness of each actor and for the whole chain.

Keywords: Upgrade, milk chain, SWOT analysis

INTRODUCTION AND LITERATURE REVIEWS

In Vietnam, numerous earlier studies have concentrated on the value chain in general and in milk chain in particular. 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 Da Nang, 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 as it creates employment for them, increases their income, enhances their knowledge, and improves their living standard. However, in a comprehensive value chain in general and that of milk in particular, 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.

Assessing the effectiveness of the Vietnam dairy sector from value chain analysis, Nguyen Viet Khoi and Nguyen Thi Thanh Huong [1] proved that in recent years, milk has been one of the fastest growing categories in the packaged food industry in Vietnam. However, added value in the dairy chain distributed unevenly. At the production stage, dairy farmers got less benefit due to the high price of dairy cattle feed. At the processing stage, the processing companies had

quite high profitability because consumers have little choice. This causes unsustainable development in the milk chain .

Similarly, in a research of Vietnam dairy chain analysis, Truong Minh Huy [2] said that, Vietnam dairy industry developed strongly in all stages of its value chain. However, the unequal distribution of value among actors in the value chain would create an unsustainable development of the dairy industry.

Analyzing the benefits of actors in the fresh milk chain in Vietnam, Tran Huu Cuong and Bui Thi Nga [3], pointed out that Vietnam is in the region with the highest economic growth rate and the highest increase in milk consumption in the world. Vietnam also achieved the second highest increase in milk production in Asia, with milk consumption rising rapidly. However, the domestic dairy industry only meets around one-fourth of consumer demand, the rest must be imported from the outside. While the retail price of Vietnamese milk is very high, the price of raw milk is low. As a result, the added value of dairy producers is small, most of the value distributed to actors that do not directly produce milk. The unequal distribution of added value between actors in the chain and tends to favor the dairy processor and distributors.

In other research, when analyzing the fresh milk chain in the northern area of Vietnam in a case study in Son La province, Bui Thi Nga, Tran Huu

Cuong and Philippe Lebailly [4] presented that the linkage among actors in the milk chain in Vietnam was loose, leading to the production efficiency of the whole chain was not effective. The processing plant has the most power and leads the whole chain. Value added is unevenly distributed among actors in favor of milk distributors while the farmers suffered from high risk.

Tran Hoang Dieu [5] in his research on developing the milk chain model of Vietnam, described that the consumption of fresh milk of Vietnamese increased significantly in the past and the demand for milk would still rise, create a good opportunity for the dairy industry to expand and develop. However, there were also many problems in the development process such as the volume of imported raw milk was quite large (over 70%), which imposed Vietnam to depend on the import market; added value distributed unequally among actors involved in the chain; milk quality was still not meet the expectations of consumers.

Although there are many studies about milk chain, it seems that none of them has tackled upgrading the milk chain, while milk is a fresh food, highly subject to spoilage and hence waste. Dairymen are affected by the harsh natural conditions of Vietnam such as high temperatures, humidity, and heavy seasonal rains. Thus, they are confronted with increased risk and vulnerability. Therefore, this study aimed at using SWOT analysis to get insight into the characteristics of the milk chain in Vietnam in a case study in Ly Nhan district, Hanam province and suggest some strategy for upgrading the milk chain in this area.

METHODOLOGY

The choice of study sites was based on the real condition of dairy production in Vietnam. Vietnam has a tropical monsoon climate with an average relative humidity of 84–100%. Vietnam also suffers from many natural disasters such as storms, flooding, drought, etc., often following an annual cyclical pattern. In natural conditions do not weigh in favor of the dairy industry.

Regarding favorable geographic areas for dairy farming, Vietnam has only two main places in the **highland** areas with quite cool climate, **long time experience**, have the **well-known trademark** (Moc Chau milk and Dalat milk) and consider as to get **higher productivity** in milk production: **Moc Chau** district (in Son La province) in the north and **Da lat** (in Lam Dong province) in the south. Due to some limitation¹, in this study, we choose unfavorable geographic areas for dairy farming at the contrary: lowland areas with quite hot climate, less experience,

¹ Mainly financial issues

and consider as getting low productivity and facing many difficulties in milk production: **Ly Nhan** district in Hanam province in the Northern area of Vietnam.

Standard questionnaire was used to collect data from all dairy farmers (19 farmers) in the region in January, 2017. In addition, informal, conversational interviews, in-depth interviews, key informant interviews and observation are used to obtain qualitative and quantitative data and information on the study site. Then, a SWOT (strengths, weaknesses, opportunities, and threats) is used to analysis the real situation and suggest the strategy to upgrade the milk chain.

RESULTS

Milk chain

The chain includes the functions of milk production, collecting and bulking, processing, and distribution. These functions are performed by major actors: dairy farmers, a milk collector, a dairy plant, and milk distributors. Each actor has a specific role in the chain and they link together quite well to be a chain. Besides, there are stakeholders who will facilitate the chain's development from outside.

There are many suppliers who provide the inputs for milk production such as: forage and concentrated feed, heifers, machinery for milk producers, etc., in the study site. There is not any dominant supplier of heifers, grasses, feed, proteins, etc., for dairy farmers in the region. This result is quite different from our previous study in Sonla province [4].

There were only 19 dairy producers in this district. They are considered to be the main actors in the chain. They play the most important role in the production chain. All other actors depend on their operation. Milk collectors are actors who collect milk from dairy farmers, bulk and cool it, then deliver it to dairy processors, dairy distributors, or customers. There is only one milk collector in this region (called collecting centers). He works independently without any power with other actors of the chain.

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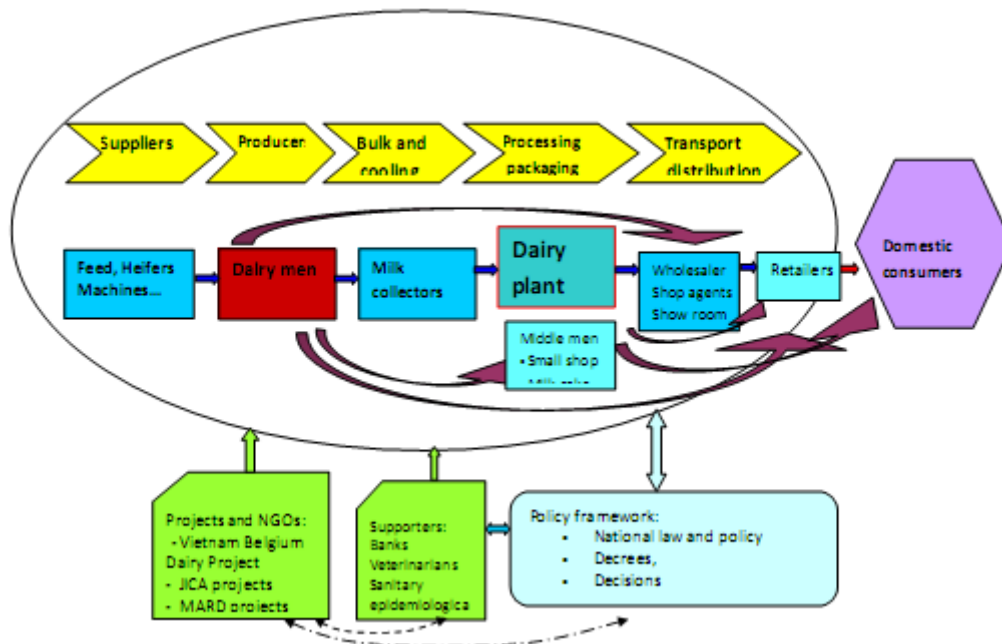


Fig-1: Basic actors and stakeholders in the milk chain

Source: Illustrate from survey results, 2017

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

The dairy plant (Friesland Campina) receives milk from milk collectors and goes on to process and package it. Theoretically, it depends on the dairy farmers. Even so, in reality, it has become the decision-making actor for the chain. It is not the most powerful actor in the milk chain as in our previous research [6]. It links dairy farmers with input suppliers, milk collectors, and distributors.

Distributors can be wholesalers, retailers, and middlemen who provide milk to the end customers. Because Vietnam does not export milk and is considered to be an importer of milk and milk products, this chain stops at the borders and does not concern itself with the export market. There are many participants referred to as small milk shops, milk candy shops, some showrooms and supermarkets, and many agents and retailers in the region.

There are not tight linkages among the chain actors as in our previous research [3], which tend to decrease benefits for the actors and the chain as a whole.

Besides the main actors in the chain, some stakeholders will be viewed as supporters in the chain. Friesland Campina support farmers the technique of breeding cows through training course. Although the veterinarian and outreach² initiatives helped farmers to deal with their specialized problems such as disease control, protecting dairy cows from harsh conditions, preventing them from suffering the effects of natural disasters, etc. However, according to the feedback of farmers, these supports were still not effective. Financial institutions such as the Bank for Agriculture and Rural Development (AgriBank), along with the Policy and Social Bank provided them with small loans for keeping cattle. The Government and local authorities created the environment to produce milk through decisions, resolutions, directives, decrees, etc.

² Mostly from the dairy plant

a. Milk distribution channel

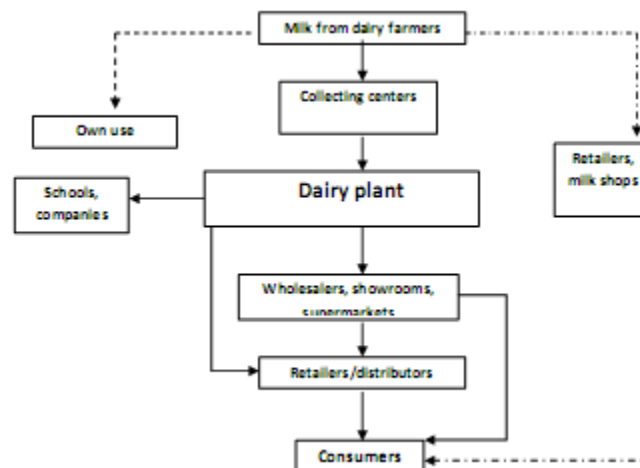


Fig-2: Milk distribution channel
Source: Surveyed results, 2017

Most of the milk produced from the dairy farms is collected by only one collecting center in the region. A small amount is used for self-consumption and collected by retailers or milk shops within the local region. All of the milk at the collecting centers is to be transferred to the dairy plant. The dairy plant processes, pasteurizers, and packages mainly fresh milk. Almost all milk was delivered to wholesalers, showrooms, and supermarkets. These agencies supply mostly to retailers or sell directly to consumers. This chain is similar to most of our previous research in another region in Vietnam [6].

b. Actor analysis

Farmers

The dairy farmers in Ly Nhan district, Ha Nam province have a very important input into future milk

production, and that is their best motivation. Despite many difficulties and challenges, they would really like to keep, expand, and develop their dairy herds. Dairy cattle bring them a relatively good livelihood, which is very difficult to find in other agricultural sectors. Their income is also higher than that in other agricultural jobs.

Dairy plant

The strongest point of the dairy plant is the power it holds in the chain. With this power, it is in a position to impose many regulations and rules on other actors in the chain, controlling almost the whole chain unofficially. It also creates quite good linkages with other actors in the chain. It is in close contact with the dairy farmers and collectors. It is a monopoly buyer in the region.

Table 1: Actor analysis of the dairy milk chain in Hanam province of Vietnam

	Strength	Weakness	Opportunities	Threats
Dairy farmers	<ul style="list-style-type: none"> - Good motivation - Regular income to cover daily living cost - Higher income and profit compared to other Agri sectors - Employment for farmers 	<ul style="list-style-type: none"> - High and increasing feed costs - Lack of management and monitoring system - Depend on purchases feed - High investment costs: heifers, feed, sheds, etc. - Hard-working - Limitation of land - Lack of material and equipment - Lack of experience in milk production 	<ul style="list-style-type: none"> - Residual products: straw, sugarcane and maize stove, etc. - Updated artificial insemination technology - Local authority's supports - Stable output market - Join the training course 	<ul style="list-style-type: none"> - Outbreaks of disease - Lack of professional association - Living environment polluted due to cow manure - Lack of information - Lack of irrigation system - Increasing the price of input market - Lack of supporting technicians

Milk collectors	<ul style="list-style-type: none"> - Good relationship and communication with farmers - High income - Easy work 	<ul style="list-style-type: none"> - Depends highly on the dairy processing plant - Lack of knowledge and technique about milk contents and storage (milk quality) - High investment cost 	<ul style="list-style-type: none"> - Job creation - Join the training course - No competitor 	<ul style="list-style-type: none"> - Low competitiveness (no motivation to develop)
Dairy plant	<ul style="list-style-type: none"> - Powerful - Good linkages with other actors along the chain - Monopoly in the region - Known trademark 	<ul style="list-style-type: none"> - Low competitive capacity - High investment cost 	<ul style="list-style-type: none"> - Milk processing technology developing - Demand for milk increasing rapidly 	<ul style="list-style-type: none"> - Many potential competitors
Distributors	<ul style="list-style-type: none"> - High proportion of added value - Low cost investment - Employment creation 	<ul style="list-style-type: none"> - Unprofessional - Untrained in sales skills - Limited literacy and problem solving skills 	<ul style="list-style-type: none"> - Good potential market - High demand for milk 	<ul style="list-style-type: none"> - High competition with imported milk and milk products - Fluctuating market, external shocks

Source: Interview results and Group discussion, 2017

Milk collector

Lack of knowledge and technique for quality control, enabling them to ensure the quality of milk and protecting it from the risk of spoiling is the biggest weakness of milk collector. However, he has a good relationship and communication with farmers and has a chance to get high income with easy work.

Milk distributors

Milk distributors had a large and expanding potential market. Their biggest challenge is the high competitive pressure in the market. Their products have to compete with other milk products, other milk substitute products, and imported milk products.

2. Suggestion for upgrading the milk chain

Base on the real situation and the SWOT analysis, some suggestions to upgrade the milk chain in the region are:

For the **dairy farmers**, *in the short term*, they had better increase using the local residual products (rice straw, sugarcane...) to reduce the feed cost, which will in turn, increase their added value. They would sharing and learning experience with other best practicing farmers within and outside of the region to improve their knowledge of dairy farming. Machines and equipment should be more invest to reduce the labor cost. *In the long-term*, they should modernize their farms; participate more in the training course, both the technique and farm management courses, to improve their capacities, which would help them to become more independent, more confident and more effective in farm management. In the long term, they

would become professional dairy farmers and can solve their problems arising in their farm themselves.

Exploit the strengths of high income with quite easy work and having a good relationship with farmers and milk processor, *in the short-term*, **milk collector** had better maintain and tighten its relationship with other stakeholders. *In the long-term*, they should improve their knowledge and technique of milk contents and storages through joining the training course, learning and sharing experience with milk collectors in other regions. These will help them to improve their capacities and competitiveness as in the future there will be more milk collectors and he has to compete with them.

As the monopoly and most powerful actor in the chain, *in the short-term*, **dairy plant** could exploit their strength to satisfy the increasing demand of the customers. *In the long term*, they had better improve their competitiveness capacities, enhance their trademark to increase the customers' believe and compete with potential competitors.

With the strength of low cost investment while still getting high proportion of added value, *in the short-term*, **milk distributors** could exploit their advantages to provide milk product to the high demand potential market. However, in order to compete with other distributors, especially the exported milk distributors or in case of fluctuated market, *in the long-term*, they had better improve their capacities, sales skills, problem solving to be more professional and more effective.

Finally, all milk actors should cooperate and links together in a more formal type such as through contract farming to enhance the whole chain. In addition, they could call for the most support from the other stakeholders of the chain such as the policy support from the local government, financial support from the financial institutions, technical support from the NGOs or universities, etc.

CONCLUSION

The milk chain in Ly Nhan district, Ha Nam province of Vietnam includes 19 dairy farmers, 01 milk collector, 01 dairy plant, and many milk distributors. Each actor has a specific role in the chain and they link together quite well to be a chain. Besides, there are stakeholders who will facilitate the chain's development from outside.

Most of the milk produced from the dairy farms is collected by only one collecting center, then is transferred to the dairy plant. The dairy plant processes, pasteurizers, and packages mainly fresh milk. Almost all milk was delivered to wholesalers, showrooms, and supermarkets. These agencies supply to retailers or sell directly to consumers.

The dairy farmers in Ha Nam have a good motivation to develop their dairy herds but they suffer from high feed cost, which lead to low economic efficiency. The dairy plant has the highest power to impose many regulations and rules on other actors in the chain, controlling almost the whole chain unofficially. Lack of knowledge and technique for quality control, but the milk collector has a good relationship and communication with farmers and has a chance to get high income with easy work. Milk distributors have a large, expanding potential market, but they have to face with the high competitive pressure in the market, especially with substitute and imported milk products competitors.

In order to upgrade the milk chain, *in the short term*, farmers had better increase using the local residual products (rice straw, sugarcane...), improve their skill of farm management, invest more in equipment. Milk collector, dairy plant and distributors had better maintain and tighten its relationship with other stakeholders to exploit their strength to satisfy the increasing demand of the customers. *In the long-run*, farmers should modernize their farms; enhance technique and farm management skill, improve capacities to become professional dairy farmers. The milk collector had better improve their knowledge and technique of milk contents and storages. Dairy plant should improve their competitiveness capacities, enhance their trademark to increase the customers'

believe and compete with potential competitors. Distributors had better improve their capacities, sales skills, problem solving to be more professional and more effective. Finally, all milk actors should cooperate and links together in a more formal type through contract farming to enhance the whole chain. They could call for policy support from the local government, financial support from the financial institutions, technical support from the NGOs or universities.

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