

CHARACTERISTICS AND EFFICIENCY OF AGENTS IN MILK COMMODITY CHAIN IN NORTH VIETNAM

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Summary

The study was carried out in 4 provinces of North Vietnam (Hanoi, Ha-Tay, Vinh-Phuc, Son-La) from March 2006 till February 2007, with a view to analyzing economic roles as well as evaluating activity efficiency of some main agents in milk commodity chain. Study results focused on two main agents: producing agent – dairy cow breeding households, and intermediate agent – milk collecting and purchasing bases. Milk distributing channels of the commodity chain have quite simple structure with a unique intermediate agent from the production to the processing, who is the milk collecting and purchasing agent. The dairy cow herd scale of producing agents is rather small, their activities are dispersed and unstably developed because of unsatisfying quality of breeding cattle, bad breeding techniques, unstable and weakly competitive consumption market. Added value created by milk producing agents – households reached 1.6 – 1.8 million VND/ton of milk in Hanoi, Ha-Tay, Son-La, and 0.6 – 1 million VND/ton of milk in Vinh-Phuc. Pure income obtained by producing agents was maximally 7.5 million VND/household in Son-La, and very low in Vinh-Phuc – 0.7 million VND/household. Added value of collecting agents reached 0.32 million VND/ton of milk, however, their monthly pure income was the highest – 12.1 million VND/month/base. Long-term programming and perfecting market institution will be the key for the sustainable development of the Vietnam's milk commodity chain at present as well as in the future.

1. BACKGROUND

The dairy cow husbandry in North Vietnam has achieved its important growth in recent years although it hasn't been sustainably developed yet. In comparison of 2002 with 2006, the dairy cow herd of our country increased from 3.89 million heads up to 6.51 million heads, with average growth rate 9.67%/year (Department of Animal Production, 2007). According to the Department of Agricultural Extension until August 1st, 2007, there were 98,659 dairy cows in the whole country (estimated productivity 234,437.9 ton of milk/year), in which the Northern provinces had 17,845 heads (occupying 18.09% of total herd). In spite of the fluctuation of milk production in recent years, the whole country still had more than 19,000 dairy cow breeding households. Milk exploiting and processing activities in the country got remarkable development.

It is imperative to learn about production scale and organization mode, relationship and profit distribution between agents in the milk commodity chain, since then, propose feasible solutions to impulse the development of milk commodity chain in North Vietnam.

Starting from these requirements, the project on studying «the milk commodity chain in North Vietnam» was deployed in 4 provinces Hanoi, Ha-Tay, Vinh-Phuc and Son-La, aiming at learning about activities and restriction in course of milk production and commercialization in the studied zone. This paper is a cursory quotation and brief introduction of a part of the study results.

2. RESEARCH METHOD

In order to meet the study demands and objectives, we have collected the following data:

- Surveying 360 dairy cow breeding households of 4 provinces Hanoi, Ha-Tay, Vinh-Phuc and Son-La (90 households/province), where there were observation notebooks of 180 dairy cow breeding households from March 2006 till February 2007.
- Directly interviewing milk collecting agents (8 households)
- Using financial analyse method in order to compare added value of agents participating in the milk commodity chain, by which:

§ All items of receipts and expenditures are converted to 1,000 kg of milk

§ Product prices are calculated at real prices

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3. RESULTS AND DISCUSSIONS

3.1. Diagram of milk commodity chain activities in North Vietnam

Study results showed that main agents participating in milk commodity chain activities in North Vietnam consist of: milk producing agents, milk collecting and purchasing agents, milk processing agents and milk retail selling agents. Consumption channels of milk commodities are indicated through the following diagram:

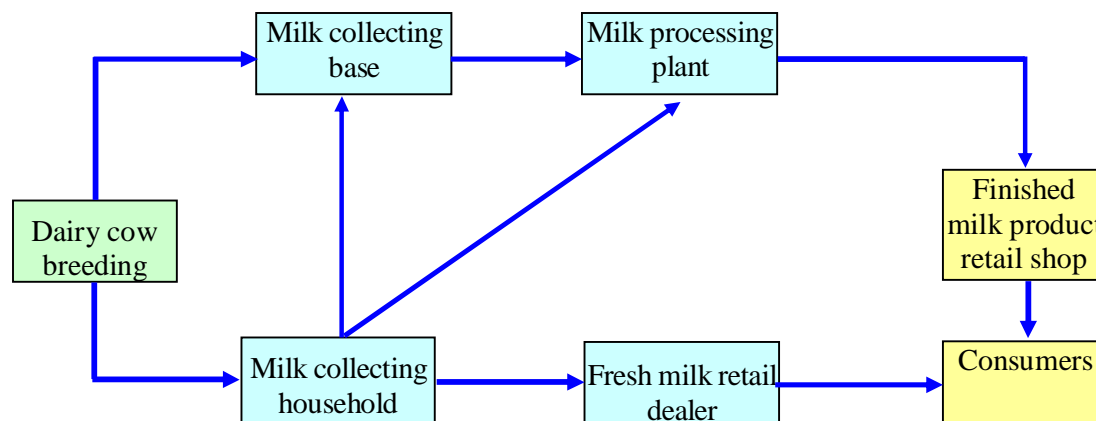


Diagram of consumption channel of milk commodity chain in North Vietnam

The first agents participating in the commodity chain are dairy cow breeding households. Milk products are carried from breeding households (producing agents) to consumers by different ways. For areas of plains and city edges (Ha-Tay, Hanoi), after being collected, frozen and sterilized at small collecting households, fresh milk can be sold to consumers or transferred to big collecting bases or to milk processing plants. As for areas far from cities or mountainous areas (Vinh-Phuc, Son-La), fresh milk is collected from households by big collecting stations and transferred to milk processing plants.

In the milk commodity chain, dairy cow breeding households play a decisive role for the product input. Milk collecting bases are important intermediate agents for the balance of prices, the bargain about input quality between the 2 agents dairy cow breeding households and milk processing plants.

3.2. Characteristics and financial analyses of some main agents of the commodity chain in North Vietnam

3.2.1 Milk producing agents

Dairy cow husbandry has been imported to Vietnam since the 1970s. However, it was mainly conducted in State-run farms or State-run breeding enterprises. In the mid 90s, when these farms and enterprises were dissolved, the dairy cow husbandry of households started developing. At present, study results showed that in provinces of North Vietnam commercialized fresh milk productivity mainly belongs to household areas, farms still occupy small proportion. In the commodity chain dairy cow breeding households and farms are called producing agents.

Professional age of dairy cow husbandry is very much different between the provinces. The dairy cow husbandry in Son-La started for the longest time (13.99 years), that in Vinh-Phu is the « youngest » (4.19 years) and started in 2001. The number of persons of households in different provinces has no great difference, averagely in the whole zone it is 4.62 persons/household with 2.67 effective workers/household, in which 1.75 workers/household participate in dairy cow husbandry. Most of households use familial labour for dairy cow husbandry (86.6%). A small proportion of them in Son-La and Hanoi who raise more than 8 cows have to hire labour (13.4%), but only seasonally.

The economic standard of households plays a very important role for dairy cow breeders. Study results indicated that only those households who have rich or medium economic standard can raise dairy cows. The percentage of households receiving funds loaned by

different sources for investing in dairy cow husbandry is 48.1% of the total with average loan of 31.9 million VND/household.

Study results obtained in provinces of North Vietnam showed that the racial structure of dairy cow herds at households actually has many differences. In Son-La, the major race of their cow herd is pure HF, occupying 97.8%. Most of dairy cow herds in Ha-Tay are of F2 hybrid race. Dairy cow races in Vinh-Phuc have nearly equal proportions of F2 and F3 hybrid. In Hanoi, the race structure is equally distributed for F1, F2 and F3 hybrid.

Because the land fund for building housing and growing grass for cows is restricted, except for the household group in Son-La (9.1 heads/household), other household groups in RRD raise dairy cows with limited quantity: Hanoi (2.59 heads/household), Ha-Tay (3.68 heads/household), Vinh-Phuc (2.85 heads/household). In general, dairy cow breeding households in North Vietnam, except Son-La, conduct their husbandry on small and dispersive scale, lack of planning. Milk productivity of the dairy cow herds in Hanoi and Ha-Tay reached a medium level (14.58-15.55 kg/head/day), in Vinh-Phuc – quite low (11.38-12.54 kg), but in Son-La – rather high (16.72 kg/head/day).

In order to assess the activities and economic efficiency created by agents of milk commodity chain, the financially analyzing method is used for each agent. Analysis results are presented in Table 1 :

Table 1. Financial analyses of producing agents based on real prices
(period 3/2006 – 2/2007)

(Unit : 1000VND/ton of milk)

Designation		Hanoi	Ha -Tay	Vinh-Phuc	Son-La
Money of milk sale (main product)		3775,00	3555	3765	3320
Sale of calves + rejected cows (by-products)		497,80	449,44	346,135	496,41
Total receipt (GO)		4272,80	4004,44	4111,14	3816,41
Intermediate costs (IC)	Breeding piglets	298,68	304,03	511,235	287,08
	Concentrated feed	1295,62	1389,29	1549,36	931,22
	Rough feed	771,26	802,38	1064,38	799,64
	Mineral + other feed	20,41	21,51	26,885	17,33
	Electricity+water	47,79	47,59	49,73	13,16
	Cross-breeding	29,87	29,08	37,715	31,1
	Veterinary medicine	38,50	51,55	51,405	41,87
Total IC		2502,12	2645,44	3290,7	2121,39
Added value (VA)		1770,69	1359	820,43	1695,02
A	Housing amortization + Tools for animal husbandry	45,13	42,3	50,29	37,68
F	Financial costs + others	23,89	23,13	46,10	23,92
Pure income (NPr)		1701,66	1293,57	724,05	1633,42

In general, milk prices in different localities have remarkable differences, which are decided by competitive and exclusive factors of milk collecting agents (exclusive to collect typically in Ha-Tay and exclusive to both collect and process in Moc-Chau).

The differences of milk prices at farm gate and milk productivities result in very different levels of costs and added values at households depending on cow breeds. Households in Vinh-Phuc having their lowest- productivity cow herd obtain the lowest added values and pure incomes. Although households in Son-La sell their milk at the lowest prices, they get added values and pure income equivalent to those of Hanoi and Ha-Tay. For milk producing agents, the milk productivity of dairy cows has a decisive character with respect to the profits. Therefore, in order to examine advantages of milk commodity chain at different localities, we can financially analyze the common selling prices. Analysis results are presented in Table 2 :

Table 2. Financial analyses of milk producing agents according to average common prices of the whole zone
(period 3/2006 – 2/2007) (Unit : 1,000 VND/ton of milk)

Designation		Hanoi	Ha-Tay	Vinh-Phuc	Son-La
Money of milk sale (main product)		3675,71	3675,71	3675,71	3675,71
Sale of calves + rejected cows (by-products)		497,80	449,44	346,14	496,41
Total receipt (GO)		4173,51	4125,15	4021,85	4172,12
Intermediate costs (IC)	Breeding piglets	298,68	304,03	511,24	287,08
	Concentrated feed	1295,62	1389,29	1549,36	931,22
	Rough feed	771,26	802,38	1064,38	799,64
	Mineral + other feed	20,41	21,51	26,89	17,33
	Electricity+water	47,79	47,59	49,73	13,16
	Cross-breeding	29,87	29,08	37,72	31,1
	Veterinary medicine	38,50	51,55	51,41	41,87
Total IC		2502,12	2645,44	3290,70	2121,39
Added value (VA)		1671,40	1479,71	731,15	2050,73
A	Housing amortization + Tools for animal husbandry	45,13	42,3	50,29	37,68
F	Financial costs + others	23,89	23,13	46,10	23,92
Pure income (NPr)			1414,27	634,77	1989,13

Study results indicated that added values and pure profits of producing agents have great differences between different localities. At the same selling price of 3,675,710 VND/ton of milk, the pure profits of dairy cow breeding households in Son-La are 24.14% higher than that in Hanoi, 40.65% higher than that in Ha-Tay, and 3 times higher than that in Vinh-Phuc. It is shown that natural conditions and milk productivity of the cow herd in Son-La have created determined advantages for dairy cow husbandry there.

3.2.2 Milk collecting agents

Milk collecting stations of the Company: This form is applied in Moc-Chau, Son-La. Moc-Chau dairy cow breeding Company has opened its milk collecting stations. Company's agents directly control milk quality, collect and purchase milk. The cow breeders have close relationship with the Company, as the Company gives them assistance in funds and techniques and assumes the consumption of all their products. Therefore, the milk purchasing prices in Moc-Chau are considerably lower than those of the provinces in RRD.

Milk collecting cooperatives : This form is applied to some localities where dairy cow husbandry is in concentration (typically in Phu-Dong, Gia-Lam, Hanoi). The dairy cow breeding households associate themselves in fund assistance and breeding techniques, and especially, in milk consumption. In general, these cooperatives haven't got effective activities yet, and they have to undergo the competition with other private households.

Milk collecting agencies (or private milk collecting households) : In general, finished milk producing companies such as Vinamilk, Nestle, Hanoimilk, Dutch Lady...open their collecting agencies at developed dairy cow breeding localities. Heads of these agencies are usually local people of economic potentiality and business ability. In recent years, this milk collecting form has been rather developed in North Vietnam and showed its labour advantage and business efficiency. Generally, milk collecting agents (milk collecting bases) must have 3-4 regular workers, in which possibly 1-2 familial workers. They need the activity funds of 150-400 million VND. Among them, about 54% use their self-reliant funds, the rest of them receive fund assistance from milk processing companies and bank loan or from relationship.

Fixed assets of milk collecting bases consist of workshop housing, generators, freezing basins, water pumps, reservoirs, balances, milk control instruments...with the value of 100-200 million VND.

Table 3. Financial analyses of milk collecting agents

(Unit : 1,000VND/ton of milk)

Designation		Money
Total receipt (GO)	From sale of milk	4050,00
Intermediate costs (IC)	Purchase costs	3675,71
	Transport costs	51,03
Total IC		3701,03
Added value (VA)	GO - IC	323,26
A	Amortization of freezing basin + transport vehicle + water pump + others	38,06
W	Hire of workers	58,23
F	Financial costs	8,16
Sum (A + S + W + F)		104,45
Pure income (NPr)		218,81

As the product output is ensured by milk processing companies, the milk collecting agents have more advantages than those of cow breeding agents. Moreover, they have decision-making rights on milk purchase prices after the quality control. In some cases, milk collecting bases will force cow breeding households to sell their milk at lower prices in order to gain high profits. The difference between purchasing price and selling price at collecting bases varies within 200-320 VND/kg (averagely 284.29VND/kg in period 3/2006-2/2007). Most of milk collecting bases pay milk money to cow breeding households after 1 month (particularly after 3 months such as in Vinh-Tuong, Vinh-Phuc). Pure profits of milk collecting bases reached 218,810 VND/ton of milk.

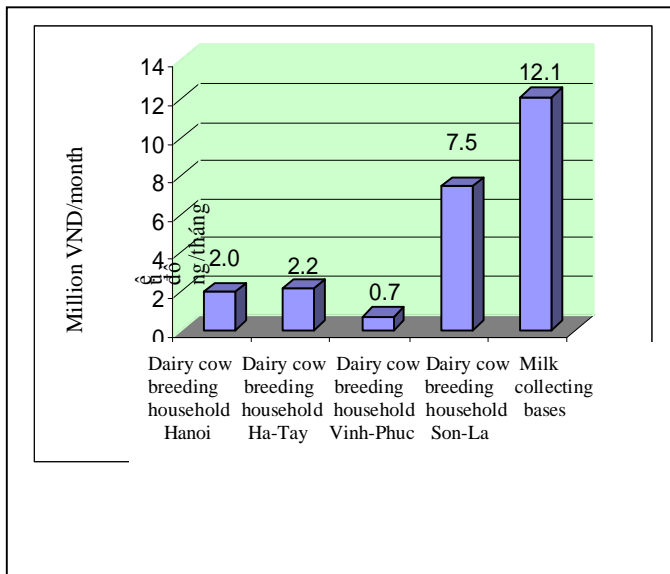
3.3 Synthetical comparison of some economic indices of the commodity chain

In general, dairy cow breeding activities are adapted step by step to production conditions and The policy system reform is developed, owing to which the milk commercialization will be gradually more ameliorated and specialized. Through their roles, different agents at different grade contribute their determined part to the development of milk commodity chain.

Table 4. Comparison of some economic indices of milk producing agents and milk collecting agents

Agents	Dairy cow breeding households	Milk collecting bases
VA (1000VND/ton of milk)	1429,6	323,3
RNE (1000VND/ton of milk)	1354,3	218,8
RNE/CI (%)	50,28	5,87
Fund cycle (day)	35	1,5
Fund turnover (turn/year)	10,4	243,3

Table 4 shows that added values and pure profits of cow breeding households are higher than those of milk collecting households per 1 unit of milk. Investment efficiency (RNE/CI) of the breeding households (50.28%) is higher than that of the collecting ones (5.87%). However, when considering the efficiency of fund use through the index of fund use cycle or fund turnover/year, the milk collecting agents obtain more efficiency than that of producing agents.



Graph of pure profit comparison of producing agents with collecting agents

The graph indicates that monthly pure incomes of dairy cow breeding agents and milk collecting ones have a great difference. The latter obtain the highest pure income (12.1 million VND/month). The dairy cow breeding households in Son-La obtain better income than that of the remaining zones, as they have advantages of investment, natural conditions and large scale (9.1 heads/household).

It is obvious that the milk selling prices of breeding households in period 3/2006-2/2007 in the whole country in general, and in North Vietnam in particular, were increased 400-800 VND/litre higher than those in 2005. However, the price increase in this period hasn't been high enough yet to reassure the dairy cow breeders on their work. The milk collecting prices are mainly decided by milk processing companies. It is why exists a paradox in our country that the milk consumers have to buy milk at the highest prices, while the dairy cow breeders sell their milk at the lowest prices in the zone (www.vnn-news.com)

4. CONCLUSION

The milk commodity chain in provinces of North Vietnam is taking the self-adjustment steps of activity mechanism as well as scale and market.. The cow breeding households are the first agents and play an important role in the commodity development, but they obtain the lowest profits. Their added values aren't equal at the studied localities (1.6 – 1.8 million VND/ton of milk in Hanoi, Ha-Tay, Son-La and 0.6 -1.0 million VND/ton of milk in Vinh-Phuc). The pure income of milk producing agents per a product unit (ton of milk) has a great difference, The pure income of dairy cow breeding households in Vinh-Phuc is the lowest (0.7 million VND/household/month) because of their low milk productivity.

The milk collecting agents are intermediate and play an important role in joining the producing and processing agents in commodity market.. The added values of collecting agents reach 0.32 million VND/ton of milk, but their monthly pure income is the biggest – 12.1 million VND/month/base. At the study time, it seemed that the responsibility of these agents for dairy cow breeders was too weak when considering interests they obtained from milk collecting activities. Besides, milk processing plants provided quite low prices of milk purchasing from collecting points (averagely 4,050 VND/kg of milk). Therefore, it is necessary to create a competition between farmers for the milk purchasing prices, when the State put higher tax on pre-processed milk importation.

In general, all actual activities of milk production and processing in our country are faced with determined restrictions because of many reasons, main factors of which are institution and market. In the whole country in general, and in North Vietnam in particular, the dairy cow husbandry is mainly spontaneous, on small scale with bad breed quality and strongly

varying prices of cow breed and milk. Milk collecting and processing activities at several localities still have exclusive rights.

It is obvious that the spontaneous development and the lack of long-term planning of the Government with respect to agents of milk commodity chain, especially to dairy cow breeding households, caused a crisis of dairy cow husbandry in 2004-2005 and in early 2006. Although actually in the provinces of North Vietnam in particular, and in the whole country in general, there is a sign of restoration of dairy cow herd because of the high increase of milk price, there is still the latency and risk of the unsustainable development of milk commodity chain.

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