



The Economics of Milk Production in Hanoi, Vietnam, with Particular Emphasis on Small-scale Producers

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EXECUTIVE SUMMARY

Introduction

The main purpose of this study was to gain insight into the household and farm economics of small-scale dairy farms in Hanoi, and to obtain estimates of the costs of milk production so as to gauge their potential for improvement, particularly through policy action, and vulnerability to international competition in a more closely interconnected world market. In order to ascertain possible developments in the dairy sector and to broadly identify areas of intervention that favour small-scale dairy producers, the study examines the potential to improve milk production of different farm types. A case study approach is used, the aim being to obtain qualitative insights rather than quantitative extrapolation.

Methodology

The methodology applied for the economic analysis was developed by the International Farm Comparison Network (IFCN) and utilises the concept of typical farms. Farm types are determined by regional dairy experts which take into consideration (a) location of the farm, (b) farm size in terms of dairy herd size and (c) the production systems that make important contributions to milk production in the study region. Three farm types were selected for this study. The first type represents the common small-size farms (2 cows); the second category (4 cows) was chosen to represent the farm size that is closest to the statistical average, and finally, a third farm type was defined to represent larger and more progressive dairy farms (5 cows), allowing further exploration of potentials for economies of size in the region. Management levels on the typical farms are average to slightly above average compared to other farms of the same type. Data was collected using a standard questionnaire and a computer simulation model, TIPI-CAL (Technology Impact and Policy Impact Calculations), was used for biological and economic assessments. Furthermore, method testing exercises regarding the dairy chain and policies affecting the typical dairy farms were conducted. The methods tested are further explained in their corresponding sections and/or the annexes.

Results

Milk Production in Vietnam

Vietnam has a relatively short tradition both in milk production and consumption of dairy products. However, from 1996 to 2002, milk production increased three-fold to reach 78,450 tons. This growth over just six years is mainly attributed to a strong increase in the domestic demand of dairy products coupled with very supportive policies directed at the development of the domestic dairy sector.

The average milk yield per dairy animal increased by 35 percent over the last six years, but the largest relative increase was recorded for the number of dairy animals, which grew by 360 percent. Over 60 percent of the dairy animals are found in the North-East-South region (see the map in Annex A4), which includes Ho Chi Minh City, while the area around Hanoi accounts for about 3.5 percent of the dairy herd.

Vietnam contributes barely 0.01 percent to total world milk production although the national herd (cattle and buffaloes) amounts to nearly 75 percent of the total number of cattle in New Zealand. The average dairy cow in Vietnam yields as much milk as four cows in India, mainly due to better dairy genetics and management. Milk prices are 20 percent higher than in New Zealand and just over half of those in Germany.

Analysis of 'Typical Farms' in the Area of Hanoi, Vietnam

Based on the IFCN methodology, three farm types were identified as 'typical' and were subjected to detailed analyses. A small dairy farm, VN-2 (2 crossbred cows and 0.47 ha of land, planting Maize as cash crop), a medium-size farm, VN-4 (4 crossbred cows and 0.43 ha land with no cash crops), and a 'progressive' farm, VN-5 (5 crossbred cows and 0.36 ha land with no cash crops), which represents the more commercially-managed dairy systems in the area. The selected farm types closely match the 2001 national statistics on farm structures, which show that about 98 percent of the dairy farms held 5 or less cows.

Dairy production systems

Despite the importations of purebred dairy animals, crossbred dairy animals represent the vast majority of the dairy cows. The popular breeds for crossing are Holstein Frisian, Red Sindhi and the Yellow Cattle.

The farms are managed by the farm family. Feeding practices are very diverse. However, the farms usually use public land (1) to cut-and-carry grass to the stall-tied animals, (2) to graze cattle in the (peak natural grasses) growing season, and (3) to tie animals under trees along the Red River during the hottest hours of the summer days. Farms VN-2 and VN-4 grow Elephant grass on rented land while VN-5 relies on natural grasses. Feed rations are primarily based on agricultural by-products such as rice bran, broken rice, grasses, rice straw, and maize leaves.

Protein and commercial mix feeds are also used differently among the farm types. While the two smaller farms use a commercial feed mix, the larger farm relies on soybean and by-products from the beer industry. All farms feed mineral mixes and pulse meals when available.

Household comparison

Farm families have between 4 and 6 members, which is typical in the region. Family labour utilisation in off-farm activities increases with farm size.

Total annual household incomes range from 1,570 to 5,350 US\$. Non-cash benefits are more relevant for the smaller farms (over 13 percent of VN-2 total income). Net cash farm incomes account for 83 to 58 percent of the household incomes for farms VN-2 and VN-5 respectively. All farms are able to cover the family living expenses and make a profit.

Whole farm comparison

Farm returns range from 2,700 to 7,200 US\$ per year. Interestingly, the small farm is the only one having cash crops. The net cash farm income closely follows the farm returns and varies from 1,135 to 2,785 US\$/year. All farms have high profit margins of 38 to 42 percent.

Comparison of the dairy enterprise - Costs of milk production

Cost of milk production varies from 11.5 to 17.0 US\$ per 100 kg ECM. The average-size farm, VN-4, has the lowest costs (11.5 US\$), which is mainly due to lower labour costs for family labour and lower costs for means of production.

The returns per 100 kg milk range from 27 to 39 US\$. Differences in milk returns can be explained by price differences with the large farm selling directly to a milk processing company.

The results indicate that expanding VN-2 to VN-4 may decrease milk production costs by 2 US\$/100 kg ECM, if conditions do not change. The potential effects of economies of scale seem to be determined by land and labour cost components.

Dairy Chain in Hanoi

Between 90 and 95 percent of the milk marketed in the region of Hanoi is captured by the formal sector, which basically consists of two large processors, Vinamilk and Hanoi Milk. Despite the dominance of the formal sector, an informal sector, which consists of small milk shops, does exist. These shops market 5 to 10 percent of the region's fresh milk volume and sell either directly to consumers or to retailers, both within the city of Hanoi.

Producer milk prices are similar in both sectors (0.197 US\$/kg). However, the consumer price is almost 1.5 times higher in the formal sector, which pasteurises, adds sugar, packs and distributes its fluid milk products. The margins in processing and retailing are 0.43 and 0.24 US\$/kg milk for the formal and informal channels respectively.

PAM Results for the Three Dairy Farm Types

The PAM results show that at market prices the studied farm types are highly profitable for their owners (3.0 to 9.5 US\$/100 kg milk), while applying social prices they barely break even, with the small farm even operating at a social loss. The larger farms make the biggest private profit, do not incur a social loss, and capture the highest level of public support. On the other hand, the larger farms' profits are reduced by taxes on inputs (feeds).

A set of PAM ratios shows that farm outputs are supported and inputs are taxed by 21.5 and 20.0 percent respectively. The net result is that all farms benefit significantly from current policies and market conditions and about 24 percent of the private returns of the farms come from external support. Public support (private profits minus social profits) for the farms ranges from 6.0 US\$/100 kg milk for the smallest to 9.5 US\$/100 kg milk to the largest farm.

The high level of support is a clear indicator of a high degree of imperfection in the Vietnamese dairy market. Consequently, there should be potential for increasing production and competitiveness through policy measures.

Conclusions

Several key conclusions can be drawn from this study:

1. In the last decade, the Vietnamese economy has achieved remarkable growth. The dairy sector tripled its output in the period between 1996 and 2002. Driving the growth of the dairy sector are an increasingly strong demand for dairy products (from a growing population and increasing per capita purchasing power) and a very supportive set of development policies affecting stakeholders throughout the dairy chain (producer-consumer).
2. This study identifies substantial potential on both the demand and production side for the sector to continue its fast development. On the demand side, Vietnamese consumers pay as high prices (0.63 US\$/lt.) for fluid milk as European consumers pay for similar products. More affordable dairy products in Viet Nam are very likely to further boost per capita consumption, contributing to a healthier workforce. On the production side, the government, through its diversification strategy, has supported dairy farming to great extent. This study finds that Vietnamese dairy farms belong to both (a) the world's low cost milk producers (<18 US\$/100kg ECM) and (b) and to the world's most profitable dairy farms (2 to 9 US\$/100kg ECM entrepreneurial profits) (See, IFCN Dairy Report 2004).
3. The strong profitability of Vietnamese dairy farms however relies heavily on national public support. This study's preliminary PAM results show that for the 2 to 9 US\$ entrepreneurial profits, these dairy farms receive public support of 6 to 9 US\$/100 kg ECM milk produced. This support reaches the farms through two main channels: (a) farm output prices (e.g. milk and beef) are kept above world market prices and (b) domestic farm inputs (e.g. capital and labour) are purposely kept low.

4. The study identifies the need of policies to create conditions, which promote farm productivity and dairy chain efficiency, to allow the dairy sector to become nationally and internationally competitive. As starting points, policymakers should look at issues such as land ownership and import tariffs with an emphasis on farm inputs such as machinery, veterinary medicine and feedstuffs, which may boost farm productivity through intensification.

Pro-Poor Livestock Policy Initiative (PPLPI)

Website: <http://www.fao.org/ag/pplpi.html>

Working Paper: <http://www.fao.org/ag/againfo/projects/en/pplpi/docarc/wp33.pdf>