DEVELOPMENT OF DAIRY PRODUCTION IN VIETNAM Smallholder Farming and Large Scale Investments

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Summary : In Vietnam, the demand for dairy products is booming. However, until very recently, the domestic production had not been significant. In 2000, imports of dairy products accounted for 95 % of consumption. To reduce this dependency on imports, the Vietnamese government launched in 2001 a National Dairy Development Program focused on supporting smallholders. In ten years, the number of dairy cows increased from 35.000 to 130.000, mainly raised in small household dairy farms. Despite those positive results, however, the domestic production has still been insufficient to meet the growing demand. In 2009, the government launched a new livestock development strategy to support large scale dairy farms. And corporate dairy companies developed a significant number of large-scale industrial dairy farms. The emergence of mega-farms questions the future of the milk sector in Vietnam. Some preliminary indicators are given to evaluate the economic, social and environmental sustainability of those farms. The future of the dairy sector in Vietnam will be driven by the capacity of those farms to cope with their environment in the surrounding territories.

New Economic Context Explains the Dairy Sector Growth

Growth of milk consumption : demographic and urban transition

In Vietnam, milk is not a traditional food and it has not been commonly produced until recently. During the XXth century, the milk consumption level was very low and mainly restricted to small quantities of imported dairy products. Those imports nearly stopped in the beginning of the 1980s, falling down at 1 kg of milk equivalent per capita and per year in 1983. Due to urbanization and economic development, the milk consumption started to increase significantly in the beginning of the 1990s. Between 1990 and 2000, milk consumption per capita jumped from 1.4kg to 8.4 kg of milk equivalent (FAO, 2014). Dairy farming, however, remained mainly limited to some State Farms. In order to meet demand, Vietnam imported massive quantities of milk powder. Multinational companies (such as Nestlé, Friesland Campina, 3A, Mead Johnson, Abbott, Similac) penetrated the Vietnamese market for milk powder. In 2000, Milk powder imports accounted for 122 million US dollars. This trend remained the same in the 2000s, since Vietnam had a young population and since the country encountered a very rapid economic growth and urban development. However, in the beginning of the 2000s, there was a shift in the dairy sector policies: the Government decided to develop the domestic milk production on a private basis.

Milk shelves in Ho Chi Minh city



A « white revolution » in Vietnam ? impact of national policies

In October 2001, Vietnamese government sets up the National Dairy Development Program (NDDP) 2001-2010. The NDDP aimed at increasing milk production in small family farms. During this period, dairy production was seen as a tool for reducing poverty in rural and periburan areas. Between 2001 and 2006, milk production increased quickly. However, only 9 provinces succeeded to implement NDDP policy, which resulted in the emergence of a limited number of districts specialized in dairy. In 2005, the Government approved a Dairy Industry master plan 2010 vision 2020. The main goal of this master plan aimed at reaching 40% of milk self-sufficiency in 2010. In 2008, the decision





Graphic n°1: Supply versus production



Milk bar in Ba Vi district



of the prime ministry to support the 2020 livestock strategy gave a new direction for dairy industry development towards more intensive and industrialized farms. Between 1999 and 2010, the national milk production increased from 70.000 to 329.000 tones (Faostat, 201; FCV, 2011). This development mainly relied on smallholder milk production. In 2010, around 95% of the milk production units were smallholders. According to a partial herd count, only 9,3% of the dairy cattle flock belonged to farms with more than 20 cows in 2010 (FCV, 2011). Two types of private milk farms co-exist now in Vietnam: households farms in a limited number of districts specialized in dairy production (map n°1), and mega-farms located in areas where large private investments were possible (map n°2). These "differentiated" profiles of the dairy sector raise many questions in terms of sustainability.





The Scaling Up of Dairy Production in Vietnam

Map n°1 : Dairy production by district in 2011



Small Scale Dairy Territories since the late XXe century : a pathway between communism and market economy

According the 2011 agricultural census, the national production of fresh milk was estimated at 320.000 tons per year. 37.000 dairy households were recorded for 140.000 dairy cows. Around 65% of the national dairy herd was in production (milking cows). The average production for a cow was 10 liters per day. And the average farm owned 2 cows and 1.7 calves. The biggest dairy household farm is located near Saigon with 150 dairy cows. Among 708 districts throughout the country, only 14 have more than 1000 dairy cows. Those 9 districts account for 70% of the national fresh milk production. The South of Vietnam gathers 2/3 of national production and 1/3for the north of Vietnam.

Dairy farmer with her dairy cows in Ba Vi district



Map n°2 : Large scale farms by district in 2014



New investments in mega-farms a national strategy for future ?

Since 2008, new types of dairy farm have appeared in Vietnam. Those farms concentrate from several hundreds to thousands of dairy cows in single location. The Vietnam Dairy Product Joint-Stock Company (Vinamilk), who is the leader in the Vietnamese dairy sector with a revenue of 1.5 billion US\$ in 2013, invested 38 million US\$ since 2007 to build 5 large farms. Those "mega-farms" are located in Tuyen Quang, Thanh Hoa, Nghe An, Binh Dinh and Lam Dong. Each of them has between 1.000 and 3.000 dairy cows. With a total herd of 8.818 cows, those 5 farms produce 24.500 tons per year (or 90 tons/day). The Company has also associated with thousands of households to be supplied 460 tons of milk per day. Totally, only 16% of the fresh milk processed by the company comes from the 5 megafarms. The Company plans to invest in three farms. One of them, located in Thanh Hóa province, is expected to reach 25.000 heads by 2016 (Vinamilk, 2014).

The district of Cu Chi (located in the north west of Saigon) produces 30% of national fresh milk. Before 1999, Ho Chi Minh province accounted for 80% of the national milk production. In the north of Vietnam, the three main dairy production areas (Moc Chau, Ba Vi, Gia Lam) were districts where former State Farms were set up during the collectivist period (1950s to 1980s). Since then, the State farms have been privatized, and a new development dynamic took place in those districts since 2000, based on the development of smallholder farmers. Today, this small-scale production sector is changing progressively towards more intensive and specialized production systems (Hostiou et al., 2012).



Milk-shed in Moc Chau large scale farm



TH Milk Food Joint Stock Co., another major dairy industry in Vietnam, was launched in December 2010. It is a large scale private investment project of 350 million US\$ for its first phase (1,2 billion US\$ for the total investment plan), devoted to set up an important dairy farming and processing industry in the central province of Nghe An. In the beginning of 2014, it is the largest farms in the country with more than 30.000 dairy cows. Technically supported by Afimilk, an Israeli company, TH Milk Group also owns a processing factory that has a capacity to process 200.000 tons of milk per year.

Three Questions about Sustainability for the Future of the Dairy Sector in Vietnam

Economical Efficiency

Dependancy from outside a rational economic model?

The economic efficiency of the megafarms is often considered to be higher than the one of small-scale farms. In the US, 40% of the milk is produced by farms of more than 2000 cows, and their cost of production is on average lower



Social Equity Peasant question in Vietnam dairy sector, Who wins ? Who loses ?

Dairy farmer milking

The average size of agricultural household farms in Vietnam is 0.67 ha of annual crops land (GSO, 2012), and most of the dairy farms do not have access to more than 1 ha. However, some dairy companies manage to access large pieces of land. TH milk farm, for example, has developed its activities on 8,100 hectares in the Nghia Dan District and is planning to work on 37.000 ha in the second phase, aiming at a reaching 137.000 dairy cows in 2017 (TH, 2013). Those farms offer many jobs for non-skilled workers who get paid around \$ 100 per month. In comparison, a Farmworker in TH Milk farm household dairy farm earns an average of \$300 per month in the North (Lairez, 2012). Officially TH milk farm employs 2000 workers on the farm and processing unit for 30.000 cows. This is equivalent to 1 active worker for 13 cows, which is 7 times less than in smallholder farms (Hostiou et al., 2012). Family farming is therefore much more work intensive.



Environmental justice when dairy production stress local territories

Water tanks in one mega-farm

The concentration of dairy cows requires strict rules of environmental management. Mega- 🎆 farms have to face two problems for local people in the area: water consumption and manure management. The amount of water required



than cost of production of farms with less than 500 cows (Woodforth, 2013). However, there is no evidence that in the context of Vietnam, were the cost of labour is much lower, largescale farms will be more efficient that small ones. Some preliminary surveys conducted in Ba Vi show that smallhoder mixed crop-livestock dairy farmers generate a higher added value per cow and per hectare than the industrial farm (Lairez, 2012). Moreover, since industrial dairy farms are generally less self-sufficient in fodder, they are more sensitive to feed prices volatility. In addition, economic efficiency might also be considered at the national level, taking into account the need for importing feeds and its impact on those imports on the balance of trade.

for the maintenance of dairy cows is huge: 500 liters/cow per day in the dry season (Future milk farm, personal communication). Large farms use surface waters and groundwater and might cause problem of water availability in the dry season.

Waste manure in one mega-farm

Manure management is also a big issue for large farm. Environmental regulations are not always sufficient to prevent the environment of megafarms from pollution. In many locations, residents complain about odors and pollution of surface and ground waters. Efficient effluent treatment systems must be further developed (for example for biogas production and effluent treatment to produce manure).



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