

Agribusiness

Vietnam has significant potential in agribusiness in domestic and export markets. However, unlike the apparel and leather sectors, the agribusiness sector lags far behind regional competitors. The main reasons for this deficient performance include the poor quality of inputs and low labor productivity. The key challenges in the agricultural input and output markets are the limitations in commercial farming, the weak financial capacity of the many small companies, the lack of access to information among producers, the absence of agro-processing clusters, poor sanitary conditions, poor packaging, and the need for the greater availability and use of veterinary care. To address the problems and constraints, commercial farming should be facilitated; contract farming should be encouraged; clusters should be formed more quickly; training services for food production under hygienic conditions should be enhanced; the packaging industry should be promoted; and sectoral associations should be strengthened.

Description of the Sector

Agriculture is the mainstay of the Vietnamese economy. Rice is the principal crop and is grown over a large portion of the cultivable land in the country. Other crops include sweet potatoes, sorghum, corn, cassava, fruits, vegetables, and beans. Of the total land in northern Vietnam, only 15 percent is suitable for cultivation, of which nearly 14 percent has been cultivated intensively. As demonstrated by the success of the rice and coffee industries, Vietnam has substantial potential in agribusiness in domestic and export markets.

In the world market, China has become a major player in the agribusiness sector, with total production exceeding a value of \$990 billion. In both China and Vietnam, the sector is dominated by small and medium enterprises (SMEs) (94 percent in Vietnam and over 75 percent in China), and there are relatively few large companies. In Vietnam, the sector employs fewer than 500,000 workers, compared with nearly 10 million in China (table 8.1).

Table 8.1 The Agribusiness Sector, China and Vietnam, 2010

<i>Indicator</i>	<i>China</i>	<i>Vietnam</i>
Total imports, \$, 1,000s	6,596	25,360
Total exports, \$, 1,000s	96,003	15,848
Companies, total	12,903	5,979
Small, %	35.0	45.4
Medium, %	40.0	48.7
Large, %	25.0	5.9
Workforce		
Total (estimate)	9,956,316	451,360
Share of total labor force, %	1.2	1.0
Men, %	73	45
Women, %	27	55

Sources: GDS 2011; UN Comtrade (United Nations Commodity Trade Statistics Database), Statistics Division, Department of Economic and Social Affairs, United Nations, New York, <http://comtrade.un.org/db/>.

The industry needs to address several important issues to achieve greater, more sustainable productivity in the context of the trend toward more liberalization and deeper trade integration. Unlike the apparel and leather sectors, agribusiness in Vietnam lags far behind regional competitors. The main reasons for this poor performance include low productivity, the low quality of inputs, high costs, and especially, the weakness of processing industries. These are huge challenges for the country's agribusiness producers.

Wheat Milling

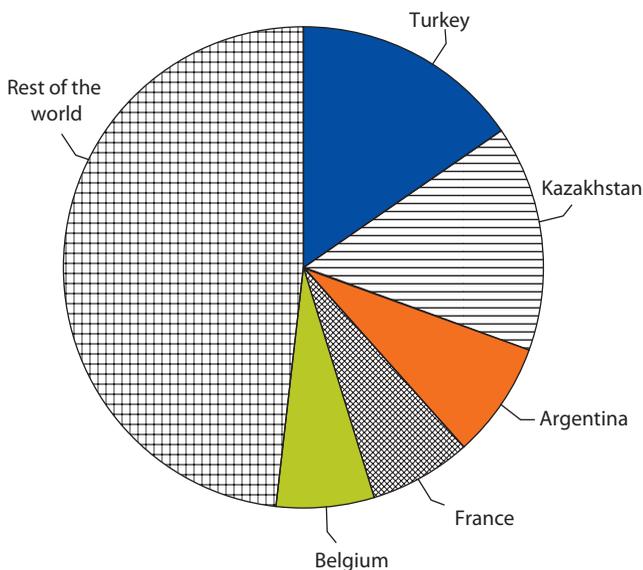
Agribusiness is a broad sector with numerous branches and many products within each branch.

In wheat flour, Turkey was the top exporter in 2009, at \$581 million in export value. China exported \$96 million in wheat flour (figure 8.1).

The cost of milling wheat in Vietnam was \$359–\$463 per ton in 2010, which is close to or above the cost in China (\$322–\$377). The main reason for the difference is the price of wheat, the type of wheat used (hard versus soft), the period when the wheat is sourced (because prices fluctuate widely in local and international markets), and the origin and mix of the wheat used (local versus imported). Because wheat accounts for more than 80 percent of the cost of wheat flour, the higher price of the wheat explains most of the higher wheat flour production costs in Vietnam. The price of domestic wheat is 40 percent higher in Vietnam than in China (table 8.2). Our analysis of wheat is based on 10 firms in China and 9 firms in Vietnam.

The reference year in our analysis, 2010, was exceptional in world wheat markets. Because of weather conditions, mainly in the Russian Federation (and, to a degree, in Canada), wheat prices in international markets soared more than 40 percent between July and August, the highest monthly increase in more than 50 years. International wheat prices continued to shift later in 2010, albeit the rate of change was not as high as the July–August spike. The variations in the

Figure 8.1 Leading Exporters of Wheat or Meslin Flour Products, Worldwide, 2009



Source: GDS 2011.

Note: The world aggregation represents the sum of reporting and nonreporting countries. Meslin is mixed grain, especially rye mixed with wheat.

Table 8.2 Raw Material Input Comparison, Wheat Flour, China and Vietnam, 2010

Indicator	China		Vietnam	
	Total cost	% of total input	Total cost	% of total input
Raw materials, per ton of wheat flour	\$322	n.a.	\$323	n.a.
Domestic wheat, per ton	\$192	60.0	\$269	73.7
Imported wheat, per ton	none	none	\$208	n.a.
Raw material inputs, % of value chain	85	n.a.	81	n.a.

Source: GDS 2011.

Note: n.a. = not applicable.

prices of the raw materials (wheat) presented in this analysis should thus be considered in the context of this extreme price volatility during 2010.

In both China and Vietnam, agribusiness is the focus of a wide array of tariffs. In China, there are more than 722 tariffs in the sector, and the average rate is 15 percent. In Vietnam, there are more than 40,773 tariff lines in the fast and normal tracks of the common effective preferential tariff scheme, which, at an average rate, has been as low as 2.3 percent. China has a relatively high tax rate, ranging from 10 percent for fish to 20 percent for maize, as well as a value added tax of 17 percent. In Vietnam, the average value added tax is 10 percent. Although there are a range of taxes and levies imposed on agribusiness in China, there are also tax refunds that run from 8 percent for rice to 15 percent for maize; the average tax refund is 16 percent. Producers in Vietnam do not enjoy such refunds.

Dairy Products

The demand for milk is increasing in Vietnam, but there is a wide gap between this demand and the nation's milk production capacity. Vietnam still has to import around three-quarters of its dairy needs. This is partly because milk production per cow in Vietnam lags behind that in more industrialized nations. The approximately 115,000 cows in Vietnam yield 280,000 tons of milk a year. The population of the country was 86 million people in 2010. Vietnam's yearly per capita milk consumption is thus estimated at around 15 kilograms, compared with the Asian average of 35. The global annual consumption of milk was around 82.1 kilograms a person in 2005 (FAO 2009). This highlights the potential market for dairy producers in Vietnam.

In Vietnam, the average dairy farm operation profiled in our analysis was medium in size and had fewer than 200 animals (table 8.3). This differs from China, where the dairy farms profiled for our study have hundreds of cows. This difference is evident in indicators of the value of production, exports, number of firms, number of employees, and so on.

The cost of producing milk in Vietnam ranges from \$0.15 to \$0.29 a liter (table 8.4). This is competitive with production in China, where the cost ranges from \$0.23 to \$0.28. Perhaps the most notable difference between the two countries is the average yield per milking cow. With proper animal husbandry, cows in China produce at a rate of 20 liters per cow per day, while, in Vietnam, the yield rates generally range from 4.2 to 15.9 liters.

Globally, dairy products worth \$51 billion were exported in 2009. Germany, France, the Netherlands, and New Zealand were the leading exporters, at more than \$5 billion each (figure 8.2). China is a major producer of dairy products, and the country is facing a rapid shift in dietary habits, especially among urban consumers. This shift is reflected in steady growth in the dairy industry, which now produces dairy products worth more than \$29 billion. The number of consumers of these products is expected to increase 50 percent over the next seven years, and overall global demand for

Table 8.3 The Dairy Industry, China and Vietnam, 2010

<i>Indicator</i>	<i>China</i>	<i>Vietnam</i>
Production, total value, \$	29,450,322,733	530,225,356
Imports, total value, \$	892,667,190	539,780,000
Exports, total value, \$	51,402,368	156,700,000
Companies, total	12,903	1,670
Small, %	35.0	43.4
Medium, %	40.0	55.1
Large, %	25.0	1.5
Workers, total (estimate)	9,956,316	54,794
Men, %	73.0	75.5
Women, %	27.0	24.5

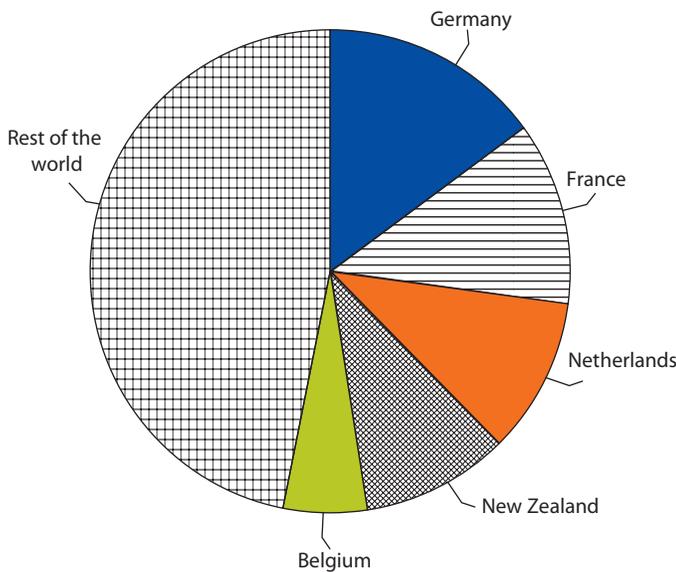
Source: GDS 2011.

Table 8.4 Average Cost of Milk Production, Selected Countries, 2010
US\$ per liter

<i>Economy</i>	<i>Average cost</i>
New Zealand	0.13
Australia	0.16
India	0.19
Vietnam	0.22
China	0.25
United States	0.27
European Union	0.29
Tanzania	0.42
Ethiopia	0.47
Zambia	0.52

Source: GDS 2011.

Figure 8.2 Leading Exporters, Dairy Products, Worldwide, 2009



Source: GDS 2011.

Note: The world aggregation represents the sum of reporting and nonreporting countries.

dairy products in developing countries is expected to rise about 1.2 percent each year (FAO 2009). This surging demand is opening the door to an expansion in exports.

According to the Ministry of Industry and Trade, despite substantial growth in agribusiness, Vietnam continues to import significant amounts of food and farm products. Its main sources of the imports of these products are India (16 percent), the United States (13 percent), and China (11 percent). Under the Association of Southeast Asian Nations–China Free Trade Agreement

and the common effective preferential tariff, the commitments among the association countries have led to less expensive imports; import tariffs are 0–5 percent. These results are favorable for consumers. Nonetheless, there is a concern that the country will need to reduce its reliance on imported food and agricultural products through the more stringent application of technical and quality specifications.

The Potential

Wheat Milling

The potential of the wheat milling industry in Vietnam stems from the following:

- Because of low wages, the cost to mill wheat (excluding the cost of the wheat) is half as much in Vietnam relative to China. Skilled and unskilled labor wages are, on average, one and half times lower in Vietnam.
- The climatic and soil conditions are good in some areas.
- Domestic demand is rising, and Vietnam's access to the global market is widening.

Dairy Products

The labor productivity rate in dairy farming in Vietnam is low, at 2.5–3.9 liters of output per person per day, compared with 23.5–53.1 liters per person per day in China. In addition, most of the equipment used in dairy farming is much older in Vietnam (5.5–8.0 years) than in China (2.5–4.0 years) (table 8.5).

The Main Constraints on Competitiveness

Wheat Milling

Vietnam faces several challenges in the production of wheat:

- Shortages of high-yielding seeds and agricultural inputs
- Lack of irrigated farming
- Entry barriers for large commercial farms, including land policy issues
- Lack of appropriate storage infrastructure
- Absence of market mechanisms to encourage stable, predictable prices
- Lack of working capital among wholesalers

The distribution of costs along the value chain differs in China and Vietnam. In China, handling and storage, as well as transport and delivery (to the buyer), account for nearly 10 percent of the value chain. In Vietnam, however, milling and packing account for nearly 10 percent of the value chain, while administrative overhead accounts for 6 percent (figure 8.3).

Several key factors affect the competitiveness of the milling subsector, particularly wheat milling. Thus, in Vietnam, the mills tend to be large, centralized

Table 8.5 Benchmarking Key Production Variables, Dairy Farming, China and Vietnam, 2010

<i>Indicator</i>	<i>China</i>	<i>Vietnam</i>
Factory		
Male-to-female worker ratio	6.5–52.3	—
Average yield rate per milking day, liters per cow	20.0–20.5	4.2–15.9
Labor absenteeism rate, %	—	0–1
Average monthly salary or wage		
Skilled, \$	177–206	—
Unskilled, \$	118–133	31–78
Days of operation per month		
	30	21–30
Average age of major equipment, years		
	2.5–4.0	5.5–8.0
Exported output, finished primary product, %		
Direct export without consolidators or brokers	0	0
Indirect export through local consolidators	0	0
Indirect export through overseas consolidators	0	0
Domestically sold output, finished primary product		
Direct sales to wholesalers and retailers without consolidators, %	100	0–100
Direct sales through own outlets, shops, or showrooms, %	0	0–100
Indirect sales through local consolidators or traders, %	0	0
Unit production cost, \$ per liter	0.23–0.28	0.08–0.29
Average selling price, \$		
Factory gate	0.27–0.32	0.38–0.39
Wholesale	0.27–0.32	0.36–0.37

Source: GDS 2011.

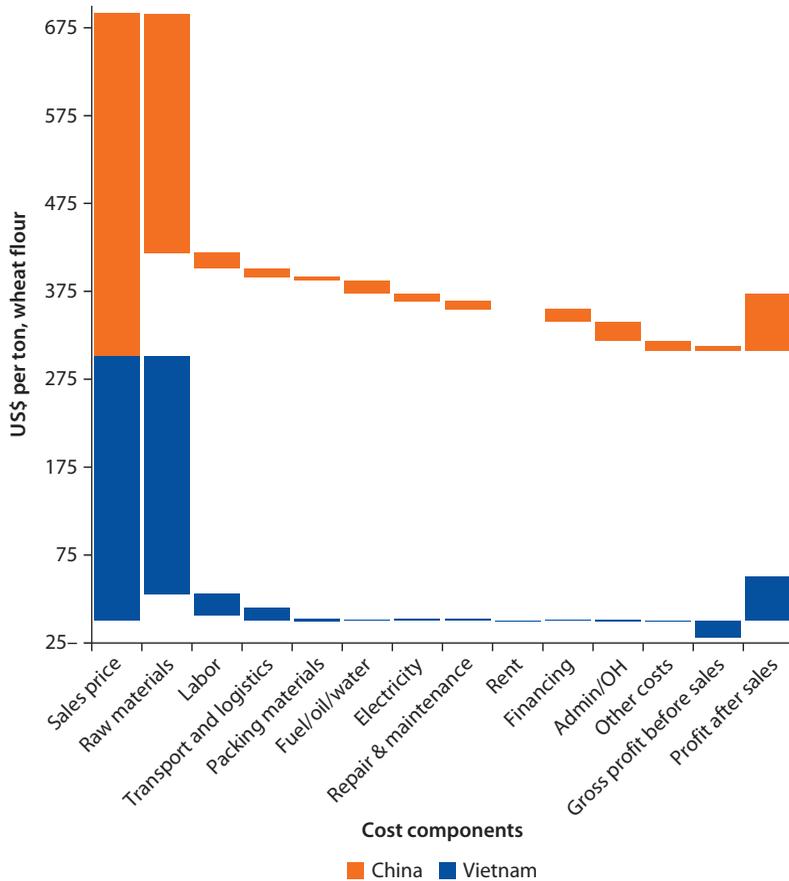
Note: — = not available.

(installed output capacity of 21–700 tons a day), and underused; in China, the mills tend to be smaller (installed output capacity of 15–30 tons a day), decentralized, and located closer to the source of wheat production. Partly as a consequence of the operation of large centralized mills, capacity use in Vietnam is as low as 80 percent in some mills; in China, capacity use is 95–100 percent.

The cost of raw materials (the wheat) generally makes up the largest share of the wheat milling value chain. Raw material inputs account for 85 percent of the overall value chain in China, while, in Vietnam, wheat accounts for 81 percent of the value chain (see table 8.2). However, in Vietnam, the price of imported wheat is lower (by as much as 29 percent) than the price of the wheat produced locally, raising concerns about the efficiency of Vietnam's farming operations and about the differences between the two countries in the incentive structures that affect the cost of agricultural inputs.

Because various parts of Vietnam are characterized by different opportunities and constraints, farmers face unique challenges depending on the region and the crop. The main constraint is the high cost of agricultural inputs. The average cost of wheat processing per ton—excluding the cost of wheat grain and

Figure 8.3 Cost of Key Production and Margin Items, Wheat, China and Vietnam, 2010



Source: GDS 2011.
 Note: Admin/OH = administration/overhead.

packaging—is \$89.49, about 62 percent more expensive than in China. This is reflected in the total production cost, as well as in the selling price. Despite low labor costs, total production costs per ton in Vietnam reach as high as \$463, compared with \$377 in China, implying that wheat grain prices are high in Vietnam. Consequently, the average selling price of wheat flour is 53 percent higher in Vietnam than in China. Vietnam’s yield rate is about 4 tons a hectare, while China’s can reach 6 tons a hectare.

The cost of producing wheat flour, including the processing costs for other by-products, ranges from \$359 to \$463 a ton in Vietnam, an average of 18 percent higher than the cost in China, where the cost ranges from \$322 to \$377 a ton. Perhaps the most surprising labor-related benchmark is the relatively high labor absenteeism rate reported at mills in Vietnam (3–14 percent). In China, the absenteeism rate is only 1–5 percent.

The ability to process and sell wheat by-products such as bran and germ, in addition to the wheat flour, is vital in the overall economics of a mill. Wheat flour production costs are higher than the average selling price of wheat flour. For this reason, millers recuperate a significant portion of milling costs by processing and selling by-products. In our analysis, the selling price of flour therefore does not include the proceeds from sales of bran and other by-products. In both China and Vietnam, by-products are highly valued thanks to a well-developed value added food processing and animal feed industry. Millers are able to fetch \$230–\$259 a ton for bran, the most abundant by-product of wheat milling.

In China, wheat flour sells for roughly 30 percent more than wheat; in Vietnam, the corresponding price difference is nearly 40 percent. Vietnamese flour prices are noncompetitive not only because the wheat prices are higher, but also because local millers pass on a large share of the already pricy wheat to the price of flour because of their inability to obtain favorable prices for bran and other wheat by-products.

Fuel and oil use is also significant in Vietnam, ranging from 0.02 to 1.11 liters per ton of milled wheat, which is 28 percent higher than the use rate in China. The milling equipment used in Vietnam requires about twice as much electricity as the milling equipment used in China. This is much more modest than the enormously excessive use of electricity in other areas of light manufacturing production in Vietnam. Indeed, because of the lower utility prices in Vietnam, electricity bills among millers in China and Vietnam are comparable.

Because of the high cost of milling in Vietnam and despite the lower cost of labor there, the average wheat processing costs in Vietnam, excluding the cost of wheat grain and packaging, is \$89 a ton, 62 percent higher than the cost in China (\$55 a ton).

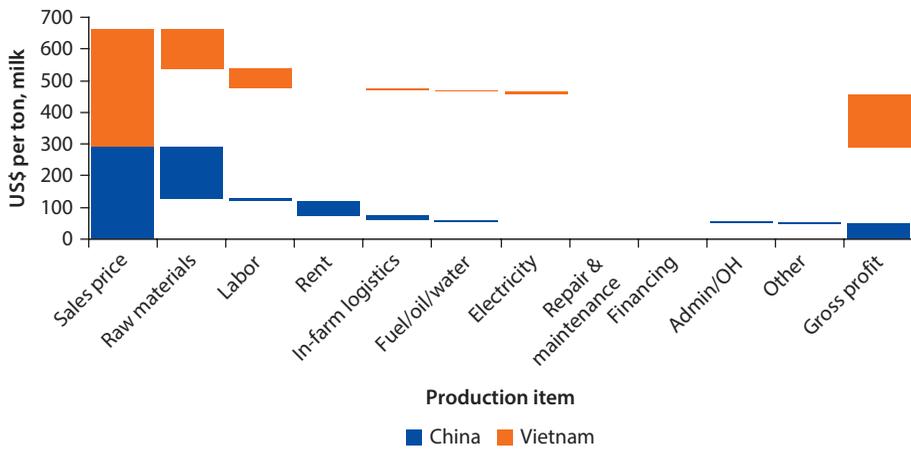
Meanwhile, in Vietnam, unmilled wheat flour is less expensive and exhibits lower rejection rates. If the costs involved in milling can be reduced, then it will surely be possible to improve the country's competitiveness relative to China.

Dairy Products

Dairy cattle production represents a new farming system in Vietnam. Dairy farmers thus lack knowledge of the management practices they require to obtain a profitable and sustainable level of production. In addition to the price of milk, production costs are important for the economic viability of a dairy farm. The most significant input costs are feed (30–70 percent of expenses) and the purchase of animals (figure 8.4). The lack of knowledge about animal husbandry and veterinary care has also hindered the development of an economically sustainable dairy industry, given that disease and poor practices can greatly diminish the financial returns on a small dairy operation. While labor costs are low per unit in Vietnam, total labor costs are higher because of the lower productivity.

Unlike other subsectors, the cost of electricity in dairy production is higher among Vietnamese firms (\$6.87–\$9.14 per 1,000 liters) than among Chinese firms (\$0.67–\$0.78 per 1,000 liters). This suggests that the milk plants surveyed in Vietnam are household businesses and are therefore

Figure 8.4 Cost of Key Production and Margin Items, Dairy Farming, China and Vietnam, 2010



Source: GDS 2011.

charged for electricity at a higher rate than firms in other light manufacturing industries. Electricity use in Vietnamese firms is also much greater, as in all other light manufacturing subsectors. While Vietnamese firms use 126–221 kilowatt hours to produce 1,000 liters of milk, Chinese firms use only 4.92–5.26 kilowatt hours.

Key Challenges in Agribusiness

Key challenges in the agricultural input and output markets in Vietnam include the following:

- The *limited scale of commercial farming* means that agricultural producers are often small and disperse. They have no shared strategy on production procedures or the use of high-yielding seeds, and this leads to difficulties in reaching agreements on product trademarks, quality, and prices. These are the main factors behind the relatively low wheat yield per hectare, which is 4 tons in Vietnam compared with 6 tons in China. There is a need for large-scale farms that raise cows and produce a stable volume of milk to supply processing factories. However, the country lacks large areas of grass to feed cattle. Even if the market is growing, it is not easy for dairy firms to increase their capacity if they depend only on local suppliers for raw materials. The introduction of modern farming techniques is difficult in a smallholder system. Limited access to land is a major constraint on the establishment of larger commercial farms.
- The small companies also have *weak financial capacity*, which is reflected in a shortage of capital to improve production technology and to raise labor productivity. In Vietnam, only 6 percent of agribusiness enterprises are large scale, compared with 25 percent in China (table 8.1).

- The *poor quality of inputs* is a constraining factor among the companies involved in processing agricultural products. The lack of good-quality inputs means the companies are also less competitive in the global market, and they are forced to compete primarily on price.
- Producers have *limited access to information* on modern science and technology and poor awareness of the global market. In countries with a developed agricultural sector, agricultural production is generally conducted by large firms, which can cut production costs by applying advanced production and harvesting technologies.
- The *low agricultural productivity and limited technology* are constraints because Vietnam feeds so many people (86 million) on the output of a relatively small amount of land suitable for agriculture. The country needs to use higher-productivity, higher-technology agriculture to meet its increasing food needs. Relative to developed economies, Vietnam's agricultural sector has been more limited in the use of high-productivity, high-technology agriculture.
- The *supply chain is broken*. Vietnam exports most of its agricultural products without processing. The country has large trade deficits in some agroprocessing industries, such as dairy products and edible oil. This means that there is a significant loss of foreign exchange, as well as the loss of potential employment and value addition.
- There are *few agroprocessing clusters*. Cluster formation is a superior means to address a number of constraints, including limited access to land, poor infrastructure, and cumbersome regulatory procedures and enforcement (see chapter 3). There are only a few agroprocessing clusters in Vietnam.
- *Sanitary conditions are poor, and the regulatory framework is cumbersome*. A large share of food products are produced by small producers in homes and backyards under poor sanitary conditions. Training services in food safety are inadequate, and the infrastructure for standards and management is weak. This burdens companies with costly, time-consuming licensing and inspection procedures in food production, distribution, import, and export.
- *Good-quality, affordable packaging materials are lacking*. Good-quality packaging at competitive prices with appropriate labeling is essential for the effective marketing of agroprocessing products. Appropriate packaging includes metal cans, plastic bottles, shrink wrap in plastic bags, and glass jars with metal closures. Small companies lack access to these forms of packaging. The government should introduce and support the use of bar codes.

- There is a *need for the greater availability and use of veterinary care*. Farmers should be provided with more education and training, and animals should be more well cared for. Focusing investment resources on improving productivity and building skills and knowledge would be beneficial for overall competitiveness.

Policy Recommendations

The following measures are recommended:

- *Facilitate commercial farming*. Establishing commercial farming in designated areas would contribute to competitiveness. Nucleus farm hubs and an out-grower scheme might include nucleus commercial farms with storage and processing facilities that are connected to nearby villages over feeder roads, as well as to power and water services. Such an initiative would require strong public-private partnerships to build the necessary infrastructure and arrange services, such as the leasing of farm machinery and equipment.
- *Encourage contract farming*. This is an option for addressing the lack of access by small farmers to agricultural inputs and services and for formalizing the relationship between smallholders and the agroprocessing industry. This arrangement should be implemented as a pilot project, and if the pilot project succeeds, wider adoption should be encouraged.
- *Speed up cluster formation*. The successful formation of clusters requires collaboration among major stakeholders, such as local governments and industry associations, in building the necessary infrastructure, establishing effective supply chain management, creating training-with-production services, and developing market links. A pilot approach would be appropriate in cluster formation.
- *Enhance the training services in food production under hygienic conditions*. Training initiatives for small agroprocessing companies already exist. A noteworthy initiative is the planned establishment of training in food processing and food processing production centers, such as those financed in Tanzania by the Korea International Cooperation Agency. Similar programs should be developed under donor-financed technical assistance organized by industry associations. Training can also be conducted through clusters.
- *Encourage the packaging industry*. An assessment should be carried out to identify the packaging needs of the agroprocessing industry, and a feasibility study should be conducted on an investment scheme in the production of packaging materials. Once this work is completed, the government should seek foreign direct investment in this important area, preferably in partnership with local entrepreneurs.

- *Strengthen industry associations.* Industry associations provide critical services to members, such as advocacy, policy dialogue, technical assistance, training on skills and standards, and market information. The government should encourage the formation of these associations and facilitate their growth.

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