## **INDUSTRY OVERVIEW**

Certain information and statistics relating to our industry provided in this section have been derived from official government sources. In addition, this section and elsewhere in the [REDACTED] contains information extracted from a report commissioned by us, or the F&S Report, prepared by Frost & Sullivan for purposes of this [REDACTED].<sup>(1)</sup> We believe that the sources of the information in this "Industry Overview" section are appropriate sources for such information, and we have taken reasonable care in extracting and reproducing such information. We have no reason to believe that such information is materially false or misleading, and no fact has been omitted that would render such information materially false or misleading. Our Directors confirm that, after taking reasonable care, they are not aware of any adverse change in market information since the date of the F&S Report which may qualify, contradict or have an adverse impact on the quality of information in this section. However, the information has not been independently verified by us, the Joint Sponsors, the Underwriters or any other party involved in the [REDACTED] and no representation is given as to its accuracy. Except as otherwise noted, all the data and forecast in this section are derived from the F&S Report.

### **ORGANIC FOOD**

#### Why Organic?

During the past decades, the use of synthetic chemicals in agricultural production was promoted to farmers as a way of enhancing productivity and increasing yield. Today, much uncertainty remains

#### **Research Methodologies**

In compiling and preparing the F&S Report, Frost & Sullivan has also adopted the following methodologies:

- A detailed primary research which involves discussing the status of the industry with leading industry participants and industry experts.
- The consumer survey on liquid milk was based on 1,200 respondents from 4 cities. Through this consumer survey, Frost & Sullivan has obtained the information in relation to consumer behavior and attitude towards liquid milk products as well as organic liquid milk products in these cities.
- A secondary research involved reviewing company reports, independent research reports and data based on Frost & Sullivan's own research database.
- Projected data was obtained from historical data analysis plotted against macroeconomic data as well as specific industry-related drivers.

#### Forecasting Bases and Assumptions

Frost & Sullivan based the F&S Report on the following bases and assumptions:

- Chinese economy is expected to maintain steady growth in the next decade;
- Chinese social, economic, and political environment is expected to remain stable in the forecast period;
- Key market drivers such as increase in per capita disposable income, rapid urbanization, low per capita consumption compared to developed countries, rising health awareness, increasing demand for high-end production, and improved distribution network are expected to boost the development of the Chinese dairy market;
- Key drivers including increasing disposable income of Chinese residents, rising health awareness among consumers and expanding consuming groups of liquid milk is likely to drive the future growth of China liquid milk market;
- The market research was completed in June 2014.

#### About Frost & Sullivan

Frost & Sullivan is an independent global consulting firm, which was founded in 1961 in New York. It offers industry research and market strategies and provides growth consulting and corporate training. Its industry coverage in China includes automotive and transportation, chemicals, materials and food, commercial aviation, consumer products, energy and power systems, environment and building technologies, healthcare, industrial automation and electronics, industrial and machinery, and technology, media and telecom, and financial services.

<sup>(1)</sup> This "Industry Overview" section contains information extracted from a commissioned report, or the F&S Report, prepared by Frost & Sullivan for purposes of this [REDACTED]. The contract sum to Frost & Sullivan is RMB1.09 million for the preparation and use of the F&S Report, and we believe that such fees reflect the market rate.

## **INDUSTRY OVERVIEW**

regarding the safety of such chemicals currently used. The use of antibiotics, synthetic hormones, and genetically modified organisms, or GMO, to intensify production in modern conventional agriculture practices also presents concerns for human and animal health. In particular, food safety has been a growing concern of Chinese consumers as result of a series of food contamination incidents in China. The organic certification standards in E.U., the United States and China primarily adopt the common principles of prohibiting the use of synthetic pesticides or fertilizers, synthetic hormones, antibiotics, GMOs and promoting animal welfare. See "— Raw Milk Production in China — Organic Raw Milk — Organic Dairy Certification" for more details about organic standards in E.U., the United States and China. These common principles also, to a certain extent, reflect the philosophy of organic production to minimize any potential harm to the environment, animals and humans and follow the natural laws of living organisms with emphasis on the interdependence of all life and the value of sustainability.

The following definitions briefly describe the concept of organic food as known today.

- "Organic agriculture"— a whole-system approach based upon a set of processes resulting in a sustainable ecosystem, safe food, good nutrition and animal welfare. It is based on minimal use of off-farm inputs and on management practices that restore, maintain and enhance ecological harmony.
- "Organic food"— food that is produced using methods of organic dairy farming, with limited modern synthetic inputs such as synthetic pesticides and fertilizers. Organic food is not processed using irradiation, industrial solvents, or transgenic technology. Antibiotics, synthetic hormones and other chemical food additives are also prohibited in the process of making organic food.

### **China's Organic Food Market**

As the organic concept emerged relatively late in China, organic food is not well penetrated in the Chinese market. Per capita expenditure on organic food in China was only US\$4 in 2013. In contrast, organic food is more widely accepted by consumers in western countries. In 2013, the per capita expenditure on organic food was US\$118, US\$102 and US\$88 in Germany, the United States and France, respectively.

The global organic food retail market increased from US\$55.0 billion in 2009 to US\$81.7 billion in 2013, with a CAGR of 10.4%. Organic food was consumed in over 160 countries in 2013. The United States and European countries such as Germany, France and the United Kingdom were the main consumption countries of organic food. With the consumers' increasing awareness of organic food globally, the global organic food retail market is likely to grow at a CAGR of 14.9% from 2013 and reach US\$163.4 billion in 2018. Organic food is expected to be more popular and become increasingly available to general consumers at that time. China's organic food market is experiencing rapid growth. The organic food retail market in China increased from US\$1.6 billion in 2009 to US\$5.3 billion in 2013, and is expected to reach US\$24.0 billion in 2018. China's share of the global organic food retail market is also expected to grow to 14.7% in 2018, compared with 2.8% in 2009 and 6.4% in 2013.

## Future trends and growth drivers

The global organic food market is likely to continue growing in the future, with key growth drivers coming from both the demand side and the supply side. On the demand side, the global organic food market has witnessed growth in recent years due to increasing consumer health awareness, which is likely to continue driving the future growth of this market. The increasing penetration of organic food is expected to enhance its popularity and availability. Widening retail distribution channels including more physical stores as well as online channels is likely to support the growth of the market. On the supply side, in 2013, over 160 countries have produced and consumed organic food. With the maturity of public policies and government regulations on organic food, more suppliers are likely to engage in organic food markets. Increased research and development efforts for new products development provides significant market opportunities for the market players, which is also likely to promote the organic food market for the demand side.

As a result of these growth drivers, the organic food market in China is expected to exhibit the following growth trends:

- *Rapid market growth.* With the increasing disposable income of Chinese consumers, as well as their increasing health consciousness, China's organic food market has grown rapidly in the past several years and is expected to continue the rapid growth in the future. More consumers are expected to consume organic food.
- Increasing availability. China's organic food market is still concentrated in large cities. Distribution channels of organic food are also limited compared to those of traditional food. In the future, with the development of distribution channels, such as online channels, organic food is expected to become available in more cities and regions of China, which will contribute to organic food market growth.
- *More product diversity.* Compared with western countries, China's organic food market still lags behind with limited product categories. The current main organic foods in China are, among others, organic milk, organic fruit and organic vegetables. Organic meat, such as beef and pork, and organic poultry are not popular in China. With the development of organic food market in China, an increasing number of products are likely to emerge to enrich the organic food portfolio.

China's organic food market has experienced a rapid growth stage from 2009 to 2013. The increasingly broad range of organic food and the rising of the living standard had driven the market growth. From 2009 to 2013, China's organic food retail market increased from RMB10.6 billion to RMB32.7 billion, with a CAGR of 32.5%, and is expected to further increase to RMB144.6 billion in 2018, representing a CAGR of 34.6% from 2013 to 2018. The following chart illustrates the consumption of organic food in China from 2009 to 2013 and the forecast from 2014 to 2018. In comparison, China's food retail market value only grew with a CAGR of 17.2% from 2009 to 2013, and is likely to expand with a CAGR of 13.8% from 2013 to 2018.



### **Organic Food Certification**

Organic certification is a certification process for producers of organic food and other organic agricultural products, including organic raw milk and dairy products. It is intended to assure quality and prevent fraud, and aimed at regulating and facilitating the sale of organic products to consumers. Certification requirements vary from country to country, and generally involve a set of production standards for growing, processing, storaging, packaging and shipping. Frequently used certification standards in China include those of the United States, Japan, E.U., and China.

## CHINA'S DAIRY INDUSTRY

Rapid growth in China's dairy industry began in the 1990s and has continued in recent years. In 2013, China's dairy products market, including UHT and fresh milk, milk powder, yogurt and other dairy products, had a total retail sales value of RMB300.4 billion and is expected to further grow at a CAGR of 11.3% to RMB513.4 billion in 2018.

## Industry Value Chain

The dairy industry supply chain in China includes the growing and processing of feed, dairy farming, and the production and sale of dairy products. An integrated and traceable supply chain is recognized as an effective solution for ensuring raw milk quality in the quality control of feed processing, milking, raw milk production and finished product transportation and storage. This is because a vertically-integrated business model can align the competing interests among different participants across critical segments of the dairy industry value chain. Set forth below is a comparison of the degree of vertical integration among major dairy companies in China.<sup>(1)</sup>

	Forage Growing	Dairy Farming and Raw Milk Supply	Dairy Products Market
Shengmu <sup>(2)</sup>	✓	✓	✓
Huishan Group	$\checkmark$	$\checkmark$	$\checkmark$
Bright		$\checkmark$	$\checkmark$
Modern Dairy		$\checkmark$	$\checkmark$
New Hope		$\checkmark$	$\checkmark$
Weigang		~	~
YuanShengTai		$\checkmark$	
Mengniu Group			~
Yili Group <sup>(2)</sup>			$\checkmark$
Sanyuan			$\checkmark$
Wondersun			$\checkmark$

(1) "✓" indicates that this participant had more than half of its forage supplied by the forage planting areas over which it had control or significant influences in terms of management and operation of forage growing, more than half of its raw milk supplied by the milk sources over which it had control or significant influences in terms of management and operation of dairy farming and raw milk supply, and the dairy products products over which it had control or significant influences in terms of management and operation of dairy products as of December 31, 2013.

Source: Frost & Sullivan

Among all the major dairy companies in China, Shengmu was the only vertically integrated Chinese dairy farming company whose products meet the E.U. organic standards, as of May 31, 2014.

## **Growth Drivers and Future Trends**

Key growth drivers and future trends of China's dairy industry include the following:

• Increase in per capita disposable income. Per capita annual disposable income of urban households in China is expected to grow at a CAGR of 10.4% from RMB26,955 in 2013 to RMB44,150 in 2018, and the per capita annual disposable income of rural households in China is expected to grow at a CAGR of 12.3% from RMB8,896 in 2013 to RMB15,907 in 2018.

<sup>(2)</sup> Shengmu and Yili Group were the only two grass-to-glass organic dairy producers in China as of December 31, 2013, defined as those with control or significant influences over management and operation of organic certified forage growing fields and ownership of organic certified dairy farms and processing capabilities. As non-organic milk production constitutes a significant component of Yili Group's business, and a majority of Yili Group's overall forage and raw milk is sourced from third-party suppliers, it is not regarded as a vertically-integrated dairy company. See "— China's Dairy Products Market — Increasing Penetration of High-end Market Segment — 'Grass-to-glass' Organic Dairy Market" below for further details.

# INDUSTRY OVERVIEW

- *Rapid urbanization.* China's urbanization rate will increase from 53.7% in 2013 to 59.9% in 2018. Accelerating urbanization also affects consumer goods markets in lower-tier cities and rural areas as the urban mindset and lifestyle are being accepted by an increasing proportion of the rural population. Various consumer products, such as dairy products, which used to be found only in urban markets, are now more often displayed in rural markets, which has helped such products penetrate into broader and more diverse tiers of markets.
- Increase in per capita consumption. China's per capita consumption of dairy products is currently still significantly lower than that of developed countries. In 2013, the per capita consumption of dairy products was approximately 28.9 kilograms per year in China, as compared with 84.6 kilograms per annum, 96.2 kilograms per year and 58.0 kilograms per annum in the European Union, the United States and Japan, respectively.
- *Rising health awareness.* With the changing dietary habits and increasing health awareness of Chinese people, dairy products have become a daily diet staple of an increasing number of consumers. Such a trend is expected to drive further growth of dairy products consumption in China.

## CHINA'S DAIRY FARMING INDUSTRY

### **Climatic and Geographical Suitability**

The dairy farming business is affected by climate. In general, dairy cows prefer cool and dry weather over hot, humid weather, which is why the herd size of dairy cows in northern areas is generally larger than that of southern areas. It is generally accepted in the dairy farming industry that the most suitable cattle raising areas for dairy cows is located in what is known as the Golden Raw Milk Belt (40° and 47° north latitude). Many global leading dairy giants established their dairy farming companies around the Golden Raw Milk Belt, which can provide adequate feed with higher quality and lower transportation costs for dairy farming business. In China, the majority of northeastern China, Inner Mongolia and Xinjiang are within this area.

In particular, located in Bayannur League and Alxa League of Inner Mongolia with a total area of 11,000 square kilometers, the Ulan Buh desert is the eighth largest desert in China which has a number of advantages compared to conventional farming environments, including little pollution, very low levels of bacteria, viruses and pests, and favorable climatic advantages. Dairy cows prefer relatively cool temperature and dry weather. The intensity and the long hours of sunlight in the desert help forage crops grow and dairy cows convert vegetable protein into animal protein and produce higher levels of calcium in their milk. The following are certain climatic advantages of the Ulan Buh desert:

- *Desirable latitude zone for dairy farming.* The Ulan Buh desert is located in the Golden Raw Milk Belt.
- *Cool and dry weather*. The temperature range from 0°C to 15°C is a favorable range for dairy cows, and the Ulan Buh desert has a temperature range generally from -30°C to 39°C

with an annual average temperature of 7.8°C, and an annual average precipitation of approximately 103 millimeters. In addition, the temperature difference between day and night in the desert helps to improve the quality of forage crops. Meanwhile, the temperature in China generally ranges from -33°C to 43°C, with an annual average temperature of 10.2°C. The annual average precipitation in China is approximately 653.4 millimeters.

- Ample sunlight. The Ulan Buh desert has an average of almost 3,200 hours of sunlight annually with an average solar radiation intensity of 6,280 MJ/square meter, compared to an average 1,800 to 2,000 hours of sunlight annually with an average solar radiation intensity of 4,250 to 5,000 MJ/square meter in central and southern China. The intensity and the long hours of the sunlight in the desert help forage crops grow and dairy cows convert vegetable protein into animal protein and produce higher levels of calcium in their milk.
- Abundant soil and water. The Ulan Buh desert is the product of alluviation of the upper reaches of the Yellow River, which has formed a thick layer of rich soil under the sand surface of the desert conductive to plantation. According to the survey conducted by Inner Mongolia Hetao Irrigation Administration, the Ulan Buh desert area has an aquifer holding an aggregate of approximately 5.7 billion cubic meters of water under the sand surface. The water of the upper reaches of the Yellow River is very clean and is purified as it percolates through layers of rock, fine sand and gravel to form the desert lakes and aquifers.

### **RAW MILK PRODUCTION IN CHINA**

China's raw milk demand has been increasing steadily in the last few years, from 40.5 million tonnes in 2009 to 49.0 million tonnes in 2013, with a CAGR of 4.9%. Driven by the increasing demand of dairy products by Chinese consumers, China's raw milk shortage is expected to continue from 2014 to 2018 and the gap between demand and supply will continuously widen at a CAGR of 17.4% from 2009 to 2018, with the demand for raw milk increasing at a CAGR of 7.1% from 2013 to 2018.



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The chart below illustrates the raw milk price trend in China from January 2009 to July 2013.



Within the raw milk market in China, the production volume of organic raw milk was approximately 0.17 million tonnes, accounting for 0.5% of total raw milk production volume which was 35.3 million tonnes in 2013. The market size of organic raw milk in the overall raw milk market is expected to grow significantly in the future. Organic raw milk production volume is expected to reach 1.48 million tonnes, equivalent to 3.2% of total raw milk production volume in 2018, representing a CAGR of 53.5% from 2013 to 2018.

China's non-organic raw milk market was highly fragmented in 2013. In 2013, the top five non-organic raw milk producers collectively accounted for only 5.1% of total non-organic raw milk production volume in China. Modern Dairy, which ranked first in terms of non-organic raw milk production volume, produced 700.0 thousand tonnes of non-organic raw milk in 2013, or 2.0% of the total market. Shengmu produced approximately 113.3 thousand tonnes of non-organic raw milk in 2013, ranking eighth in terms of non-organic raw milk production volume in 2013 with a market share of 0.3%.

Raw milk can be broadly divided into premium raw milk and conventional raw milk based on certain nutrition and safety criteria. Premium raw milk can be further divided into organic raw milk and premium non-organic raw milk. See "— Raw Milk Production in China — Premium Raw Milk" and " — Raw Milk Production in China — Organic Raw Milk" below for further details on the classification criteria.

#### **Premium Raw Milk**

Premium raw milk refers to the raw milk with protein content above 3.2%, fat content above 3.7%, aerobic plate count below 100,000 CFU/mL and somatic cell below 400,000 CFU/mL. Medium-to-large-scale dairy farms are typically able to take advantage of advanced dairy farm management and premium dairy cow breed and generate a majority of premium raw milk. The quality of premium raw milk significantly exceeds China's national standards in most cases. China's premium raw milk production increased rapidly from 2.4 million tonnes in 2009 to 4.5 million tonnes in 2013, representing a CAGR of 16.6%. The proportion of premium raw milk in the total raw milk production also increased to 12.6% in 2013, compared with 6.9% in 2009. Given the increasing popularity of high-end milk products among Chinese consumers and the rising concentration in China's dairy

farming market, the production of premium raw milk is likely to increase to 10.6 million tonnes, accounting for 22.7% of total raw milk production, in 2018, with a CAGR of 18.9% from 2013 to 2018. The proportion of organic raw milk in total premium raw milk production has been rising in the recent years. In 2013, organic raw milk accounted for approximately 3.9% of total premium raw milk production volume, compared to 0.7% in 2009. Organic raw milk production volume is expected to grow faster than total premium raw milk production volume and is expected to account for 13.9% of total premium raw milk volume in 2018.

The chart below illustrates the raw milk production volume and breakdown in China from 2009 to 2013 and a forecast from 2014 to 2018.



Sources: National Bureau of Statistics of China, Frost & Sullivan

The total production volume of premium non-organic raw milk in China was 4.3 million tonnes in 2013. Shengmu produced 113,300 tonnes premium non-organic raw milk, with a corresponding market share of 2.6% in the same year, ranking among the top eight producers of premium non-organic raw milk in China.

### **Organic Raw Milk**

Organic raw milk refers to the pollution-free and additive-free raw milk that meet the organic standards of third-party certification institutions. Organic certification standards are stringent, and involve lengthy approval processes, with requirements that focus on, among others, farmland, feed and breeding of dairy cows. With its high quality, organic raw milk is classified under premium raw milk.

## China's organic raw milk market

Organic raw milk emerged in China only several years ago, and production volume of organic raw milk, which is also market supply of organic raw milk, had experienced rapid growth from 17,000 tonne in 2009 to 174,000 tonne in 2013, with a CAGR of 79.6%. As the Chinese consumers are becoming increasingly aware of the organic concept and the associated health and nutrition benefits, the unmet demand is likely to drive the future growth of the market. Organic raw milk production volume in China is expected to reach 1.48 million tonnes in 2018, representing a CAGR of 64.6% from 2009 to 2018. Furthermore, China's organic raw milk market is expected to keep under-supply and the

gap between supply and demand is likely to increasingly enlarge in the future, representing a CAGR of 62.4% from 2009 to 2018. The chart below illustrates the supply and demand of organic raw milk in China from 2009 to 2013 and a forecast from 2014 to 2018.



China organic raw milk's demand exceeds its supply. Organic raw milk demand reached 187,000 tonnes in 2013, and is likely to sustain the growing trend to 1.60 million tonnes in 2018, representing a CAGR of 53.7% from 2013 to 2018. The gap between supply and demand was 13,000 tonnes in 2013, and is expected to increase to 122,000 tonnes in 2018, as Chinese organic dairy products market will expand and more organic dairy products such as organic yogurt and organic milk powder are likely to gain more market share.

Due to the widening gap between the demand and the supply of organic raw milk products, Shengmu is able to sell its products at a higher average selling price. In 2013, the average selling price was RMB5,247 per tonne for Shengmu's organic raw milk, which is substantially higher than the industry average price for raw milk of RMB3,570 per tonne during the same period.

### Competitive Landscape

China's organic raw milk market was concentrated with only a handful of competitors in 2013. The market share and ranking of the top three organic raw milk producers in China in 2013 were introduced in the following charts, which included Shengmu, Yili Group and Inner Mongolia Yunhai Qiulin Husbandry Co., Ltd. (內蒙古雲海秋林畜牧有限公司), or Yunhai Qiulin. As of the end of 2013, Shengmu was the largest organic dairy farming company in China in terms of herd size of with 30,621 organic dairy cows, reflecting a market share of approximately 58.0% in 2013.

# **INDUSTRY OVERVIEW**

The following charts and tables illustrate the top three organic raw milk producers in China by production volume and herd size in 2013.

ank	Organic Raw Milk Producer	Organic Raw Milk Production Volume (000' Tonnes)	Market Share
1	Shengmu	94.2	54.2%
!	Yili Group	40.2	23.1%
3	Yunhai Qiulin	16.7	9.6%
	Top three	151.1	86.9%
	Others	22.7	13.1%
	Total	173.8	100.0%

Source: Certification and Accreditation Administration of the PRC, Frost & Sullivan

- *Yili Group.* One of the largest dairy companies in China and has many series of dairy products. Yili Group's organic dairy products are sold under its high-end series, "Satine."
- *Yunhai Qiulin*. Yunhai Qiulin is a domestic participant in upstream organic dairy market in China, which produces organic forage and organic raw milk. In 2013, Yunhai Qiulin ranked No.3 in terms of herd size of organic dairy cows and organic raw milk production volume.

## Entry Barriers

The following is a brief summary of the entry barriers of the organic raw milk market in China.

- *Natural resources and conditions.* The organic raw milk industry requires a combination of natural resources conditions to ensure product safety and quality, such as desirable latitude zone for dairy farming, cool and dry weather, ample sunlight, and abundant water. Those organic dairy farms that integrate these natural resources and conditions are able to produce organic raw milk that meet the organic standards. However, such combination is difficult for new market entrants to integrate in a short period of time.
- *Certifications*. The PRC government has laid out very high standards for organic dairy farming. For organic raw milk producers, each production process needs to follow corresponding requirements. Farmlands must be free of pollution, synthetic pesticides or antibiotics.
- *Conversion period.* Certain conversion periods are needed for organic raw milk. For example, it takes two years' conversion period to convert organic feed, and six months' conversion period to convert organic dairy cows under the corresponding organic certification requirements.

# **INDUSTRY OVERVIEW**

- *Limited supply of organic feed.* As the supply of organic feed for dairy farming is limited in China, it also sets as an entry barrier for the new market entrants.
- *Capital intensity.* The organic raw milk industry is a capital-intensive industry, and significant and continuous capital investment is needed for entering organic raw milk industry. Investment includes dairy farms development and maintenance as well as purchasing and raising dairy cows.
- *Management team.* As high requirements exist on organic raw milk production, rich experience on organic raw milk industry is needed. However, in China, organic raw milk industry is still an emerging industry, and there are limited market participants in the industry, so it is difficult to get an experienced management team. This is another entry barrier for market newcomers.

## Organic Dairy Certification

Set forth below are certain key criteria for organic certification on dairy farming in China, the European Union, the United States and Japan in 2013.

	Farmland	Feeding	Breeding	Production
China GB	<ul> <li>Far from city, industrial and mining area, traffic trunk, polluted area, etc.</li> <li>Soil environment to meet GB15618</li> <li>Water quality to meet GB5684</li> <li>Air quality to meet GB3095 and GB9137</li> <li>Buffer zone should be set if potential polluting risks exist nearby</li> </ul>	At least 2 years conversion period (at least 1 year for lands that are newly cultivated, uncultivated for over 3 years, or free from banned substances for over 3 years) Over 50% feeds from self-owned or partnered organic dairy farms No chemical synthetic fertilizer permitted	At least 6 months conversion period Natural birth with at least 3 months suckling period unless emergencies 6m <sup>2</sup> inside and 4.5m <sup>2</sup> outside active area per cow	Use minimum non-organic ingredients (no more than 5%) No GMO additives
E.U. Standard	No polluting risks exist nearby	At least 2 years conversion period before sowing At least 60% feed from self-owned or partnered organic dairy farms	6 months conversion period 6m <sup>2</sup> inside and 4.5m <sup>2</sup> outside active area per cow	Use minimum non-organic ingredients (no more than 5%) No GMO additives
U.S. Standard	Buffer zone needed for farm protection	3 years conversion period 100% organic feeds required At least 30% feed of dry matter during grazing season Grazing area >0.66 acre per cow	1 year conversion period Year-round access for all animals to the outdoors, shade, shelter, exercise areas, fresh air, clean water for drinking, and direct sunlight	Organic ingredients should not be less than 95% Only mechanical or biological methods can be used for preparing organic products
Japan	Pastureland and open-air exercise area where cows can grub the ground	3 years conversion period before the first pasturing 100% organic feeds required	At least 6 months conversion period 4m <sup>2</sup> inside and outside active area per cow	Use minimum non-organic ingredients (no more than 5%) Only physical and biological method may be used for manufacturing, processing or disease control

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Source: GB/T 19630.1-2011, Ecocert Group, United States Department of Agriculture, Japan Ministry of Agriculture, Forestry and Fisheries

The E.U. standard for organic certification on dairy farming is among the most well-recognized standards of organic certification in the world. Shengmu was the only vertically integrated dairy company in China that meets E.U. organic standards as of May 31, 2014.

For certifications under the PRC standard, certification institutions in China are required to be approved by China Certification and Accreditation Administration before issuing organic certifications. By May 2014, there were 25 such approved certification institutions, among which COFCC (北京中綠華夏有機食品認證中心), OFDC (南京國環有機產品認證中心) and WIT (杭州萬泰 認證有限公司) are most widely recognized for organic milk certification and have certified the organic milk products of certain major PRC dairy companies. For instance, COFCC has certified "Shengmu" organic milk of Shengmu and "Deluxe" organic milk of Mengniu Group, and OFDC has certified "Satine" organic milk of Yili Group.

### CHINA'S DAIRY PRODUCTS MARKET

### **Overall Market Size and Growth**

In China, dairy products can be divided into four categories: liquid milk, milk powder, yogurt, and other dairy products. The entire market of dairy products in China has grown from RMB189.5 billion in 2009 to RMB300.4 billion in 2013 in terms of retail sales value, with a CAGR of 12.2%. UHT and fresh milk products contributed the major part and the market has been growing steadily from RMB70.9 billion in 2009 to RMB108.4 billion in 2013, with a CAGR of 11.2%. Yogurt has been enjoying a fast growth from RMB23.1 billion in 2009 to RMB36.4 billion in 2013, with a CAGR of 12.1%. Milk powder grew from RMB80.6 billion in 2009 to RMB131.8 billion in 2013, with a CAGR of 13.1%. Other dairy products mainly include cream, cheese, and condensed milk. The retail sales value increased from RMB14.9 billion to RMB23.8 billion from 2009 to 2013, with a CAGR of 12.4%.

The total retail sales value of dairy products is likely to grow to RMB513.4 billion in 2018, with a CAGR of 11.3% from 2013 to 2018. UHT and fresh milk production is expected to grow with a CAGR of 10.2% to RMB176.4 billion in 2018. Yogurt production is likely to maintain the fast growing trend with a CAGR of 11.2% to RMB61.9 billion in 2018. Milk powder and other dairy products retail sales value are likely to reach RMB233.5 billion and RMB41.5 billion, with CAGRs of 12.1% and 11.8%, respectively.

According to the F&S Report, Mengniu Group ranked the first in terms of retail sales value of liquid milk products in China with a market share of 25.3%, 22.2% and 22.8% in 2011, 2012 and 2013, respectively. In 2013, Mengniu Group, Yili Group and another leading PRC dairy company were the three largest producers of liquid milk products with an aggregate market share of 55.4% in terms of retail sales value.

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### **Increasing Penetration of High-end Market Segment**

High-end liquid milk is defined as the products with a retail price of above RMB12 per liter. High-end liquid milk is usually made from domestic premium raw milk or imported dairy materials, and sometimes associated with additional nutritional contents or functions.

The chart below illustrates the breakdown of the liquid milk market in China in terms of retail sales value from 2009 to 2013 and the forecast from 2014 to 2018. The retail value of China's liquid milk market grew with a CAGR of 11.4% from 2009 to 2013 and is expected to further grow with a CAGR of 10.5% from 2013 to 2018.



Shengmu is a major producer of organic liquid milk with a market share of 25.3% in terms of retail sales value of organic liquid milk in China in 2013. The total retail sales value of organic liquid milk in China was RMB1.9 billion in 2013, accounting for 1.3% of the total liquid milk market in China.

In 2013, Shengmu's organic liquid milk average retail sales price was RMB23,211 per tonne, which was substantially higher than high-end liquid milk industry average of RMB15,840 per tonne, and higher than the organic liquid milk industry's average of RMB22,597 per tonne.

#### "Grass-to-glass" organic dairy market

A grass-to-glass organic dairy product means that the dairy product is organic certified from feeding, to raw milk production and dairy product processing. A grass-to-glass organic dairy company is a company that produces both organic certified raw milk and organic certified dairy products. In addition, the process flows must observe organic standards, and the company must have the ability to control and track the organic certified feed. Shengmu was the only vertically integrated grass-to-glass organic dairy company in China that meets E.U. organic standards as of May 31, 2014.

Feeding	Raw Milk Production	Dairy Product Processing
Dairy product processors should have control or significant influences over management and operations of organic certified forage growing fields to produce feed for its dairy cows.	Organic raw milk comes from organic dairy cows. Dairy product processors must own the organic dairy cows, and the raw milk must be certified organic.	Dairy product processors should follow specific process flows which are certified organic.

As of the end of 2013, there were only two grass-to-glass organic dairy producers in China, Shengmu and Yili Group. There are a limited number of international market participants in China, such as Arla Foods and Organic Valley. Arla Foods is a global dairy company headquartered in Denmark. Arla's grass-to-glass organic dairy products are sold under its brand Arla Harmonie. Arla Foods has entered China and sells grass-to-glass organic dairy products in China. However, the brand is not very well penetrated in China and Arla Foods can only be seen in limited cities in China.

According to a consumer survey conducted by Frost & Sullivan, 90.2% of respondents indicated that they prefer organic milk to non-organic milk, among whom approximately 88.3% indicated that they prefer grass-to-glass organic milk to non-organic milk and would like to pay a price premium for grass-to-glass organic milk. With the rising health consciousness and increasing disposable income of consumers, more and more consumers will pursue grass-to-glass organic dairy products. By comparison, organic milk products only accounted for 0.6% of entire dairy products in China in terms of retail market value in 2013.

## **RAW MATERIAL PRICES**

Raw materials for the dairy industry predominantly consist of dairy cow feed and packaging materials. Dairy cow feed mainly includes forages and concentrated feed, representing approximately no less than 60% and no more than 40% of a dairy cow's daily feed, respectively.

- Principal types of forages include corn silage, alfalfa and guinea grass. Corn silage is made from corns after dough stage through fermentation in a sealed silage cellar at dairy farms. The average market price of domestic corn silage increased from RMB236.1 per tonne in 2009 to RMB410.0 per tonne in 2013. Alfalfa is a herbaceous legume grown widely across northern China and is rich in protein and minerals, with high energy and fiber. The average market price of domestic first-grade alfalfa increased from RMB2,281.6 per tonne in 2009 to RMB2,725.5 per tonne in 2013. The average market price of guinea grass increased from RMB650.0 per tonne in 2009 to RMB1,190.0 per tonne in 2013.
- Concentrated feed is a low-fiber feed made from blending various crops primarily consisting of corn, soybean meal and cottonseed meal. Corn and soybean meal are the two types of commonly used concentrated feed in China. The annual average market price of corn and soybean meal increased from RMB1,698.6 per tonne and RMB3,701.0 per tonne in 2009 to RMB2,452.5 per tonne and RMB4,298.2 per tonne in 2013, respectively.

Leading players in packaging materials for liquid milk products market in China include, among others, Tetra Pak, Greatview, and SIG Combibloc. The industry average market price of 250 mL packs was stable during the past five years. It has increased slightly from RMB205 per 1,000 packs in 2009 to RMB215 per 1,000 packs in 2013, or a CAGR of 1.2% during such period. The 250 mL packs price of Tetra Pak is approximately 30% to 40% higher than the industry average market price of 250mL packs, for its fine quality, good reputation and unique patent technology.