FCRN
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China briefings
Focus on dairy

Photo:
Dairy products in a convenience store, Shandong

General Eccentric via Flickr

Summary

The Chinese dairy sector was rocked by a food safety scandal in 2008; this prompted a government-supported shift to larger scale production in an attempt to improve standards and monitoring processes. Despite the immediate setback caused by the scandal, production and consumption have since continued to grow rapidly. The industry faces a range of environmental, animal welfare and public health challenges.

China is the third largest dairy producer in the world, after the United States and India. Although dairy products are not traditionally consumed in the Chinese diet, production and consumption of these foods have been growing rapidly. This is partly due to active government support for the sector on economic, ideological and public health grounds, and also due to strong investment in and marketing of the sector by industry. Significant changes, most notably a shift towards more consolidated and scaled up enterprises, have been occurring in the dairy sector since the melamine adulteration scandal of 2008, although smallholder production is still prevalent. Food safety concerns continue to beset the sector. Other considerations around the environment, animal health and welfare, and public health may also be important drivers of future change.

CHINA BRIEFINGS
OVERVIEW OF CHANGES AND DRIVERS IN CHINA'S FOOD SYSTEM

May 2015

Written by Huw Pohlner based on Garnett, T. and Wilkes, A. (2014) *Appetite for change: Social, economic and environmental transformations in China's food system.*

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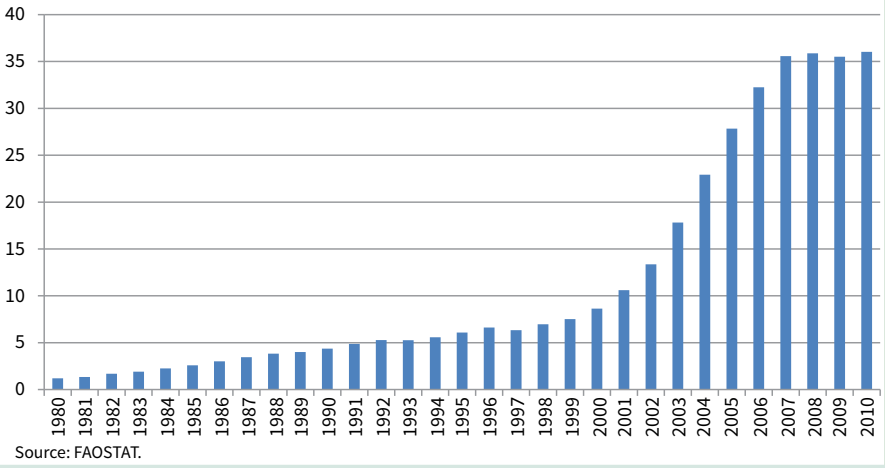
Production overview

- A slowing in the dairy sector's growth since 2007 (in the context of what is still very rapid growth) has been mostly due to the 2008 melamine crisis (see below) and the ensuing process of consolidation and restructuring in the industry.

Figure 33: Trends in China's cow milk production, 1980-2011 (million tonnes)

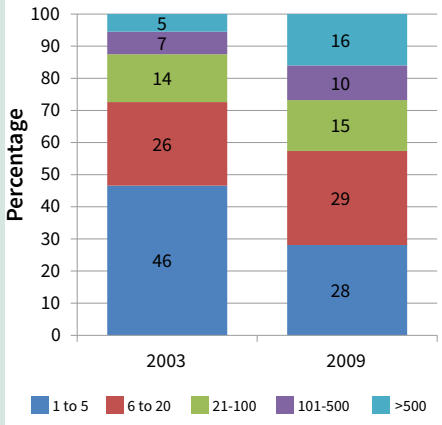


Source: FAOSTAT.

For a more detailed discussion, see the original report here.

- Exports are negligible and imports (5.5. million tonnes in 2011) are dominated by milk powder; imports (which doubled in the five years to 2010) are likely to grow as domestic production fails to keep pace with demand and public fears about the safety of local products continue to affect purchasing patterns.
- Most of the growth in domestic production has been achieved by increasing the number of cows farmed rather than through gains in productivity.
- Yields are lower in China than in the UK or US due to breed type, lower feed quality, and problems of management and disease control.
- From the sector's beginnings close to urban areas in the early 1970s, dairy production is now concentrated in the north of China, with Inner Mongolia now the largest single dairy-producing region. Adoption of UHT processing technologies and, more recently, refrigeration infrastructure, have enabled producers to access distant markets.
- China's dairy production sector has historically been dominated by small-scale producers; although the general trend is toward scaling up, over half of all dairy cows in 2009 were still housed in farms with less than 20 head (Figure 35).

Figure 35: Share of cow numbers by farm size, 2004-2008



Source: Ma H, Liu W and Oxley L. (2012). Productivity growth and policy implications for china's dairy farms, China Economic Policy Review, (1)1: 1250004. Data taken from China Dairy Statistical Yearbook 2005-2009.

For a more detailed discussion, see the original report here.

Chinese milk production in 1980 was 1.36 million metric tonnes and by 2011 it had reached somewhere between 33–42 million tonnes, with the pace of growth escalating dramatically between 2000 and 2007 (Figure 33).

- Scaling up in production is being encouraged by direct investments from domestic and foreign processing companies wishing to gain greater control of their supply chain.

- Government policies have explicitly encouraged scaling up on the assumption that larger systems are more efficient and productive.
  - Evidence for this assumption is not especially strong, with the slight productivity advantages of larger systems being diminished by faster learning in smaller enterprises over recent years.

- Smallholder production nevertheless continues. The Government has encouraged smaller farms to improve quantity and quality of output, offering loans for buying cows, and promoting cooperative models.

Processing and imports

- The sector is dominated by domestic players, some of which rank among the top 20 largest milk companies in the world.

- Imports are growing rapidly and more than a third of infant milk formula sold is imported.

- Overseas companies are now investing in joint ventures with Chinese processors so they can access supply chains and supply foreign branded products to the Chinese market.

- Chinese companies are also investing in processing facilities abroad, to improve security of supply and to benefit from the food safety reputation of producers overseas.

- In addition to increasing its imports of finished dairy products, China is also a major importer of breeding cattle and bull semen.

Unlike the production sector, the dairy processing sector is highly concentrated; the top 10 processors controlled over 70% of the liquid milk market in 2012.

Consumption

- Dairy product consumption quadrupled between 1995 and 2010 in cities (to 18kg/person/year) and grew five-fold in rural areas (to 3.5kg/person/year); these figures are still well below global averages.

- The strongest growing sectors in the immediate future are likely to be infant formula and cheese, albeit, in the latter case, from a very low base.

- Dairy consumers tend to be wealthier, and better educated, urban dwellers than their non-consuming counterparts.

The dairy retail sector was worth US$ 36.6 billion in 2011 and its value was expected to increase by 80.3% from 2011 to 2016.

Drivers of growth in dairy production and consumption

- Considering the small role that dairy plays in most traditional Chinese cuisines and the high prevalence of lactose intolerance in China, it is useful to outline some reasons for the rapid growth seen in the sector:
    - The Chinese Government has promoted dairy as a driver of economic growth through strategic **subsidies** and interventions to increase output;
    - Demand has increased not merely as a product of increasing wealth but as a consequence of **government policies** to reduce the prevalence of micronutrient deficiencies; a nationwide school milk programme established in 2000 and reaching five million children by 2011 is one example of this;
    - Domestic and overseas firms have **aggressively marketed** their products by focusing on the health-enhancing properties of milk for children, the elderly, and pregnant/breastfeeding women; this has been aided by very low breastfeeding rates in China, itself a consequence of women needing to return to work soon after giving birth; and,
    - **Scaling up and consolidation**, as well as new safety standards, have been pursued by the government in response to the 2008 melamine scandal, which led to several deaths from adulterated milk and affected 300,000 people.
- The response to the melamine scandal from government has focused on closing down implicated processing facilities, merging processors into larger enterprises, encouraging the establishment of production zones, introducing new inspection requirements, and subsidising new equipment installation in larger facilities.
    - Government's response has led to many smaller processors exiting the sector after failing to obtain a license.

A national plan was issued in 2010 for the development of the dairy industry. It sought to eliminate substandard producers and targeted an increase in the national cow herd to 15 million head with 35% of total output by 2013 to be met by farms with over 100 head of cattle.

Emerging issues for the dairy sector

- Environmental impacts from the sector are increasing as total cow numbers increase.
- The melamine scandal revealed the need for quality control throughout supply chains; there is currently limited quality control, all of which is conducted in-house rather than by third parties.
- The gradual transition from smallholder production to large-scale, intensive and confined operations will change the nature of animal health and welfare risks in the sector and give rise to a different set of environmental problems (see 'Focus on livestock').
- The specific forms in which dairy foods are consumed in the future (especially cheese, butter, sweetened milk drinks, and ice cream) may be linked to increases in chronic diseases.

Policy implications

1. Overall growth and especially import growth in the dairy sector has been dramatically influenced by food safety fears, indicating the importance of government policies to tackle the source of these concerns.
2. Dairy sector growth has come at the cost of increased greenhouse gas emissions and other forms of pollution; policy support for consolidation and scaling up in the sector is partly intended to limit these impacts but the evidence is not clear.
3. The wealthy urbanite profile of many dairy consumers in China indicates that national consumption levels are likely to rise as average incomes grow and urbanisation continues.
4. The health impacts of growth in dairy consumption are likely to be mixed. Benefits may be undermined by the increasing consumption of fatty and processed forms of dairy.
5. An integrated environmental policy to address the dairy sector's impacts is required, as reports suggest farm siting decisions often fail to consider the need to manage manure surpluses and other waste.
6. Policies to address the dairy sector's environmental impacts may need to consider the demand side as well as focusing on improving production efficiencies.

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