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China's Incredible Shrinking Hog Herd

And the Countries Happy to Fill the Void

Rabobank

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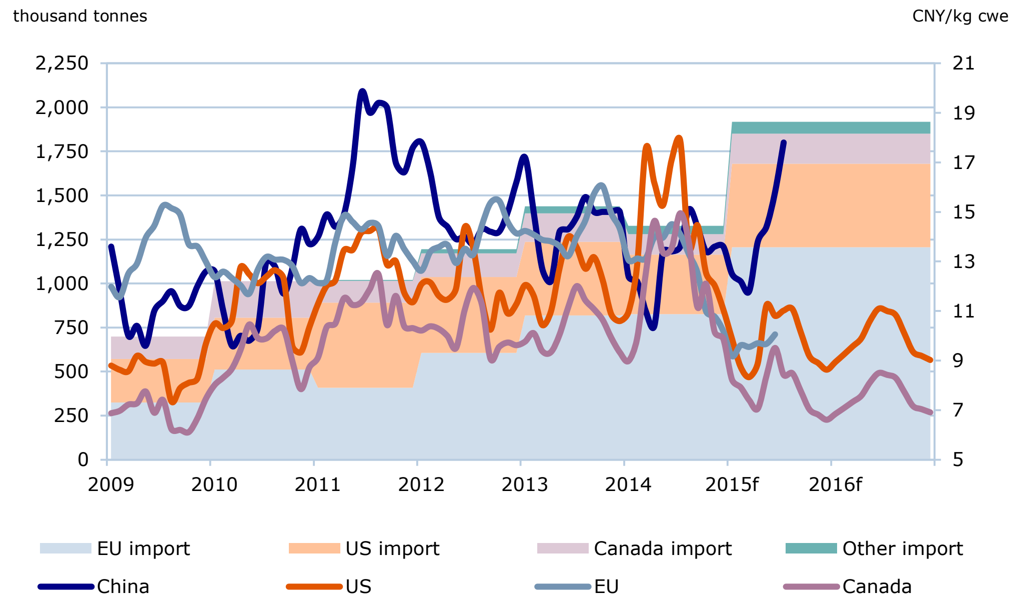
Contents

Over the last 18 months, China's pork industry has experienced one of the largest culls in history—the ramifications of which are just now being felt globally. To put this change into perspective: the decline of nearly 100 million head in China's hog herd and 10 million in its breeding herd is equivalent to the US, Canadian and Mexican pork sectors all disappearing from global supply in a span of less than two years. For 2015, Rabobank expects China's pork production to decline by 6.5 percent, the third-largest decline in production in the last 40 years. This will be supported by a 600,000 tonne increase in imports—primarily from the EU, the US and Canada—in the second half of 2015. This surge in pork trade could not come at a better time, as the global pork sector is in the midst of a supply glut after many regions have recovered from the porcine epidemic diarrhea virus (PEDv) outbreak of 2014, and a number of trade bans have depressed pork prices and producer margins.

Imports will only partially offset China's supply drop

China's pork sector has been challenged for more than just the last year, as producers struggled to overcome overexpansion (between 2011 and 2013), government-supported grain prices and an ever-slowing rate of economic growth. Since the end of 2013, China's pork supply has been rationalised, with millions of small producers exiting the industry and leaving behind a more modern, efficient and secure producer base. With supply falling below demand this past spring, China's pork prices have spiked, bringing local producer profitability back to a positive level not seen for some time. In addition, the higher pork prices have made pork imports from the EU, US and Canada competitive again, which we expect to lead to a forecast 1.9 million tonnes of imports in 2015, or a 45 percent increase over 2014 (*see Figure 1*).

Figure 1: Pork prices in China have risen in 2015, while prices in the rest of the world remain depressed.



Note: Prices for the US and Canada for 2H 2015 and 2016 are based on US lean hog futures at current FX rates.

Source: Rabobank, 2015

We expect to see a similar level of imports in 2016, as the low sow inventory—which we expect to have bottomed-out during Q3 2015—will likely impact the piglet supply through mid-2016, supporting elevated pork prices. Meanwhile, herd replenishment is not expected to be rapid, as the current high piglet prices will stop farmers from increasing production quickly. All of these factors will result in tight supply and strong imports continuing into 2016.

The latest development of devaluation of the Chinese renminbi is the wild card, adding uncertainty to pork imports. In response to the economic slowdown and the weak exports in July, on 11 August, the People's Bank of China announced that they would be devaluating the renminbi by 1.9 percent in order to help address these issues. The financial markets saw this announcement as a sign that China may look for additional measures to spur growth, and as a result, the renminbi devalued by 3.0 to 4.5 percent against the euro and the US and Canadian dollars, just three days after the announcement. While these moves dampen the competitiveness of imports from these countries, the pork supply gap in China remains, and pork in China is still 60 percent to nearly 100 percent more expensive than product from the EU, the US and Canada. As such, these changes in China's currency policy have done little to affect our views on pork imports in the coming year. However, they will very likely impact the import product structure, which will shift to more lower-valued products (such as pork by-products) if the currency devaluation continues.

With 49 percent of global production and 52 percent of global consumption in 2014, even small changes in China's pork industry have a notable impact on the global market. This is evidenced by the disease-driven price surge in China in 2007/08 and 2010/11, along with the subsequent rise in imports, which resulted in rising hog prices around the globe. The Rabobank Five-Nation Hog Price Index increased by 48 percent between January and June 2008, and 28 percent between January and April 2011, during the heights of the Chinese import demand. We expect to see a similar situation taking place in the global market in the coming year.

Even though we see China's current pork supply issue as being short-term, as China's pork supply is expected to recover as soon as 2H 2016, the impact on the global market will be long-lasting. Historically, China's pork supply has been largely self-sufficient, but imports have gradually strengthened their foothold in China. For example, from 2012 to 2014—when China's pork supply was more than sufficient to meet local demand—the import level did not decrease. This suggests that part of China's frozen pork supply, which is largely for further processing, is already dependent on foreign production due to lower prices, and consistent quality and supply. We believe that this market expands each time imports climb, and we expect this dynamic to hold, even when domestic supply rebounds, as the sourcing channel has been established and international frozen pork prices are competitive relative to domestic prices. We expect China's pork imports to escalate to a new level in the years following 2015 and 2016, which will impact the global trading pattern in the long term. As a result, China will play an ever-increasing role in absorbing global supply, particularly frozen by-products and frozen pork meat.

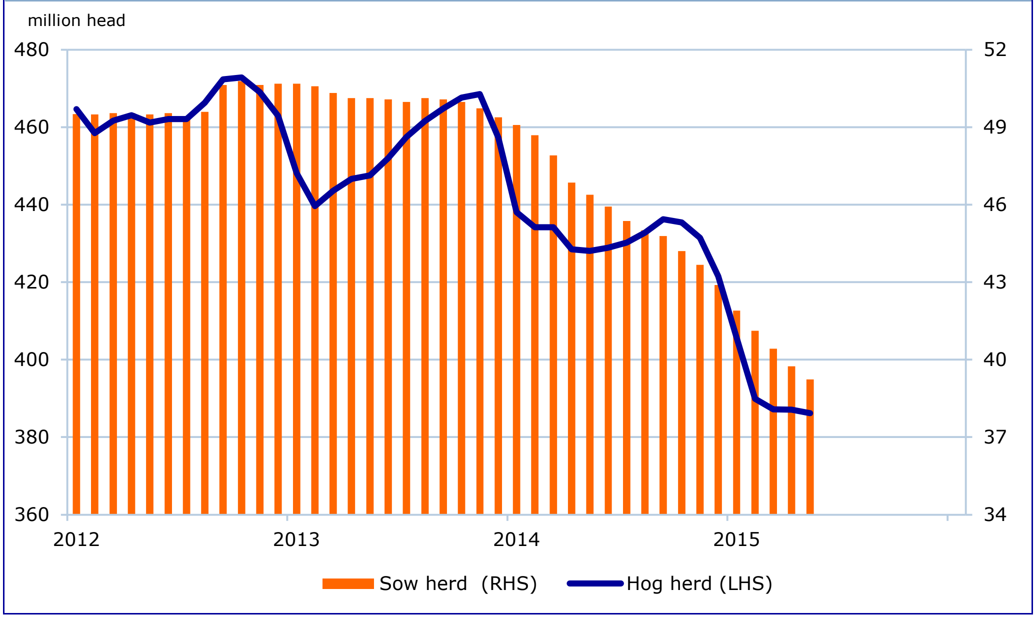
China's domestic capacity for further processing and cold storage is available for the increased imports. With a fast-growing vehicle population and changing lifestyles, the demand for additional processed pork products—which can be directly consumed both out of the home or in foodservice—is still strong despite the slower economy. This drives meat processors to increase purchasing cheaper pork products, but traders continue to play an important role, linking meat processors and exporters. Infrastructure for trading business is well established. Although some capacity of cold storage is being built or replaced, the capacity for imports is still more than sufficient, as imports take up only a small share of the domestic supply.

Pork production will drop by third-largest amount in 40 years

After reaching the latest peak in 2011, Chinese piglet and hog prices have steadily declined due to the investment and productivity-driven rise in production, rising environmental costs and slowing economic growth. These factors, combined with continuing elevated feed costs, have pressured farmers' margins, which have been periodically negative from mid-2012 to mid-2013, and were in great deficit from the beginning of 2014 through Q1 2015.

As a result of reduced margins, millions of small producers exited the industry, and the Chinese hog herd declined. Between November 2013 and May 2015, the total Chinese hog herd dropped by an astonishing 81.4 million head (-17.4 percent), while the breeding herd declined by 10 million head (-20.1 percent) (*see Figure 2*).

Figure 2: China's hog industry has been contracting since mid-2013.



Source: China Statistical Yearbook, Chinese Ministry of Agriculture, 2015

The enormous decline of Chinese pork production finally reached the market in the course of 1H 2015. In the months thereafter, the Chinese pork market rapidly improved, with spiking prices for piglets, hogs and pork dipping in February, March and April, respectively.

Chinese hog supply will remain pressured for at least one year, implying that Chinese meat production will not start to recover before 2H 2016. Next to the very low level of the breeding herd, which will slow the speed of replenishment, many farmers have little financial strength to expand production or even sustain the business. This raises the question of how much Chinese pork production will decline in 2015, along with the potential impact on both the Chinese and global markets.

We estimate a decline in Chinese pork production of about 3.7 million tonnes (6.5 percent), bringing total production to 53 million tonnes in 2015. Chinese pork production already dropped by an estimated 1.3 million tonnes (4.9 percent) during the first half of 2015. Based on the 10 percent YOY decline of the hog herd between September 2014 and March 2015, we estimate a 9 percent decline in the number of hogs slaughtered in 2H 2015. Combined with a 1 kilogramme increase in slaughter weight due to higher prices, we forecast a decrease in Chinese pork production of 2.4 million tonnes in 2H 2015. While the sow herd decline slowed between April and June, and numbers finally began to build in June/July, the piglet supply will remain low until the end of 2015, suggesting the slaughtered pig number will not pick up until mid-2016. However, pork supply will fully recover in 2H 2016. We forecast that pork production will increase by 2 percent in 2016 compared with 2015, but will remain lower than levels seen in 2014.

The strong production drop will support further rising prices for piglets, live hogs and pork towards the end of the year and into 2016. This is in line with the experiences in 2007/08 and 2011, when prices reached peak levels due to the pork shortages. With China's slowing economic growth, it is unclear whether these peak levels will be reached again. However, based on the 26 percent increase in piglet prices between March and May 2015, it is certain that prospects for Chinese pork prices and resulting farmer margins are deemed positive.

China's pork consumption will decline along with production

The production decline will be nearly matched by lower consumption, as soaring prices will result in shrinking pork consumption in China. We estimate pork consumption will drop by 3.1 million tonnes (5.3 percent) compared with 2014 levels, to 55 million tonnes. This is based on the historic performance in 2007 and 2011, when pork prices soared and pork consumption shrunk. We expect this trend to be even stronger in 2015, as the slowing economy is already impacting animal protein consumption.

The approximate 3.1 million tonne drop in pork consumption in China will partially result in Chinese consumers trading down to poultry and, to a lesser extent, trading up to other proteins such as beef, sheepmeat and seafood. Poultry inventories are still high due to the sluggish market development in 2014 and the first half of 2015, and also the fact that the avian influenza-induced drop in US poultry imports has been largely compensated by Brazil and Argentina. This will continue to pressure poultry prices for the next few months, with some possible upside to be expected from the end of Q3 2015 onwards, as the peak season of meat consumption arrives.

Although the ban on US poultry is not expected to impact China's market significantly in 2015, the continuous strong hog price and the low grandparent chicken stock will jointly push up poultry price into 2016 and even 2017. Other protein markets will also get positive support. In previous years, the seafood market has been greatly supported due to part of pork consumption shifting to seafood, which will commence in 2015. The beef and sheep meat markets will be impacted to a lesser extent, as the prices in local market are already too high, and imports in 2015 are priced higher than previous years, due to tighter global supply.

EU, US and Canada are well positioned to fill China's increased import needs

While we expect the forecast pork production decline of 3.7 million tonnes to be met by a significant decline in consumption, pork imports are also expected to increase to 1.9 million tonnes in 2015, or 45 percent above last year. This growth will mainly occur in 2H, as Chinese pork imports only increased by 5 percent between January and May 2015—prior to the rise in pork prices—and will be supplied by the EU, the US and Canada.

These countries have competitively-priced stocks available due to a supply glut after having recovered from the PEDv outbreak in 2014, along with a number of trade bans depressing pork prices and producer margins. In addition, the Russian ban on Western food imports has left a large volume of ractopamine-free supply in Europe, Canada and the US. Finally, the 20 percent to 25 percent strengthening of the US dollar against the euro and Canadian dollar over the last year further supported the competitiveness of the EU and Canada. This is clear from the growing price difference of hogs in Chinese renminbi between China and its three main suppliers.

It is important to note that the competitive position is determined by the price and volume available, the approval of both the country and plant, as well as other specific requirements set by the Chinese authorities. The EU, the US and Canada are all approved (in the EU, all main exporting countries), but only a limited number of plants are approved in each country. Specific requirements include the use of, among others, growth promoters like ractopamine, which are frequently used in—and therefore limit the availability of—US pork for export to China and other countries.

EU is best-positioned to gain, but domestic impact is limited

The EU is best-positioned to gain from the rising Chinese import demand. The EU has sufficient pork and variety meat available, is price-competitive due to the depreciation of the euro against the US dollar and the pressured EU pork prices, and uses no growth promoters. In addition, the EU was already the main supplier of China's import demand in 2014, with a 60 percent share (827,000 tonnes).

The Russian ban on Western food imports in 2014, which was recently extended for another two years, was keenly felt on the pork side by the EU, where the region lost 25 percent of its pork exports due to the ban. EU producers were able to offset a large degree of this lost volume in 2014 through increased shipments to South Korea, China and the Philippines, but EU pork exports still declined by 7 percent last year. For 2015—with the EU still unable to export to Russia—producers there still look to Asia for exports, with the recent spike in prices in China providing a key opportunity for increased shipments.

In the EU, pork production is expected to increase by 627,000 tonnes, or 2.8 percent, while consumption is stable at best, allowing for a significant increase in exports. A great deal of this production growth is being driven by improved sow productivity in Spain and north-west Europe. Combined with the estimated 450,000 tonnes of variety meat, about 1 million tonnes of extra pork and variety meat is available for export—above the 3 million tonnes exported in 2014.

In light of this production growth, we project an increase of EU pork and variety meat imports by about 375,000 tonnes. This will bring the total EU export to China to 1.2 million tonnes in 2015. This growth will support EU pork prices, but because of the still significant available stocks, the impact will be limited.

In the EU, exports will grow from all countries allowed to export to China. The most likely winners will be Spain, Denmark, Germany and the Netherlands, due to the clearly higher production of 150,000 tonnes, 52,000 tonnes, 38,000 tonnes and 31,0000 tonnes, respectively, between January and April 2015.

For the US, availability of ractopamine-free supply is the determining factor

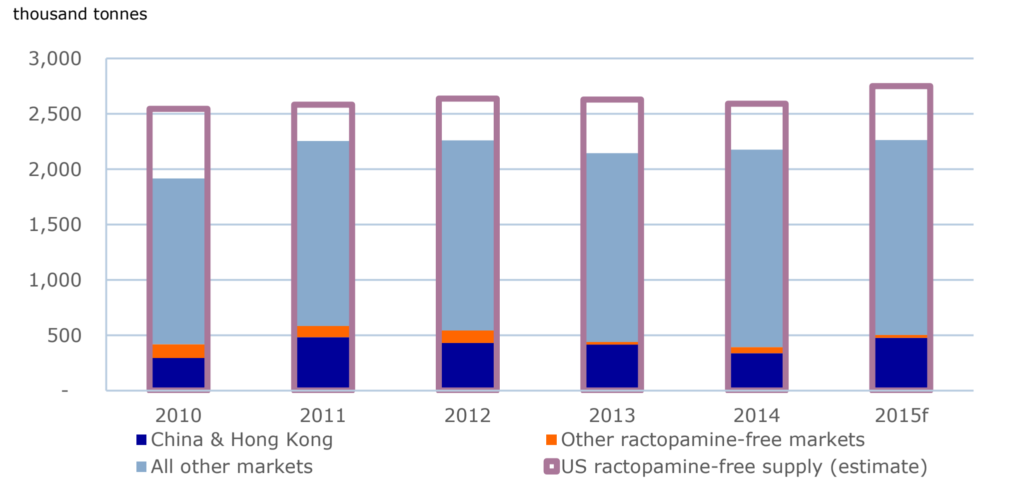
Ractopamine-free supply

While price may logically seem like the most critical issue to US pork export competitiveness, the use (or assumed use) of the feed additive ractopamine has had a far greater impact on the trajectory of US pork exports in recent years. Ractopamine is a growth promoter that adds approximately 10 percent more lean meat to every hog and is estimated to boost producer profits by about USD 2 per head. While ractopamine has been tested and cleared by the US Food & Drug Administration, it has been banned by a number of countries (including the EU, China, Taiwan and Russia) due to claimed fears over animal and human health. These claims are well disputed by US producers, but the fact remains that a number of key pork-consuming and pork-importing regions of the world have banned ractopamine.

As a result of these demands, a number of US pork producers have dedicated ractopamine-free hog herds aimed at these export markets. Today, about 20 percent to 30 percent of the US hog herd is estimated to be ractopamine-free. Most of the ractopamine-free supply comes from Smithfield Foods, who, over the last five years, has dedicated half of the company’s processing capacity (three plants), to processing only ractopamine-free hogs. As Smithfield is now owned by the Chinese WH Group, the company has a clear distribution channel into the Chinese market.

While less than one-third of US pork production is being produced without the use of ractopamine, there is still a great deal of ractopamine-free supply available to be exported if and when the demand presents itself. Currently, we estimate that only about 15 percent to 20 percent of US ractopamine-free pork production is being exported to markets that require ractopamine-free pork. This gives the US a great deal of additional export volume—we estimate 2.0 million to 2.5 million tonnes—ready to serve China’s growing import demand starting in 2H 2015.

Figure 3: US pork shipments to China and Hong Kong leave ample room for additional ractopamine-free exports.



Source: USDA PSD, Rabobank Estimates, 2015

'China eligible'

Not only does the US have to meet the feed requirements of China and other important export markets, but a number of important pork processing facilities have been banned from exporting pork products to China. In August 2014, China banned six US processing plants after traces of ractopamine were found in a shipment of pork. In total, there are around 15 US plants ineligible to export to China. We estimate these plants account for 40 percent to 50 percent of US processing capacity, which further limits the amount of US supply eligible to export to the Chinese market. Since the ban went into effect, US government and industry representatives have been working with Chinese officials to lift the ban on these and the remaining US plants.

Expectations for US pork exports

The strong relationship between Chinese pork prices and US pork exports implies a significant increase in trade flows, as current price levels are near 2011 highs in China and at five-year lows in the US. We expect annual US export volumes to reach 475,000 tonnes in 2015, which is up from 337,000 tonnes in 2014, and will help tighten US pork supply. Based on current USDA estimates for a 6 percent increase in US pork production for 2015, the additional exports to China will reduce supply growth by 1.3 percent, to 4.7 percent, and with nearly all of the export growth happening in the second half of the year.

US pork exports to China have not been stellar in the last year due to the industry being challenged by a stronger dollar versus all major pork export competitors, as well as the slowdown and near shutdowns of a number of major US ports. While it appears the US dollar will continue to be an issue for at least the remainder of 2015, the US port issues seem to be resolved. The port issues were so severe at the beginning of 2015 that reports of backlogs of pork supplies waiting for export stretched all the way from the US West Coast to the country's Midwest.

The currency issue is a major headwind for US pork exports, as, over the last year, the US dollar has strengthened 20 percent to 25 percent against the euro and Canadian dollar, challenging US export competitiveness. This issue has been largely alleviated by the significant increase in US pork supply in the aftermath of PEDv in 2014, bringing US pork prices 40 percent to 50 percent below 2014 levels. Taking the variables of currency and domestic price, US pork remains very competitive in the global market against offerings from Europe and Canada.

As we look to 2016, the tight supply-driven price levels currently seen in China are likely to remain, given the continued declines in the Chinese breeding herd and the time delay before a meaningful supply response can take hold. If the trade levels we expect this December continue through 2016, then the US would export 720,000 tonnes, or 245,000 tonnes more than our expectation for 2015. This level of exports is unlikely though, as it implies about 6.5 percent of US pork production, which would likely trigger an increase in US pork prices, diminishing US competitiveness with Chinese domestic pork offerings.

Canada

Canada is expected to increase its exports to China by about 50,000 tonnes in 2015. With the close relationship with the US pork industry, the outbreak of PEDv in 20013 and 2014 drove pork prices across North America to all-time highs and producer margins in Canada along with it. But prices have since fallen, as the Canadian dollar has weakened against the US dollar, establishing Canadian pork as the most price competitive option of the three major pork exporters.

Like the US, Canada has also been affected by the ractopamine-free requirements of China and other important pork-importing countries. Many producers in Canada still use the feed additive, but with approximately two-thirds of Canadian pork production being exported, the industry has been far more willing to remove ractopamine from production.

Canada has additional ractopamine-free supply this year—and likely for the future—after Russia banned Canadian pork, along with most other Western food exports in August 2014. While this ban also hurt the EU and the US, Canada was the fourth-largest supplier of pork to Russia, sending 80,000 tonnes the previous year. Russia, who also requires ractopamine-free pork, accounted for more than 6 percent of Canada's pork exports and 4 percent of production before the ban.

Limited volumes are available from other pork-exporting countries

Of the other exporting countries, Brazil currently only has seven factories allowed to export to China. But with Russia having banned many other pork suppliers, Brazil has more export opportunities beyond China. Brazil could redirect part of this volume when it results in a clear higher price, but this isn't expected: Brazil exported only 842 tonnes of pork directly to China in 2015, and pork exports were only 122 tonnes during the first five months of 2015. Nevertheless, Brazilian pork exports to Hong Kong were around 111,000 tonnes in 2014 and 44,000 tonnes in the first five months of 2014.

Chile's pork exports to China have increased in the last few years. During 1H 2015, Chilean pork exports to China were above 26,000 tonnes and are expected to reach 60,000 tonnes in 2015, 30 percent above 2014.

China has gradually opened the door to allow more countries to supply pork in recent years. Following Ireland, Mexico has just been added to the list this year. Obviously, the Chinese government is taking a more flexible attitude towards pork supply, trying to diversify the sourcing channels at a controllable pace. The newly-added suppliers are expected to contribute to the import increase in 2015 and 2016.

Conclusion

The astonishing drop of the Chinese hog and sow herd will impact the entire global pork market in the remainder of 2015 and into 2016. Chinese pork production is forecast to plummet by 3.7 million tonnes (6.5 percent), to 53 million tonnes in 2015. With 1H production having declined by 1.3 million tonnes, we expect a production decline of 2.4 million tonnes in 2H 2015, strongly supporting further rising prices in China.

The total 3.7 million tonne drop in Chinese pork production in 2015 accounts for 6.5 percent of Chinese and 3.3 percent of the total global pork production in 2014. The resulting 1.9 million tonne Chinese supply gap forecast for 2015—with the 3.1 million tonne decline of Chinese pork consumption already factored in—will have a strong impact on the global pork market in the remainder of 2015 and into 2016, supporting higher prices and producer margins in 2H 2015. This is something which is also much needed in many pork-producing regions globally, due to the supply glut after recovery from the PEDv outbreaks in 2014 and the continuing impact of many trade bans.

The 1.9 million tonne Chinese supply gap implies a 600,000 tonne increase of pork and variety meat imports above the 1.3 million tonnes imported in 2014. Best positioned to gain from this extra demand are the leading exporters to China (the EU, the US and Canada), which all have sufficient volume available and are competitive on the Chinese market. We project exports from these countries to increase by 375,000 tonnes, 135,000 tonnes and 50,000 tonnes, respectively, in 2015.

This export opportunity is very attractive to a sector that has been under pressure in recent times. Capitalising on the opportunity will require processors and traders who have the right product at a competitive price; who can deliver in the coming months; and who can readily mobilise their supply chain—on the one hand, between the processor and trader in the exporting region and, on the other hand, the buyer, agent, cold-chain operator and distributor within China.

This report has been published in line with Rabobank's long-term commitment to international food and agribusiness. It is one of a series of publications undertaken by the global department of Food & Agribusiness Research and Advisory.