


Prices under Pressure in a Supply-Driven Market

Rabobank's Global Outlook for Animal Protein in 2017

December 2016

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Global Outlook 2017

Market
Supply-driven… with resulting downward pressure on prices

Production Outlook
A significant swing back to expansion
Pork drives global expansion

Seafood
Aquaculture continues to lead the blue revolution

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Market Summary

Of the many issues that will drive global animal protein in 2017, one stands out: We are in a supply-driven market that will place downward pressure on prices

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US

- Production continues to grow across the board, although at a slower rate. This will test consumers' appetite as consumption reaches record levels
- Export opportunities are increasingly important, but challenged by a strengthening US dollar and potential shift in trade policy with Mexico and China: two key destinations for US protein

Europe

- Production is slowly growing, while consumption remains stable, meaning exports need to rise
- In these challenging conditions, poultry is best placed, given its history of supply discipline. Pork and beef are more dependent on exports—and for pork, trade with China will continue to be a bright note

China

- China's pork production to pick up, but only in line with demand recovery, meaning imports will continue at record levels
- Demand also outpacing supply for beef and chicken, creating local and import opportunities, with the latter more prominent

Brazil

- Protein exports to jump by around 5% in 2017, driven by available supply and a weak Brazilian real
- Beef production to rebound in 2017, after increasing only slightly in 2016
- Grain prices in local currency are expected to decline in 2017, after pressuring pork and poultry industry margins in 2016

Australia

- With beef cattle herd rebuilding underway after years of drought-driven liquidation, beef production is set to decline by 2%, to the lowest level since 2003
- Beef exports to decline by 4% in 2017, to the lowest level since 2010
- Lamb export market demand to remain strong

New Zealand

- Despite beef production forecast to decline by 2%, farmgate prices are likely to weaken due to increased global beef production
- Lamb market remains under pressure due to strong NZ dollar, but demand signals are improving

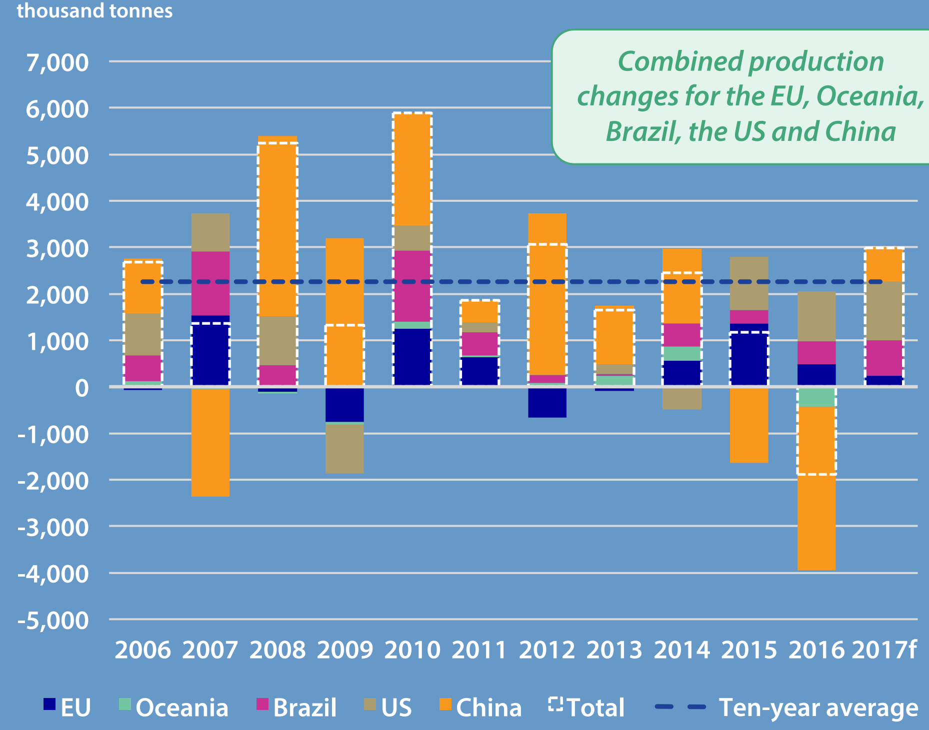
Source: Rabobank 2016

Production Outlook

A Significant Swing Back to Expansion

Strong production increases in China will drive the balance back to above-average growth. Brazil and the US are also expecting significant production increases

Strong production increase driven by Brazil, China and the US



- Expected increases in Brazil, China and the US will push global production above the ten-year average in 2017
- Production is expected to expand across all species in Brazil and the US. In China, it is only set to expand in pork
- In the EU, a small expansion in production is expected, while in Australia and New Zealand, we should see a minor contraction

Source: USDA, Rabobank 2016

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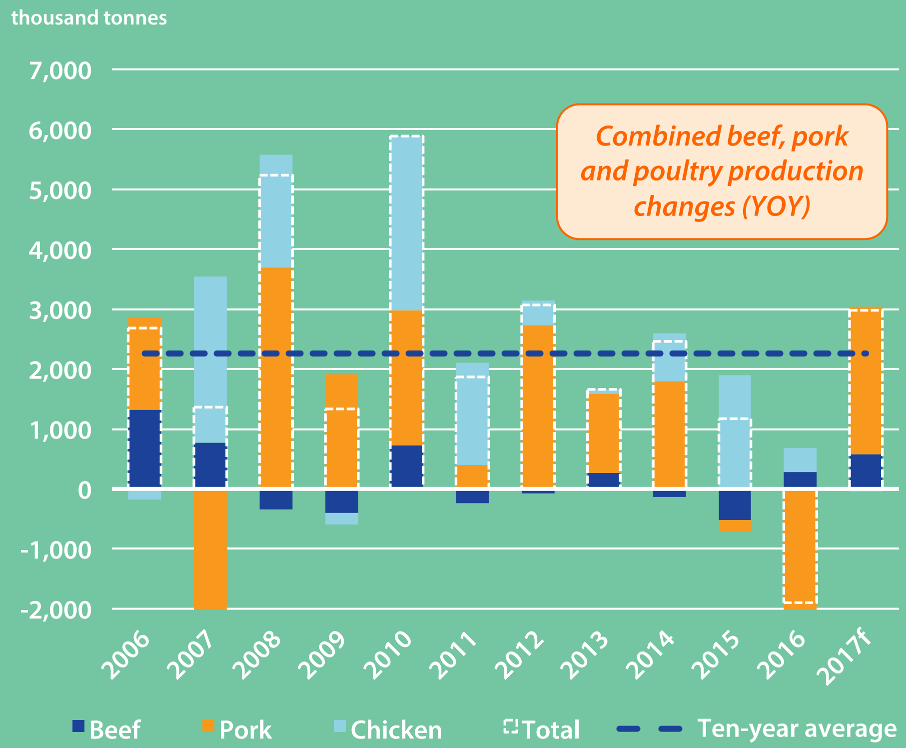
Pork production expansion main driver of the global balance



- Global pork production is expected to expand markedly in 2017, led by a rebound in China, where pork production has contracted in 2016
- Global beef production is also expected to expand in 2017, following a smaller increase in 2016
- In contrast, global poultry production is expected to shrink slightly in 2017, after three years of expansion

Source: USDA, Rabobank 2016

Production Outlook
Pork Drives Expansion

China's bounce back from a decline in 2016 makes a significant difference—with a lower, but material, increase in the US as well

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Aquaculture Continues to Lead the Blue Revolution

Growth in seafood is all about aquaculture, as wild-catch fisheries are stable—in volume and price terms

Aquaculture driving growth in seafood… but it's slowing down

Aquaculture continues to be the world's fastest-growing protein industry.

As this industry gradually matures, the rate of supply growth is expected to slow to 3% to 5% per year, down from the 5% to 8% rate seen in recent years. China, the world's leading aquaculture nation, remains the main driver of growth. The country's aquaculture industry expanded rapidly in the past, but growth has now slowed to 2% to 3% per year.

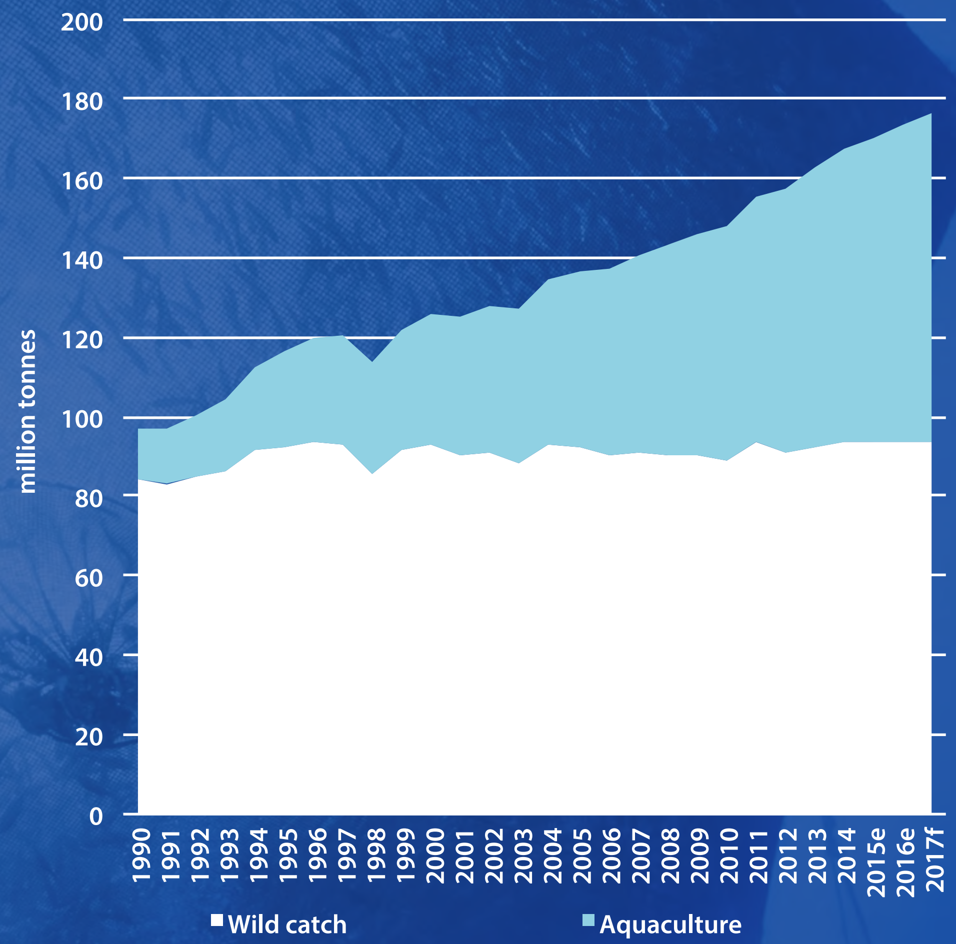
Global seafood demand is expected to grow at about 2% per year. In 2015, aquaculture overtook wild catch to supply over half of seafood consumed. Given that the wild-catch sector is stagnant, this means that aquaculture will need to grow by at least 4% per year to satisfy global seafood demand growth.

Wild catch supply stable… and expected to remain that way

Globally, the wild-catch industry has had fairly stable supply for some time. There are many local dynamics, and in some regions, supply is declining—for example, due to the effects of El Niño or overfishing. However, sufficient fisheries are now recovering to counteract these local issues, resulting in an overall stable supply situation.

Despite the lack of volume growth, most large industrial wild-caught species—such as skipjack, yellowfin tuna, mackerel, herring, Alaska pollock and Atlantic cod—are not experiencing a notable rise in price. These industries have failed to stimulate demand in the same fashion as the leading aquaculture species—such as Atlantic salmon and marine shrimp—have.

Aquaculture: the driver of global seafood supply



Source: Food and Agriculture Organization of the United Nations, Rabobank 2016

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Key Animal Protein Markets in 2017

North America

Production continues to grow

Brazil and Argentina

Increased production and exports across the board

EU

Exports and supply discipline are key

China

Large pork imports to continue

South-East Asia

Strong demand meets an expanding supplier base

Australia and New Zealand

Supplies rebuilding

Seafood

- *Salmon market to continue the supercycle*
- *Shrimp industry to continue the recovery started in 2015*
- *Fishmeal production should improve, and prices will soften*

North America: Production Continues to Grow

Expanding production creates a strong case to improve trade, as per capita consumption in the US reaches saturation levels

Large domestic protein supplies in store for 2017

Large to burdensome feed grain supplies and large forage supplies are expected to be drivers for additional growth in protein production in 2017. Total domestic protein consumption will be up against all-time record levels.

US election results have created uncertainty in trade

Initial domestic market reaction to the recent US elections has been incredible. The US dollar index reached ten-year highs, the Dow Jones Industrial Average peaked at an all-time high, and agriculture commodity prices have been mixed.

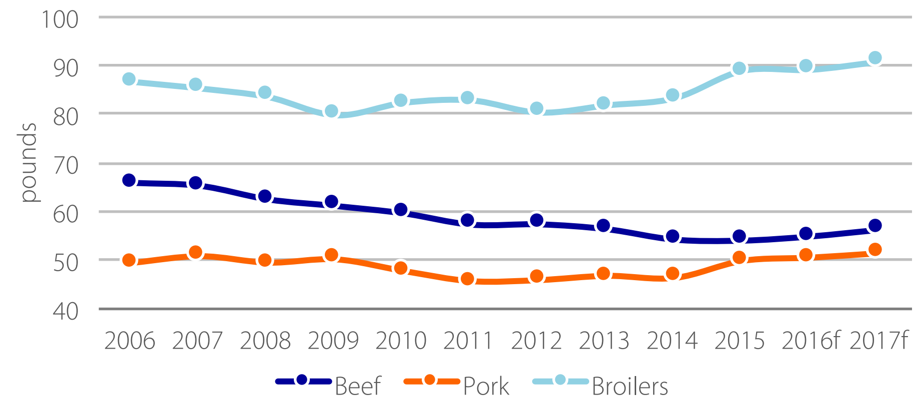
One concern with the US dollar gaining in value is the pressure this places on the needed escalation in export sales for the coming year.

More growth in beef production ahead

After posting a 4.5% to 5% growth rate in 2016, US beef production is expected to grow by an additional 2.5% to 3.5% in 2017. With less volatility in supply and a more certain outlook, we expect the large swings in cattle prices the market has experienced for the last 18 months to subside, bringing opportunities for better marketing and margins.

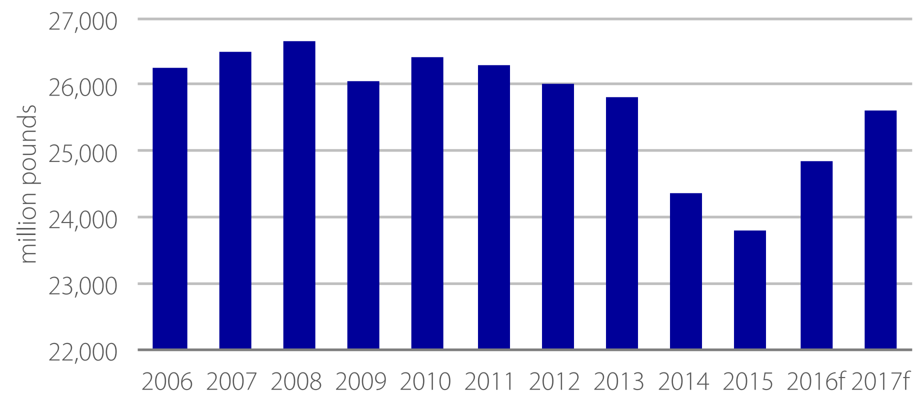
In Mexico—as supplies have dwindled and the domestic demand for feeder cattle has climbed—an increasing number of cattle have remained in Mexico. The recent surge in the value of the US dollar should be cause for increased shipments to the US from both Mexico and Canada in 2017.

US domestic per capita consumption reaching capacity



Source: USDA-AMS, LMIC, Rabobank 2016

Annual US beef production expected to be higher in 2016 and 2017



Source: USDA-ERS, Rabobank 2016

North America: Pork and Poultry Production Growth Expected

Both the US and Mexico are expecting growth in 2017. This will create downward pressure on prices unless export opportunities are secured

US poultry industry expansion to continue

With the US poultry sector enjoying its fifth consecutive year of positive returns, we expect industry growth in 2017 at a rate of 2% to 3%, up from 1.5% in 2016. A key shift is for growth to be driven by increasing bird numbers rather than bird weights. Since 2010, poultry production in the US has risen by close to 8%, with every bit of that growth coming from weights. Going forward, bird weights may grow, but at a much slower rate. We expect three or four plants to ramp up or come online during 2017, which will drive the increase in bird numbers.

Mexico will also see expanded production, to the tune of 3% growth in 2016 and another 2.5% growth in 2017. With the weakening of the Mexican peso, this will help limit the pricing pressure of imported dark chicken meat.

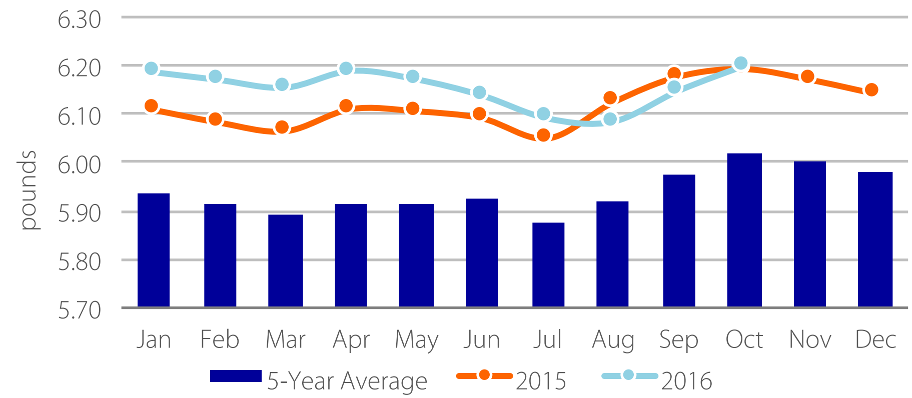
North American pork supply climbing across the board

The US and Mexican pork sectors are expanding supply, with the US in the process of bringing five new plants online over the next two years and Mexico expanding its breeding herd.

US pork production will increase by 3% this year, but with the outlook of lower hog prices in 2017, we expect growth to slow to 2.5% in 2017. As the new US plants come online in 2H 2017, packers will need to find a profitable market for the increased product to avoid pressure on prices and margins.

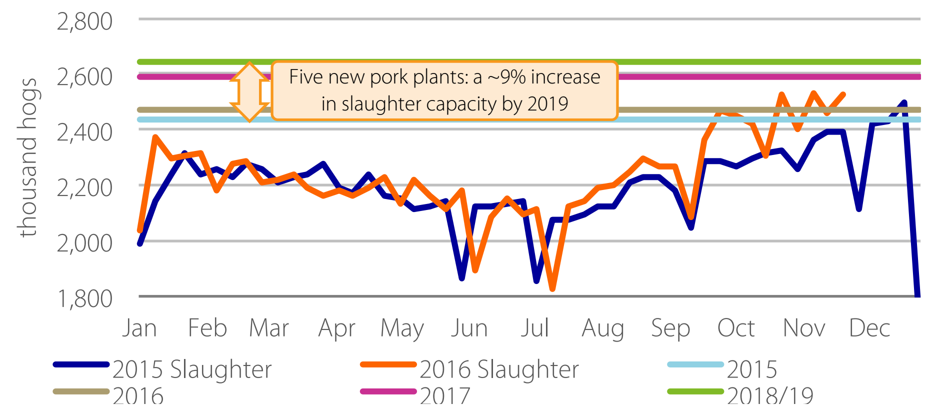
Mexico could see similar growth as the breeding herd expands by 50,000 sows, but PEDv continues to be a major issue. If PEDv stunts growth and productivity in Mexico, we could see minimal expansion n 2017.

Average US broiler weights have plateaued



Source: USDA, Rabobank 2016

Weekly US hog slaughter continues to climb



Source: USDA, Rabobank 2016

Brazil and Argentina: Beef Exports to Increase in 2017

Beef production in Brazil is expected to increase by 3% in 2017, which can pressure local cattle prices

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Key drivers for Brazilian beef

Trade. The fresh beef trade agreement between the US and Brazil was finally ratified in 2016, and in 2017, Brazil will try to open other markets that often use the US as a reference for import standards, such as Canada, South Korea and Japan.

Domestic market. After two years in recession, Brazilian GDP is expected to resume growth in 2017. This, in turn, should support an initial recovery in domestic meat consumption, particularly in 2H 2017.

Costs. After having hit record levels during 1H 2016, domestic corn prices are expected to decline in 2017, as the domestic summer corn crop is anticipated to result in a 10% YOY increase in volume. This, coupled with projected lower feeder cattle prices, should support an increase in intensive production systems in Brazil.

Cattle prices. Export performance in 1H 2017 will be crucial for local prices, as beef supply is expected to increase by 3% in 2017, and domestic demand will probably only start recovering in 2H 2017.

Argentine beef sector

Argentina is ready to start increasing beef production in 2017. This is possible due to significant female retention made in Argentina over the last quarters.

Exports. Thanks to a very positive international reputation as a high-quality producer, Argentina is expected to convert higher beef production into higher exports, particularly to China, the EU, Chile and Israel.

Source: USDA, Rabobank 2016

Brazilian beef exports will try to find new destinations in 2017

Source: USDA-AMS, LMIC, Rabobank 2016

Argentine beef exports to start strong recovery

Source: USDA, Rabobank 2016

Brazil: Poultry and Pork Exports to Increase in 2017

Poultry and pork production are set to increase by 3% in 2017, after the supply adjustment in 2016

Domestic market. Considering the projected positive Brazilian economic scenario in 2017, Rabobank expects an initial recovery in local meat consumption, particularly in 2H 2017. This, in turn, should keep domestic poultry and pork prices firm. During 1H, however, export performance will also be crucial for local prices, as an increase in supply is expected for both chicken and pork.

Feed costs. Domestic corn prices are expected to decline in 2017, as the domestic summer corn crop is anticipated to result in a 10% YOY increase in volume. Additionally, Brazil is now able to import GMO corn varieties from the US, which represents a 'corn price hedge' if the national crop disappoints.

Brazilian poultry trade. Increasing Brazilian poultry exports to Asia and MENA will continue during 2017. However, stronger competition is expected in 2017, as the US could regain access to the Chinese market—where Brazil became the main chicken exporter in 2016—after the embargo on American poultry and breeding stocks due to avian influenza restrictions.

Saudi Arabia is likely to continue to be the largest destination for Brazilian poultry, followed by China, Japan and the EU.

Brazilian pork trade. After only totalling about 5,000 tonnes in 2015, Brazilian pork exports to China are booming in 2016, exceeding 69,000 tonnes between January and September. This has provided Brazil with the opportunity to present itself as a competitive option for Chinese pork importers. As a result, Brazilian pork exports to China are expected to exceed 100,000 tonnes in 2017. The country will become the third main destination for Brazil, behind only Russia and Hong Kong.

Brazilian chicken exports will continue to increase in 2017

Source: USDA, Rabobank 2016

Brazilian pork exports to sustain strong levels in 2017

Source: USDA, Rabobank 2016

EU: Exports and Supply Discipline Key in a Challenging Market

Processors challenged to remain competitive against a backdrop of stable domestic demand. Access to export markets is critically important for processors

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Poultry to remain the bright spot, while pork and beef face challenges

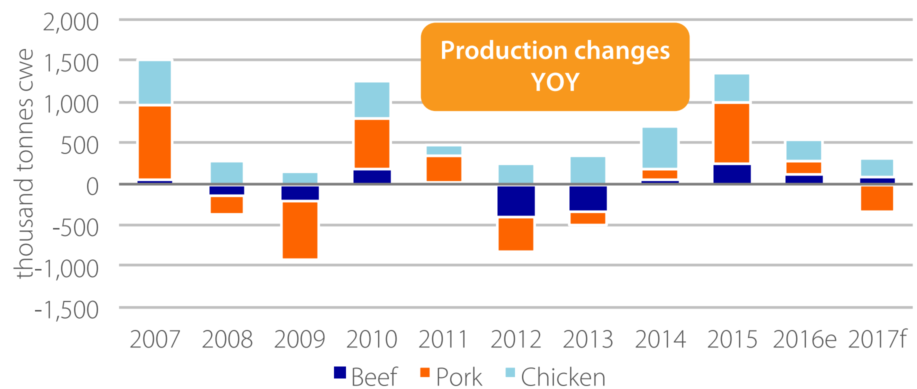
The EU market will continue to be driven by its export performance, especially in the oversupplied pork and beef markets, where demand is stable and exports determine the final price level. For poultry, the prospects are better—but supply discipline is also key here, given rising competition from cheaper beef.

Pork. The reduction of the sow herd in 2016 will continue to impact the market in 1H 2017. The expected 1.5% production decline will support elevated price levels into summer, with exchange rates and resulting export performance the main wild cards influencing prices. For 2H 2017, continuing supply discipline will be key, given the recovery in Chinese production and strong competition in export markets from the Americas. Processors should focus on safeguarding sourcing and Chinese access.

Poultry. The EU poultry industry is expected to keep growing by 1.5% in 2017, which is slightly below the 2% to 4% growth of the past years. The shift to animal welfare-friendly chicken concepts in Western Europe will restrict local production growth. The Central and Eastern European (CEEC) poultry industry will further expand in 2017, as it cements its role as the main supplier of standard chicken in the EU. Key for margin developments will be a balanced, not too optimistic growth in the CEEC. Exports will keep growing, and this is beneficial for optimising composite chicken prices. But for any poultry producer, the EU market should be the primary focus—not exports.

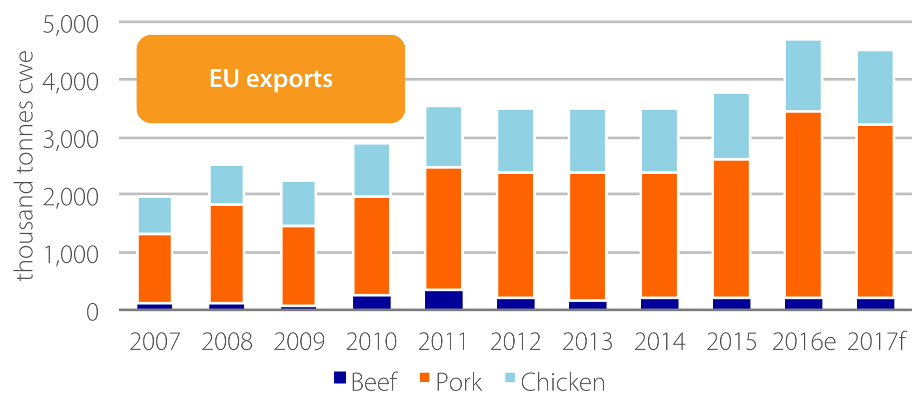
Beef. Cattle supply will continue to rise, with the availability of dairy cows remaining high, driven by low prices and, especially for the Netherlands, rising manure challenges. This will continue to place soft downward pressure on prices, which will be exacerbated by increasing competition in export markets. With ample supply, processors need a market-oriented (rather than supply-driven) strategy.

Supply discipline needed to support elevated price levels



Source: European Commission, Rabobank 2016

Exports remain important and at elevated levels, despite competition



Source: European Commission, Rabobank 2016

China: Large Pork Imports Will Continue in 2017

China's domestic production will rebound in 2017, in line with a demand recovery. As a result, imports will continue at the same level as in 2016

The nature of consumption is changing—volume growth is slowing, and value is more important

China plays an increasingly important role in the global pork market. We forecast that, in 2017, China will remain the world's largest pork importer, with an import requirement at the same level as 2016, at 2.7m tonnes.

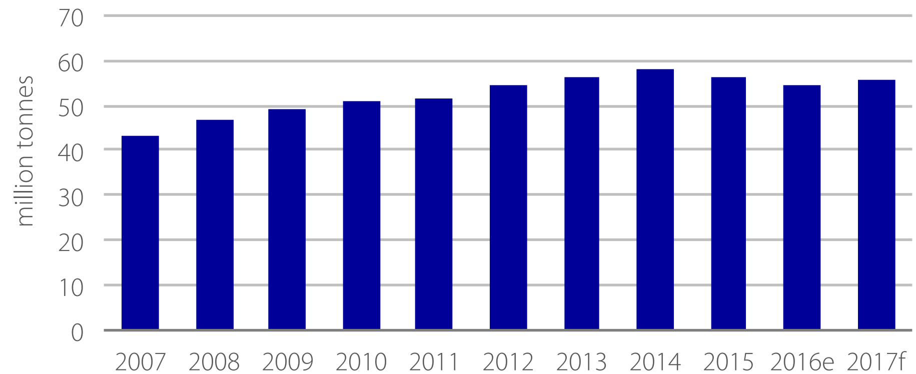
Pork consumption volume growth is slowing down. CAGR of total pork consumption is expected to drop below 1% for 2015-2020. In comparison, CAGR in 1996-2005 and 2006-2014 was 4.3% and 2.8%, respectively.

Future volume growth will mainly come from low-income groups in urban and rural areas. Pork consumption in middle- to high-income groups is already saturated, with these consumers turning to higher-value products.

China's domestic production is expected to rebound by 2% in 2017, mainly driven by the expansion of larger-sized farms. However, production growth will be restricted by the roll-out of environmental protection measures that restrict land access and increase production costs. Independent small farms will continue to exit the market, in the face of competition on efficiency and cost from larger farms.

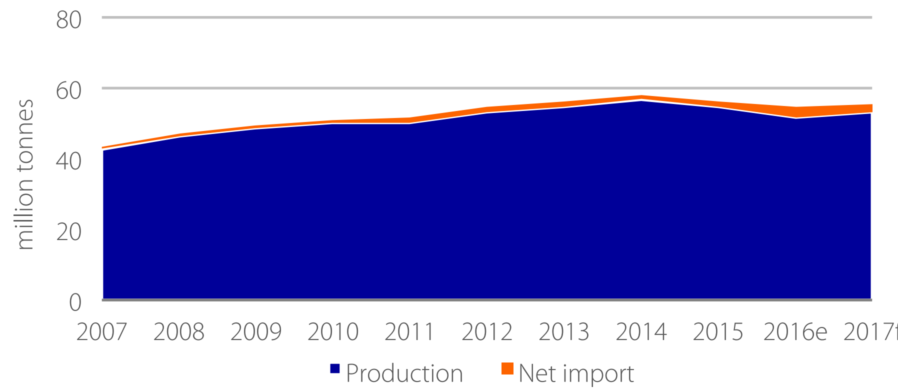
China will further expand the number of countries and certified plants that it can import from. While EU members and the US will continue to be the major suppliers, other countries—such as Brazil, Canada and Mexico—will likely increase shipments to China in 2017.

China's pork market growth has slowed, but is rebounding



Source: China Statistical Yearbook 2015, Rabobank 2016

Pork imports for next year will remain at the 2016 level



Source: National Bureau of Statistics of China, China Customs, Rabobank 2016

China: Poultry and Beef Imports Will Also Grow

Poultry supply is constrained by a lack of breeding stock. Although some production will grow, imports will balance the market. Beef production remains well behind demand

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China's poultry demand will bottom out as the economy stabilises

As the economy stabilises in 2017, the decline in white-bird demand from industrial consumers will likely bottom out. At the same time, home consumption and food service will show steady growth. Demand for yellow bird—perceived as a premium—will grow faster than white bird.

Overall, we expect total poultry production to increase slightly in 2017. White-bird production is expected to drop by 10%, due to the low supply of grandparent stock, offset by rising yellow-bird production, spent hens and water fowls. Imports of cuts are expected to increase by 30% to 40%.

It is still uncertain as to when China will lift the ban on the US and France. Given the worldwide AI issues, China may not lift the ban on other countries in the short term, so imports of grandparent stock will continue to be low in 1H 2017.

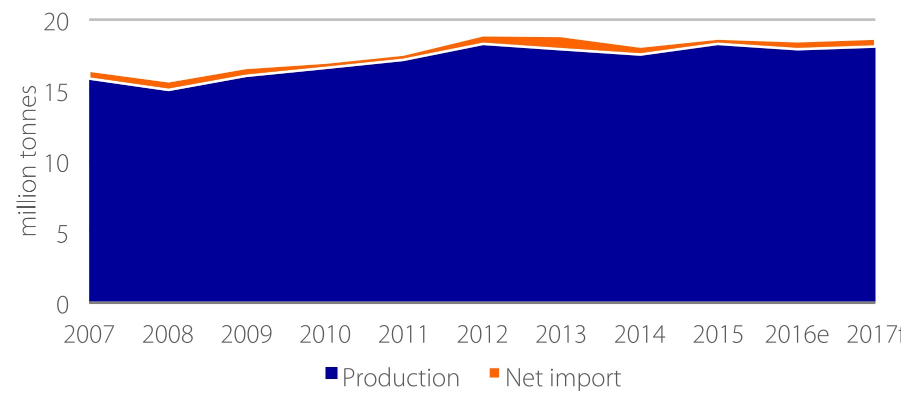
China's beef imports will continue to increase in 2017

China's beef market growth is expected to remain weak in 2017, as income growth slows and beef prices are still high. However, different niche markets will react differently. Middle- to high-income groups will maintain steady growth, while the mass market continues to be elastic when it comes to price.

Beef production is expected to be flat in 2017. Severe weather reduced hay and straw availability in winter 2016, leading to the early culling of female cattle in some regions, impacting the cattle herd in 2017.

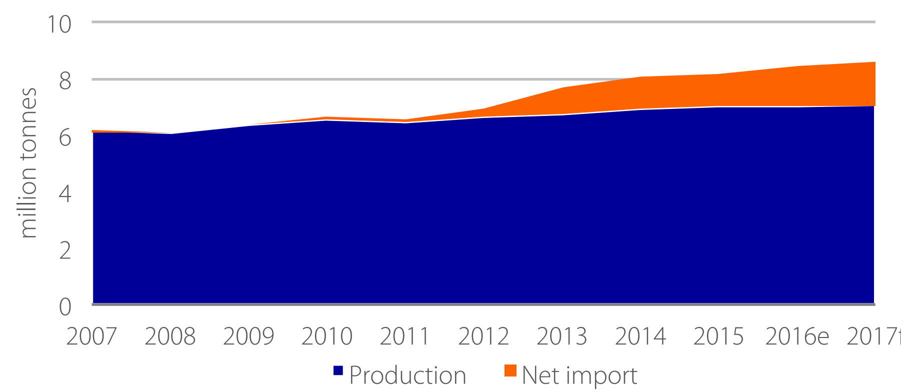
China's beef imports will likely increase further in 2017, due to low domestic production. US beef may start to be shipped to China in 2017, but the volume will take time to reach meaningful numbers.

Poultry supply can be largely self-sufficient, but imports still needed



Source: National Bureau of Statistics of China, China Customs, Rabobank 2016

Beef imports will increase steadily as production remains flat



Source: National Bureau of Statistics of China, China Customs, Rabobank 2016

South-East Asia: Strong Demand Meets an Expanding Supplier Base

Poultry production is rising in response to strong local demand, as well as to export opportunities. Beef demand will continue to be met by imports, with an expanding group of suppliers

Key themes for South–East Asia poultry and beef

Investor interest in poultry remains, but oversupply a risk

The Thai poultry industry is targeting another 6% growth in exports, to 700,000 tonnes, directed at Japan, the reopened South Korean market and the EU. It will be challenging to achieve this, given the ongoing strength of the baht and a weak domestic market—but the reputation of Thai chicken should prevail.

The Indonesian poultry industry is being challenged by the end of the culling programme, with falling prices amid increasing supply. Another 4% to 5% growth is expected in 2017, but disciplined growth is needed to achieve this profitably.

India's poultry outlook should remain good as long as expansion is not too fast, in response to lower feed prices, and if recent avian influenza outbreaks remain limited to the current Delhi and Kerala areas.

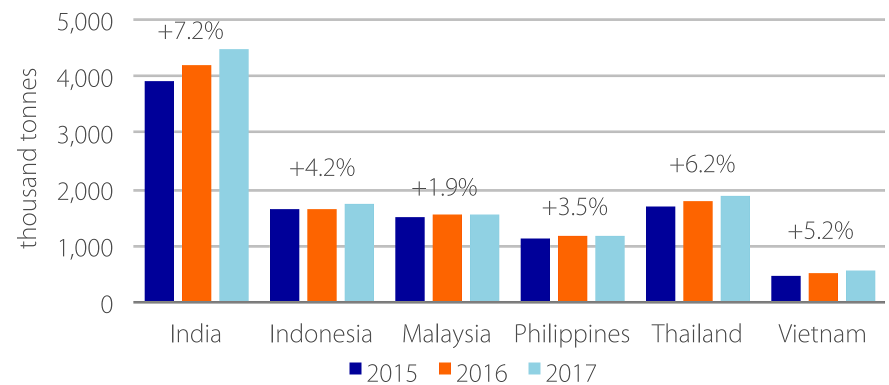
Beef demand rising on the back of population and income growth

South–East Asian beef demand continues to rise, particularly for halal meat, backed by generally positive economic drivers and a steadily increasing population.

Two distinct consumer groups can now be identified: the value-based consumer (driving street food and household consumption of cheaper cuts) and the premium consumer (driving a more western style of dining, such as the increasingly popular steakhouses).

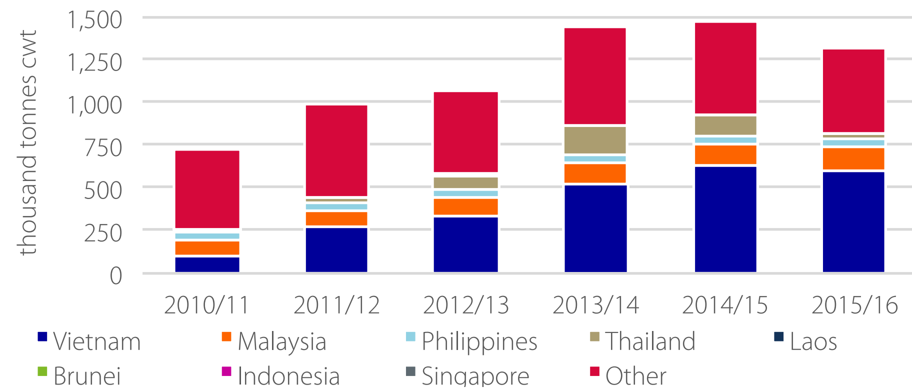
Domestic demand continues to outstrip domestic production, so imports remain important. Constrained supply and higher prices of cattle will put pressure on imports from Australia. Meanwhile, softer global beef prices and the ongoing production of bovine meat in India may lead to increased imports from India or alternative beef-producing countries.

Poultry production growing steadily across the region



Source: APEDA, Rabobank 2016

Indian buffalo meat exports—SE Asia the critical market opportunity



Source: APEDA, Rabobank 2016

Australia and New Zealand: Supplies Rebuilding

Beef production to remain restricted as a result of herd rebuilding.
Lamb market fundamentals sound despite some headwinds

Beef industries to rebuild

Both Australia and New Zealand are again expected to see restricted beef supplies in 2017. Following a contraction in cattle slaughter and production volumes in 2016, a herd-rebuilding process following drought and lower dairy prices are expected to limit the availability of cattle. This is likely to keep domestic prices firm, although softer global prices are forecast to exert downward pressure on cattle prices. While processing margins will remain under pressure in 2017, we expect some improvement after a difficult 2016.

Lamb market fundamentals strong

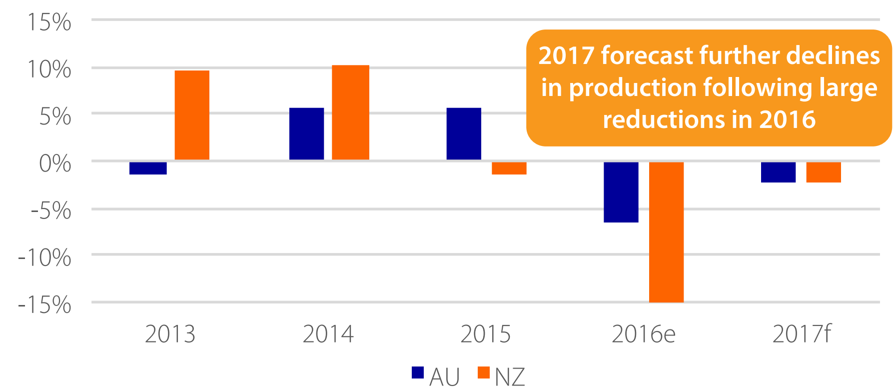
New Zealand Demand fundamentals moving into 2017 are much improved after a challenging 2016, given high domestic production in key export markets of China and the UK. However, the strong currency is expected to be the major impediment to improved returns in 2017. The sheep flock is forecast to remain relatively unchanged in 2017, reversing a five-year trend of decline.

Australia Ongoing strong demand from the domestic market and a diversified export base will support the lamb market throughout 2017. High domestic beef prices and lower seasonal swings in production are also helping to support demand. Flock numbers are forecast to increase marginally in 2017.

Poultry production growth, domestic consumption reaching peak

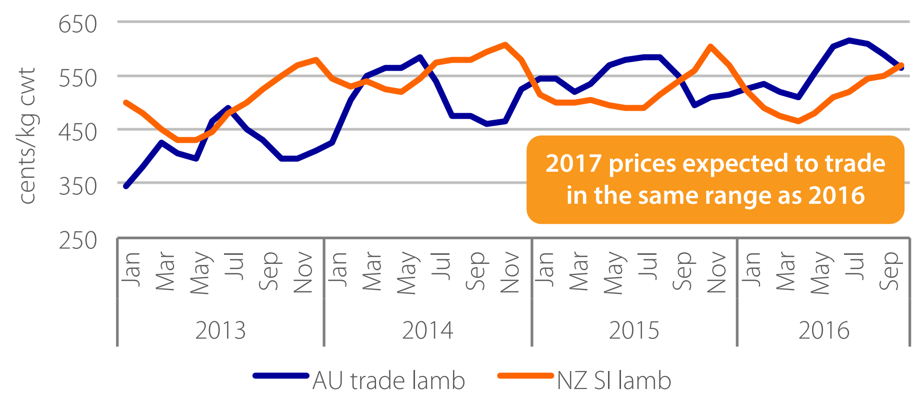
Poultry production is expected to continue to increase, supported by cheap feed, improving efficiencies and new capacity. However, this increased supply will create margin pressures unless alternative markets are developed.

Beef production restricted in line with 2016 volumes (YOY change)



Source: Statistics NZ, MLA, Rabobank 2016

Lamb price outlook steady, currency the challenge for NZ returns



Source: MLA NLRS, AgriHQ, Rabobank 2016

Salmon Market to Continue the Supercycle

Salmon will return to growth in 2017. But while prices will soften, they will remain at levels that offer profitability to the industry

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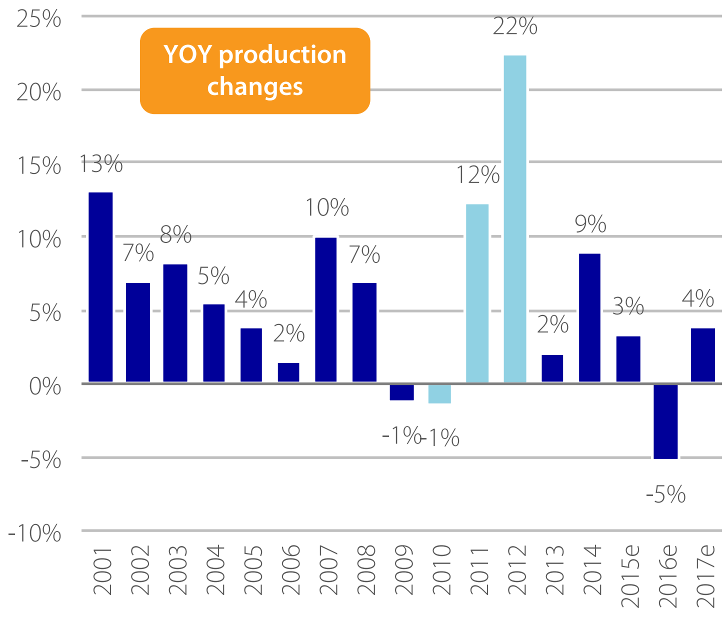
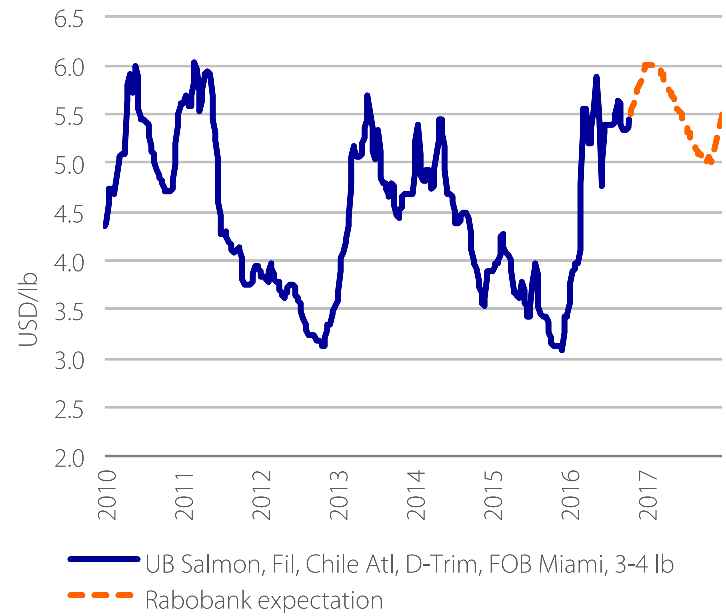
Global supply of Atlantic salmon to bounce back in 2017



Chilean salmon filet prices in the US to remain high



The global salmon industry experienced an unprecedented contraction in 2016 due to an algae bloom in Chile and problems with lice in Norway.

The expectation is that, in 2017, supply will recover, but not fully, due to legislative limits (in Norway) and the long-tailed effects of the algae bloom in Chile, which eliminated biomass (as well as legislative limits).

Despite the current high price levels, we do not expect a strong supply response, as was common in the past, extending the so-called 'supercycle'.

The supply contraction sent prices to record-high levels. For the Chilean industry, this meant a return to profitability, while it supported record profits for Norwegian farmers.

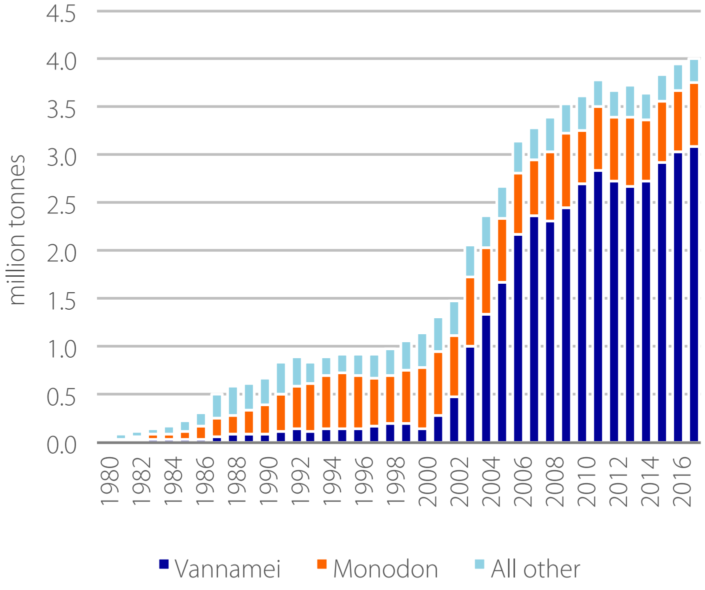
Despite the supply recovery, prices are expected to be supported at least until mid-2017. After this, prices should follow the seasonal decline, but will not fall to the low seen in late 2015, as we do not expect supply to grow above demand in 2017.

Source: Kontali, Urner Barry, Rabobank 2016

Shrimp Industry to Continue Its Gradual Recovery

The path ahead for the shrimp industry is one of gradual growth—provided the industry does not generate a strong supply response to rising prices, and disease pressures are well managed

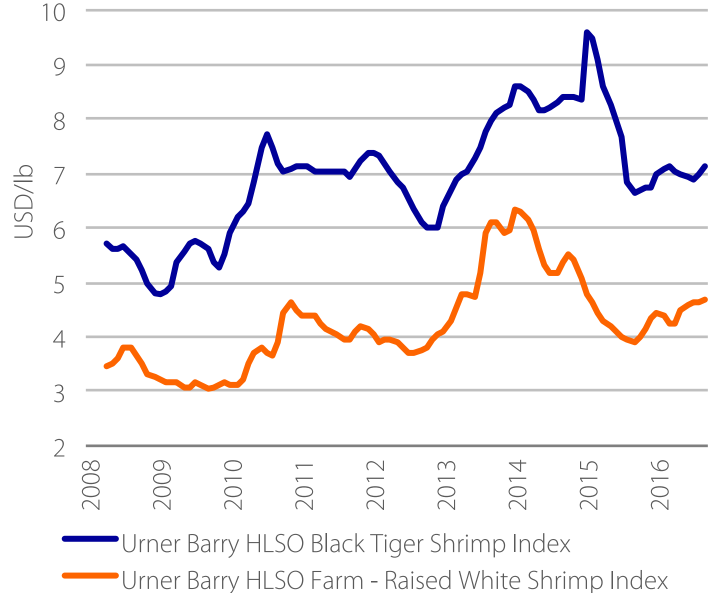
Supply of marine shrimp continuing the gradual recovery from EMS



The global shrimp industry is continuing the recovery from the EMS (Early Mortality Syndrome) outbreak in 2014. The combination of new technology, genetics, husbandry techniques, new medications and farm design changes has reduced mortality, and the industry has learned how to deal with the EMS bacteria. Simultaneously, regions that have not had EMS, such as India and Ecuador, are showing growth.

Rabobank expects the recovery to continue in 2017, provided there are no new outbreaks of disease.

Shrimp prices recovering from the low point reached in early 2016



EMS had a pronounced impact on shrimp prices. Prices bottomed out in late 2015, but at those levels, supply growth in some higher-cost regions was discouraged. With a three-month production cycle, prices and supply are closely linked in the shrimp industry, even in the short term.

There is sufficient momentum in supply growth to prevent any major price increase. We do not expect any new price peaks for the next two to three years, provided the current dynamics continue.

Source: Food and Agriculture Organization of the United Nations, Urner Barry, Rabobank 2016

Fishmeal Production Is Growing, and Prices Should Soften

With El Niño receding, fishmeal production should improve, and prices will soften—
or at least not continue the historical upward trend

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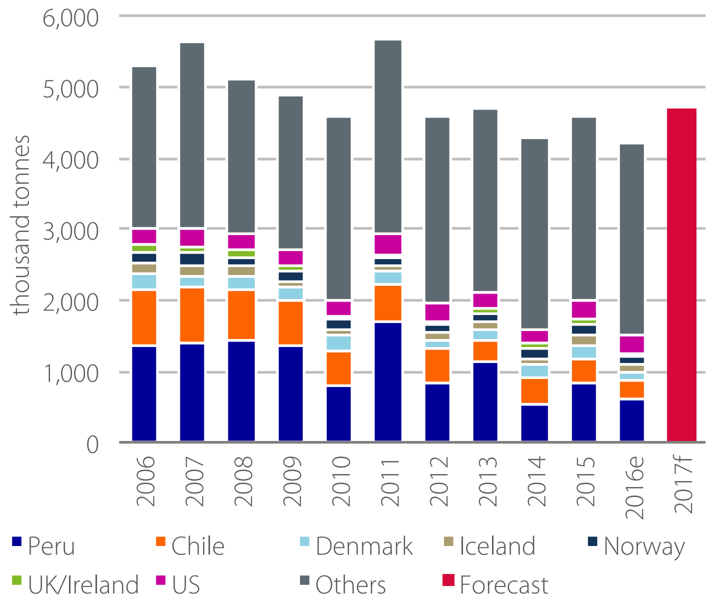
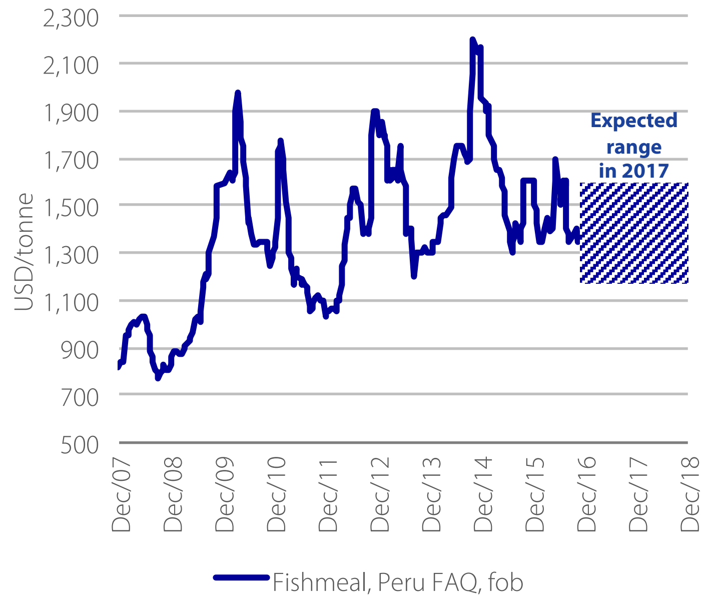
Long-term decline in fishmeal production should halt in 2017



Fishmeal prices likely to move sideways after correction in late 2016



In 2016, Peru suffered yet another season with fishery closures due to El Niño, bringing global fishmeal (FM) production to a new low. The expected recovery of the fishery was delayed by biomass measurement issues, while later in 2016, large numbers of juveniles have been preventing full utilisation of the TAC during the second fishing season.

Expectations are that TACs in Peru will be normalised, to 2m to 3m tonnes per season from 2017 onwards. Consequently, yearly production in Peru should return to approximately 1.0m to 1.4m tonnes of fishmeal.

The supply recovery in 2017 should limit the historical price growth trend. Prices of FM are likely to fluctuate between USD 1,200/tonne and USD 1,600/tonne (FOB Peru 64% protein). Larger TACs and a higher catch rate in Peru could cause further price weakness, although demand is also expected to recover.

Chinese FM demand is expected to increase due to the recovery of the shrimp industry and overall growth of the aquaculture industry. Also in 2017, we expect the salmon industry to resume growth, contributing to FM demand.

Source: Kontali, Oil World, Rabobank 2016

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Key Drivers of Growth in Global Animal Protein in 2017

3

Trade
Increasing, but more complex

Margin shift
Market power is changing

Value-adding
The focus increases further

Changing production models
More complexity ahead

Alternative proteins
Market to remain small

Wild card for 2017

Growth could be affected by renewed concerns about the health impacts of meat consumption—and in particular, the link between certain types of cancer and consumption of red and processed meat

Trade: Increasing, but More Complex

Trade agreements remain hard to reach… and even when they have been secured, technical barriers often persist, and currency markets distort competitiveness

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Themes in global animal protein trade

Global trade in animal protein is expected to increase; however, a number of themes will affect this balance, creating a complex trading environment.

Free-trade agreements: more emphasis on bilateral negotiations

With the new US government entering office, it is unlikely the Trans-Pacific Partnership will be ratified. Given the difficulties in securing plurilateral agreements, governments will instead focus on bilateral trade agreements.

Market access developments changing the playing field

Important market access changes in 2016 often included Brazil or China. Both countries want better access: Brazil to export markets and China to suppliers.

Technical Trade Barriers (TTBs) still plentiful

While access is opening under plurilateral and bilateral trade agreements, TTBs continue to heavily influence the timing and complexity of trade in practice. TTBs are relatively unregulated, and given the current ‘protectionist’ rhetoric that is leading global politics, they are likely to continue to distort trade flows.

Currency relativities remain important

Currency cross rates are crucial in defining returns in local currency terms and in establishing competitiveness in trade markets. While financial markets expect short-term US dollar strength, the key theme in currency markets in 2017 is volatility. Currency movements depend on political actions, along with decisions by central banks that support growth. We are learning to expect the unexpected.

Key changes in trade expected in 2017

- China: flat (pork) and up (beef, poultry)
- US: down (beef)
- Japan: up
- South Africa: up
- Russia: down (pork and beef)

- Brazil: up (beef, pork and poultry)
- EU: up (beef, pork and poultry)
- Argentina: up (beef)
- Australia and New Zealand: down (beef)
- US: up (beef, pork)

Currency relativities influence competitiveness in trade

	05 Dec	1m	3m	6m	9m	12m
EUR-USD	1.07	1.11	1.11	1.14	1.10	1.09
USD-BRL	3.46	3.24	3.28	3.49	3.75	3.80
USD-MXN	20.6	19.0	18.6	18.7	17.8	17.0
USD-JPY	114	103	103	108	114	123
USD-CNY	6.88	6.76	6.68	6.56	6.51	6.42
AUD-USD	0.74	0.77	0.76	0.74	0.74	0.72
NZD-USD	0.71	0.73	0.73	0.69	0.68	0.66
USD-IDR	13,430	13,068	13,153	13,376	13,135	13,873

Source: Rabobank 2016

Margin Shift: Market Power Is Changing along the Supply Chain

Supply-driven market conditions change the balance of market power along supply chains, to benefit buyers

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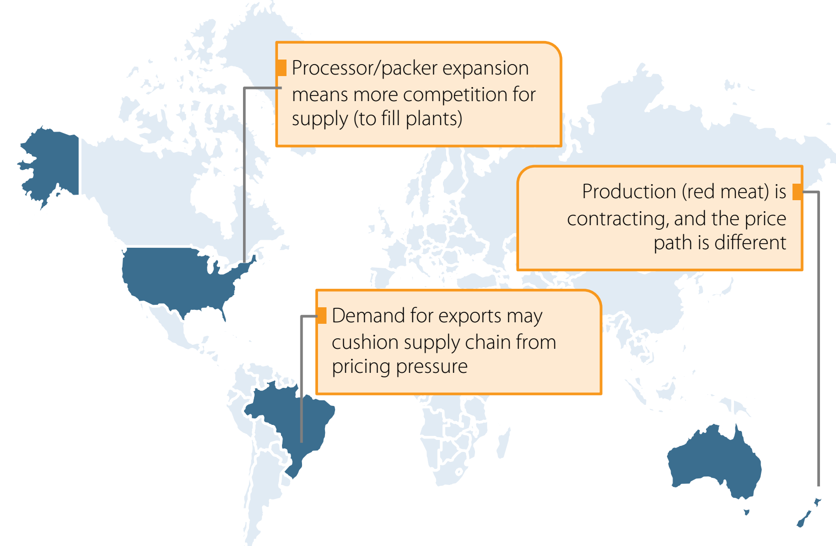
As supply increases, market power moves downstream, shifting margin pressure

Farm inputs → *Producer* → *Processor* → *Value-added processor or trader* → *Retailers and food-service*

Market power can move upstream

Market power moves downstream in response to growing supply

Regional differences can disrupt the general pattern



As supply increases, market power and margin pressure changes

Farm inputs	Producer	Processor	Value-added processor or trader	Retailers and food-service
+/- More demand for inputs, but lower ability to pay	- More competition at processor level	+/- More competition and buyers pressure prices	+ More competition generally pushes down prices	+ Competition pushes down prices

Business responses and opportunities are in three main areas

Strengthen supply chains

- Strong, coordinated chains can better manage margin pressure

Focus on niche markets

- Market power can be different, such as in export markets, for premium products

Value-adding

- Capture more margin along the chain

Source: Rabobank 2016

Value-Adding: The Focus Increases Further

Facing a more competitive market, companies are looking to protect and grow margins by adding more value to animal protein products

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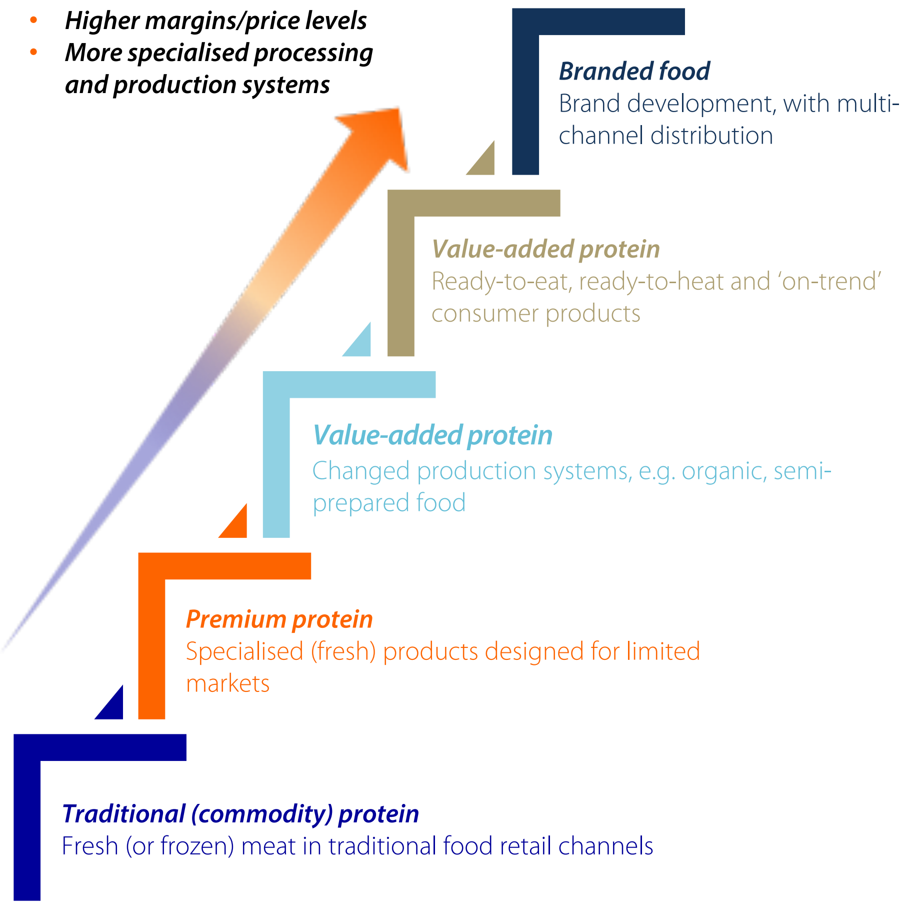
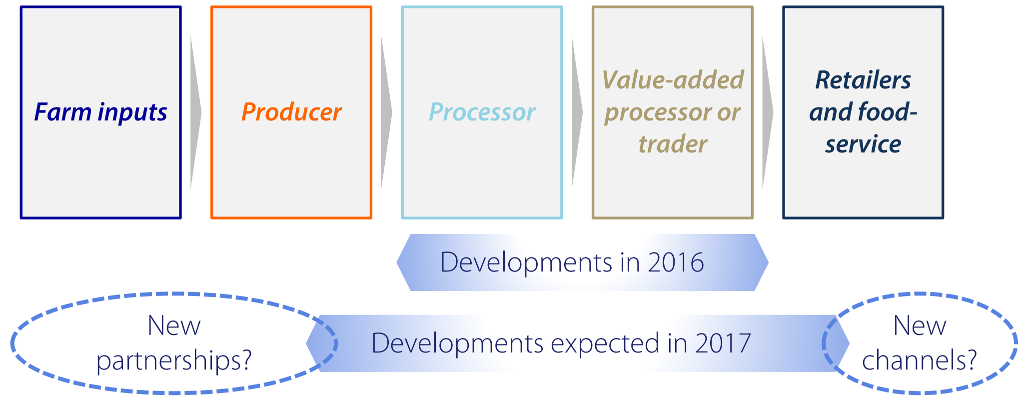
The value-adding pyramid continues to evolve—poultry and seafood are leading



Focus on value-adding results from pressure on margins and increasing competition



Business responses and opportunities are in three main areas

Consolidation of value-added players

- To strengthen approach to the market and acquire specialised capabilities

New supply chain partners

- To increase control
- To ensure agility in responding to opportunities

Brand development and marketing

- To support the investment in processing and supply chain

Source: Rabobank 2016

Production Systems and Supply Chains: More Complexity Ahead

Pressure on the animal protein sector to adapt production models and supply chains is not new, but is expected to increase in 2017—principally in response to consumer concerns around health issues

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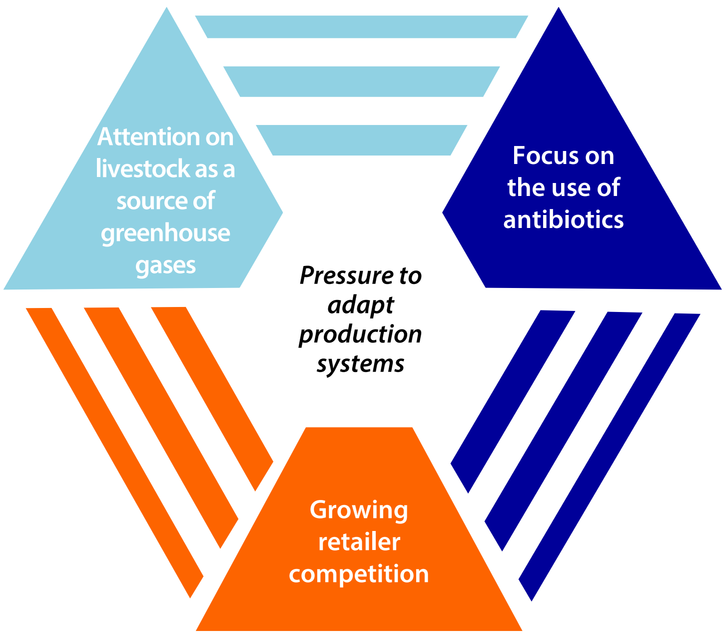
The use of antibiotics is set to become a stronger driver of change



From both consumer and regulatory points of view, focus is growing on the use of antibiotics in animal protein production.

We expect this will increase materially in 2017, as governments, multilateral bodies and other stakeholders focus on causes of antimicrobial resistance.

Attention on livestock as sources of greenhouse gas emissions, and growing retailer competition are other factors that could materially increase the focus on animal protein production systems.

Business responses and opportunities are in three main areas

Strengthen supply chains

- Increase end-to-end alignment of supply chains
- Align production and marketing to ensure changes are rewarded
- Increase agility to respond to opportunities

Coordinate inputs

- Coordinate genetics, animal health, nutrition and equipment inputs
- Enable producers to meet market requirements in an efficient way

Increase transparency

- New technologies can demonstrate traceability along supply chains
- Increased competition means traceability becomes a comparative advantage

Source: Rabobank 2016

Alternative Proteins: More Interest, but Market to Remain Small

Attention on alternative proteins has been significant, and although they are growing quickly, this remains a niche product. Material progress depends on positioning and consumer acceptance

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Rise of flexitarianism driving alternative protein demand

Flexitarians are meat eaters who reduce their meat intake in response to environmental, social and health concerns around meat production.

Other support for alternative protein comes from religion and food safety.

Global market is estimated to reach USD 5.2bn in 2020*

The market is forecast to grow at 8.4% yearly, from an estimated USD 3.2bn in retail sales in 2014.

This represents about 0.3% of total global retail sales of meat.

Alternative protein market characterised by many small brands

The market is mainly branded products, with little private label, sold through the traditional food retail channel.

'Start-ups' lack investment power to bring product to the market

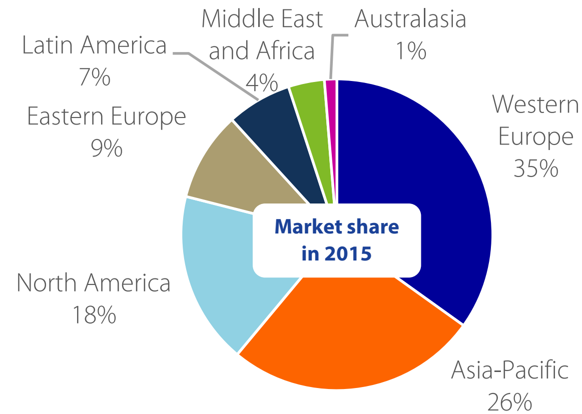
This is starting to change as new distribution platforms and channels are pursued, supported by investments from leading meat companies.

Attention to remain high in 2017

Rapid growth and challenge of environmental, social and health issues means alternative proteins will increasingly enjoy CEO-level attention.

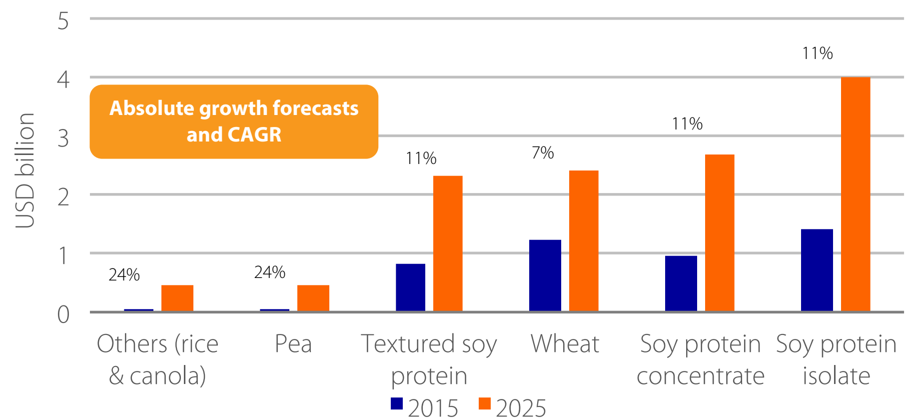
But material progress requires consumer acceptance outside of current niches—taste, quality, price and appearance are not yet sufficiently distinguishing from meat to capture enduring mass-market preference.

Western Europe, Asia-Pacific and North America dominate the market



Source: Euromonitor, Rabobank 2016

Growth forecasts for plant-based proteins highlight the opportunities



Source: OECD Library, Food and Agriculture Organization of the United Nations, IndexMundi, Markets and Markets, Future Market Insights, Rabobank 2016

*Source: Allied Market Research 2016

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Contact Details for Rabobank's Global Animal Protein Team

Rabobank Wholesale Rural and Retail

Global Food & Agribusiness Animal Protein sector team

New York office:
36th floor, 245 Park Ave
New York NY 10167
USA

Utrecht office:
Croeselaan 18
3521 CB Utrecht
The Netherlands

Rabobank

Rabobank

Bill Cordingley
Global Sector Head Animal Protein
Corporate Clients Management

Telephone *+1 (0) 212 808 6838*
Mobile *+1 (0)347 556 0525*
Email *Bill.Cordingley@rabobank.com*

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Rabobank

Justin Sherrard
Global Strategist Animal Protein
Food & Agribusiness Research

Telephone *+31 (0)30 23182*
Mobile *+31 (0)6 13 759 411*
Email *Justin.Sherrard@rabobank.com*

Rabobank Food & Agribusiness Research and Advisory Animal Protein Team

Europe – Nan-Dirk Mulder
nan-dirk.mulder@rabobank.com

Europe – Gorjan Nikolik
gorjan.nikolik@rabobank.com

Europe – Albert Vernooij
albert.vernooij@rabobank.com

Europe – Beyhan de Jong
beyhan.de.jong@rabobank.com

US – Don Close
don.close@rabobank.com

US – Will Sawyer
william.sawyer@rabobank.com

US – Pablo Sherwell
pablo.sherwell@rabobank.com

Mexico – Andrick Payen
andrick.payen@Rabobank.com

Brazil – Adolfo Fontes
adolfo.fontes@rabobank.com

China – Chenjun Pan
chenjun.pan@rabobank.com

Australia – Angus Gidley-Baird
angus.gidley-baird@rabobank.com

New Zealand – Matt Costello
matthew.costello@rabobank.com

Banking for Food is Rabobank's vision on global food security and the role of the bank. As a consequence of a growing and wealthier global population, the demand for food is expected to rise considerably. The food and agri value chains have to produce more with fewer natural resources. As a leading international food and agri bank, Rabobank aims to support and facilitate in meeting this challenge—by providing access to finance, knowledge, and networks to clients and their communities.