



**Rabobank**

# China's Soybean Import Outlook Through 2030

*Is the Peak Already in the Rearview Mirror?*

## RaboResearch

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## Summary

China is the world's largest soybean importer, accounting for over 60% of global trade, with soybean imports mainly driven by crushing for feed production. Therefore, future imports will primarily be influenced by the outlook for feed demand and the soymeal inclusion rate in feed rations.

Rabobank expects that Chinese feed consumption will maintain low-single-digit growth, reaching 486m metric tons in 2025 and 523m in 2030, compared with 450m metric tons in 2021.

Meanwhile, the inclusion rate of soymeal in feed rations is projected to drop further. The Chinese government is launching a soymeal reduction campaign aimed at lowering the dependence on imported soybeans to ensure food security. Under a low-soymeal inclusion scenario, the ratio will drop from the current 15.3% to 13.5% in 2025 and 12% in 2030.

In a low-soymeal scenario, China's soybean imports will decrease over the forecast period. The country will only need to import 87m metric tons in 2025 and 84m metric tons in 2030. By contrast, if the soymeal inclusion rate stays at 2021 levels (15.3%), soybean imports will be 98m metric tons in 2025 and 105m in 2030.

Other variables may also impact soybean import projections. Rising domestic soybean production and direct soymeal imports would further lower the import forecast, while state stock buying would lift import quantities in some years.

The projected slowdown and eventual reduction in China's soybean imports will have profound impacts on the entire global supply chain. It will challenge all participants along the chain, including growers, trade merchants, soybean crushers, livestock farmers, feed mills, and feed ingredient manufacturers. It will also create opportunities for startups to develop new technologies and novel ingredients, such as insect and microbial proteins.

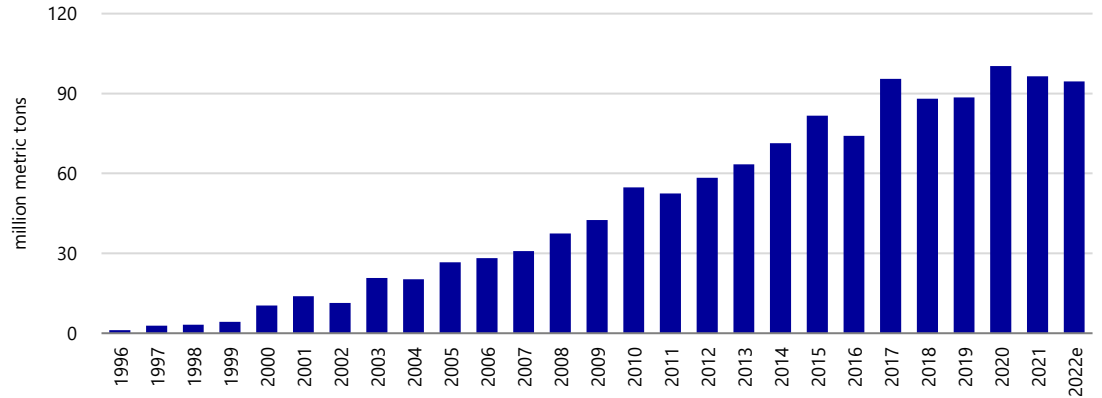
## China's Soybean Imports Are Largely Driven by Crushing for Feed Production

### China Has Been the Growth Engine of the Global Soybean Trade

Wild soybean, or *Glycine soja*, was first domesticated and cultivated in China. In 1996, the soybean's birthplace became a net exporter for the first time in history. By coincidence, it was also the year in which genetically modified (GM) soybeans were introduced in the US. The story of China's surging soybean imports started in the early 2000s with two events accelerating the pace

of import growth. After joining the World Trade Organization in 2001, China eliminated the import quota previously imposed on the soybean trade. Then, in 2004, GM soybeans were officially permitted for import. Since then, imported soybean volumes have seen explosive growth (see Figure 1). Nowadays, China is the leading destination for global soybeans, absorbing over 60% of world trade.

**Figure 1: China's soybean imports, 1996-2022e**

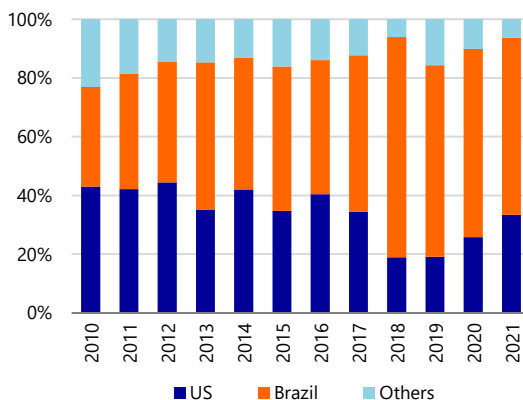


Source: China Customs, Rabobank 2022

In 2022, China's soybean imports are estimated to be 94m to 95m metric tons. Fewer than 2m metric tons are non-GM soybeans sourced from Canada, Russia, and Benin. The majority of imports are GM soybeans from the US, Brazil, and Argentina, with Brazil being the largest soybean supplier to China. China has benefited from Brazil's acreage expansion, inland logistics improvement, and expansion of port infrastructure in the north of the country. Brazil is increasingly taking market share of Chinese exports from the US. In 2018, when the US-China trade war began, the share of Brazilian soybean exports to China exceeded 75% while the US market share dropped to 19%. After a trade truce was reached and retaliatory tariffs on US soybeans were abolished in early 2020, the share of US soybeans rebounded, though geopolitical uncertainties linger.

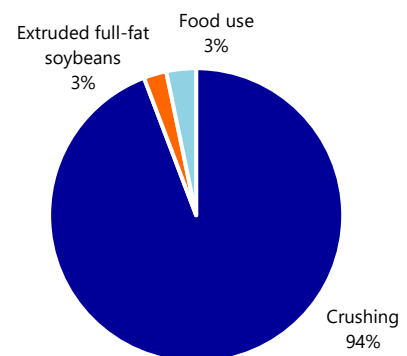
Close to 95% of imported soybeans, about 90m metric tons, are for crushing to produce soy oil for cooking and soymeal for animal feed (see Figure 3). In addition, there are around 3m metric tons of imported soybeans processed into extruded full-fat soybeans, also for feed use. Although GM crops are not allowed for direct food usage in China, a small quantity of imported GM beans reportedly flow into food applications illegally, along with imported non-GM beans.

**Figure 2: China's soybean imports by origin, 2010-2021**



Source: China Customs, Rabobank 2022

**Figure 3: Consumption of imported soybeans, 2021/22**

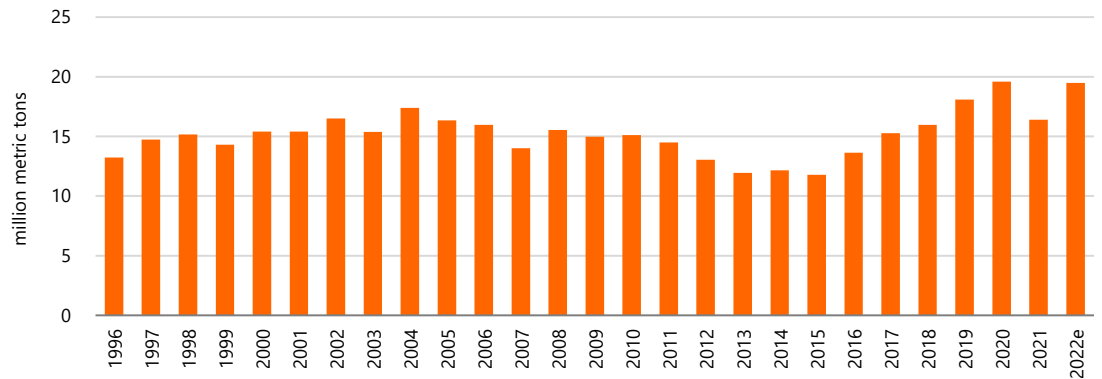


Source: China Customs, Rabobank 2022

## Stagnant Domestic Non-GM Soybean Production Is Mostly for Food Applications

China is the fourth-largest soybean-producing country globally, after Brazil, the US, and Argentina. Among those producers, China is the largest producer of non-GM soybeans, since domestic planting of GM beans is not permitted yet. Chinese domestic soybean production has stagnated between 15m and 20m metric tons for the past 20 years, constrained by scarce land and water resources, small-scale farming practices, and the lack of commercial use of biotech soybean seeds and traits in the field.

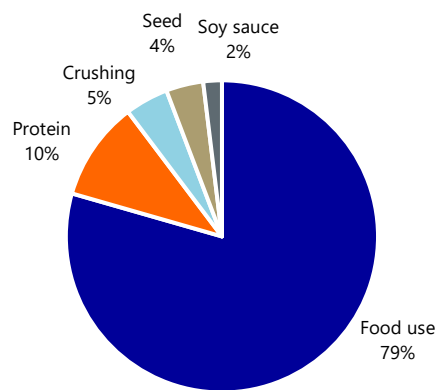
Figure 4: China's domestic soybean production, 1996-2022e



Source: China National Grains and Oils Information Center (CNGOIC), Rabobank 2022

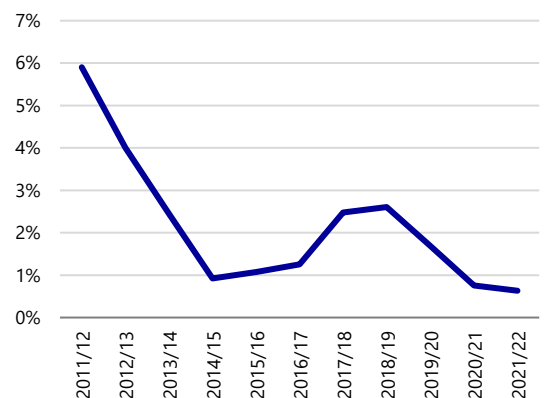
Domestically produced non-GM soybeans are the raw material for traditional soy-based foods, such as tofu, accounting for about 80% of total use (see Figure 5). Another application for domestic soybeans is manufacturing soy protein concentrates and isolates, representing 10% of use. Due to cost disadvantages, domestic soybeans are continuously losing share to imported GM soybeans in crushing. Crushing volume of domestic soybeans is now estimated at 1m to 2m metric tons per year, with facilities concentrated in northeastern China, mostly in Heilongjiang province.

Figure 5: Consumption of domestic soybeans, 2021/22



Source: CNGOIC, Rabobank 2022

Figure 6: Share of domestic soybeans in crushing, 2011/12-2021/22



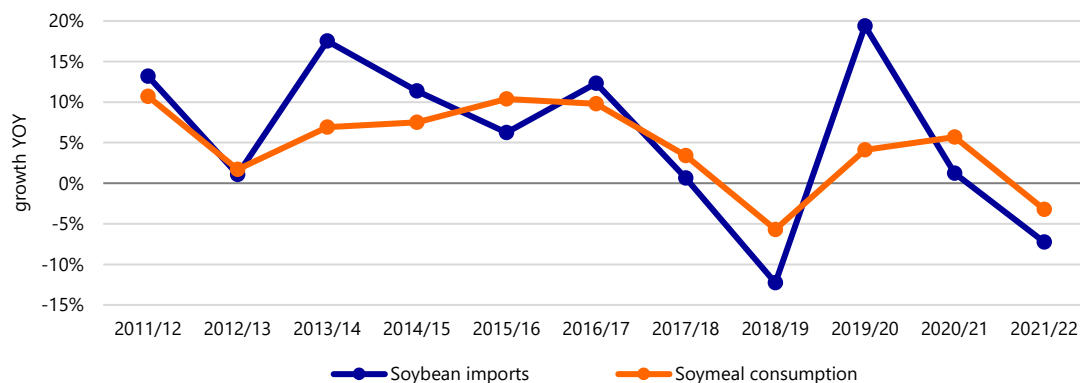
Source: CNGOIC, Rabobank 2022

## The Soybean Import Outlook Will Be Determined by Feed Demand and the Soymeal Inclusion Ratio

China's soaring soybean imports, primarily used in crushing, were driven by growing appetites for animal protein and edible oil, underpinned by population increase and, more importantly, dietary changes driven by income growth and urbanization.

The crushing of soybeans results in two main products: soymeal, with an average share of 78.5% by weight, and soy oil at around 18.5%. Soy oil faces more competition from substitutes than soymeal in China. The share of soy oil in China's edible oil consumption is around 45%, while soymeal's share among protein meals reaches 70%. Therefore, it is rational to assume that China's soybean imports are driven more by demand for soymeal than for soy oil.

**Figure 7: Growth rates of China's soybean imports and soymeal demand by volume, 2011/12-2021/22**



Source: CNGOIC, Rabobank 2022

Partly because of stock buying, the volatility of soybean import volumes appears higher than that of soymeal consumption (see Figure 7). For example, in 2018/19 (the October-September crop year), both soybean imports and soymeal consumption dropped for the first time since 2004 as a result of the US-China trade war and African swine fever (ASF). The US-China trade war distorted the soybean trade flow, as China imposed additional retaliatory tariffs on US soybeans, starting at 25% and then increasing to 30%. During this period, ASF halved the Chinese hog herd, which led to lower soymeal use, but the drop was still less severe than the decline in soybean imports. In the following 2019/20 crop year, the Chinese government waived retaliatory tariffs and signed a trade truce with the US. China imported excessive volumes of US soybeans through state purchase. In 2019/20, Chinese soymeal demand also rebounded, benefiting from hog rebuilding and the rising inclusion rate in feed rations. Still, its recovery rate was not as strong as that of soybean imports.

Looking ahead, while geopolitics remain an important uncertainty, China's soybean imports will be largely driven by soymeal demand in feed use. Thus, 'feed consumption' multiplied by 'the inclusion rate of soymeal in feed formulas' should be able to forecast domestic soymeal demand and serve as a good reference for China's future soybean imports.

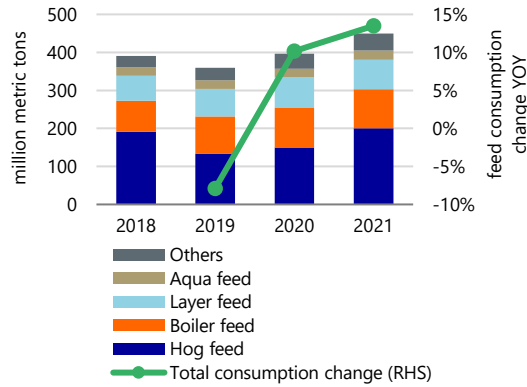
## Feed Demand Is Forecast To Keep Growing, Albeit at a Slow Pace

### Feed Consumption Has Been Recovering From African Swine Fever

After ASF caused a decline in 2019, Chinese feed consumption registered rebounds in 2020 and 2021. The growth was mainly driven by rapid hog herd rebuilding, positive farming margins, and rising penetration of commercial feed during the period. As the integrated feed-livestock model expanded and industry consolidation continued, in-house feed volumes experienced even higher growth. In 2021, total feed consumption exceeded pre-ASF levels, reaching 450m metric tons, of which hog feed, broiler feed, layer feed, and aquaculture feed accounted for 90% (see Figure 8).

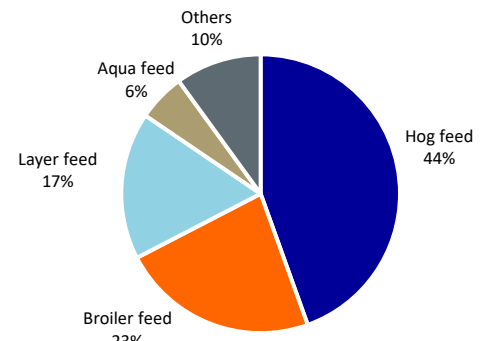
For 2022, Rabobank expects feed consumption will have a slight drop of roughly 1% YOY, due to broiler and pig herd declines. Since the sow herd is being built up in Q4 2022, it is projected that Chinese feed consumption will go back to its previous growth track in 2023 and beyond.

**Figure 8: China's historical feed consumption (converted into complete feed), 2018-2021**



Source: Ministry of Agriculture and Rural Affairs (MARA), Rabobank 2022

**Figure 9: China's feed consumption by species, 2021**



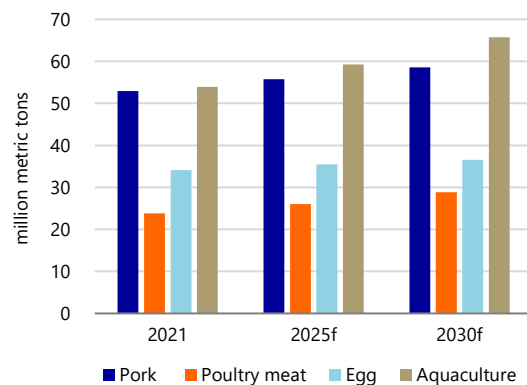
Source: MARA, Rabobank 2022

External factors such as animal diseases and supply chain disruptions (due to extreme weather events, military conflicts, trade wars, etc.) will continue to impact feed demand. However, under normal conditions, future Chinese feed consumption will largely be driven by Chinese animal protein production, the penetration of commercial feed, and feeding efficiency (reflected by improvements in feed conversion ratios). While animal protein growth and rising penetration of commercial feed are positive for feed demand, improvements in feed conversion ratios (FCR) will lower feed consumption. Technology will play an important role in enhancing efficiency.

## Animal Protein Production Growth Will Slow Down

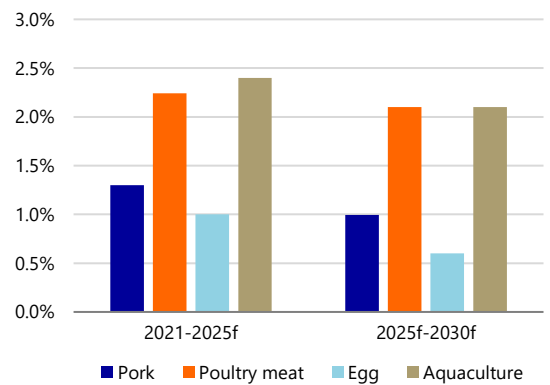
In line with the Chinese economy, China's animal protein production growth will decelerate over the coming decades (see Figures 10 and 11). Consumption of some proteins, particularly pork and eggs, is already close to saturation in middle- to high-income urban population groups. Future demand growth will be mainly driven by low-income households in urban and rural areas and other proteins like broilers, beef, and seafood. Structural changes in dietary patterns will shift production systems toward poultry meat and aquaculture, which are more feed efficient than pork production. Besides, domestic production is generally being challenged by stricter environmental regulations, land access, and rising feed costs.

**Figure 10: China's major animal protein production outlook, 2021-2030f**



Source: MARA, Rabobank 2022

**Figure 11: Forecast compound annual growth rates (CAGR) of animal protein production by protein type, 2021-2030f**

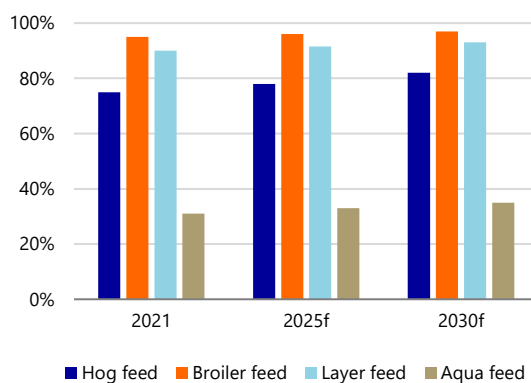


Source: MARA, Rabobank 2022

## Commercial Feed Penetration Ratio To Rise, Benefiting From Industrialized Operations

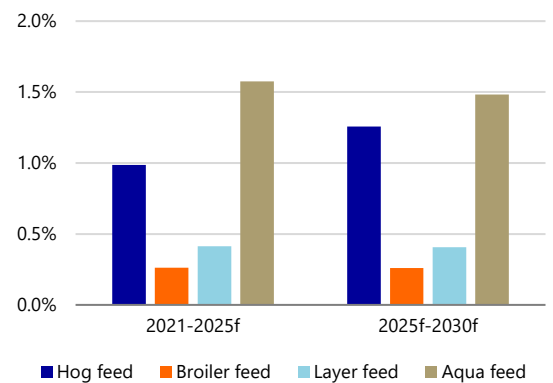
Industry consolidation in livestock farming is projected to continue, with larger professional companies continuing to expand and smaller individual farms going out of business. As a result, penetration of commercial feed is on the rise. In China, over 90% of poultry farms are already adopting commercial feed, either complete or concentrate feeds. However, the penetration of commercial feed in the hog, aquaculture, and ruminant sectors remains low, with the potential to increase greatly as production moves away from backyard operations toward more industrialized supply chains. We expect the penetration ratio of hog feed to increase from the current 75% to over 80% in the next decade (see Figures 12 and 13). Manufactured feed tends to have standardized and higher usage of soymeal compared with on-the-farm feed mixes, which use various feedstuffs depending on availability and price.

**Figure 12: Outlook for commercial feed penetration rates, 2021-2030f**



Source: Rabobank 2022

**Figure 13: Forecast CAGR of commercial feed penetration, 2021-2030f**

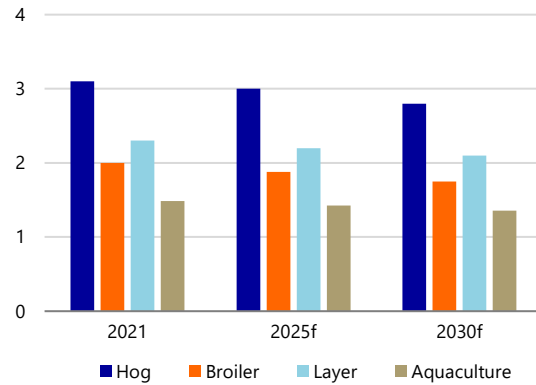


Source: Rabobank 2022

## Advances in Animal Breeding and Nutrition Help Lower Feed Conversion Ratios, Reducing Feed Usage

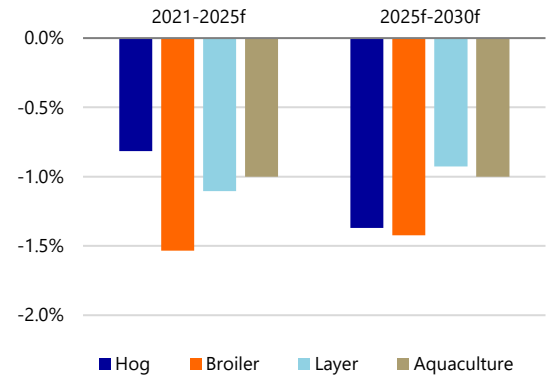
Better animal genetics and livestock farming practices will lower FCRs, meaning less feed will be required to produce the same quantities of animal protein products. In hog production, continuous industry consolidation, driven by large-scale integrated companies with know-how and capital strength, will improve industry-average FCRs. The production of white-feathered broilers with lower FCRs, estimated at 1.6 on average, will expand at a faster pace than pork production, which needs over 3kg of feed to produce 1kg of pork meat. Pork FCRs will decrease steadily as well through precision feeding and more balanced feed formulas catering to the nutritional needs of animals in different growth stages. Genetics will also play a role. The production of yellow-feather broilers, which have higher FCRs (at a wide range of 1.80 to 2.9 depending on indigenous breeds), is shifting toward adopting lower-FCR genetics. All these FCR improvements will result in lower feed demand, all else being equal.

**Figure 14: Feed conversion ratios of major animal proteins, 2021-2030f**



Source: Rabobank 2022

**Figure 15: Forecast CAGR in feed conversion ratios, 2021-2030f**

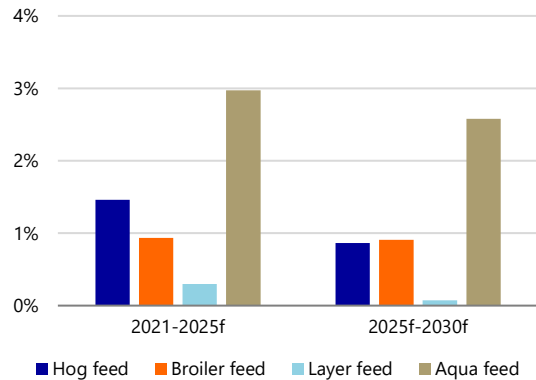


Source: Rabobank 2022

## Feed Consumption Will Experience Low-single-digit Growth Till 2030

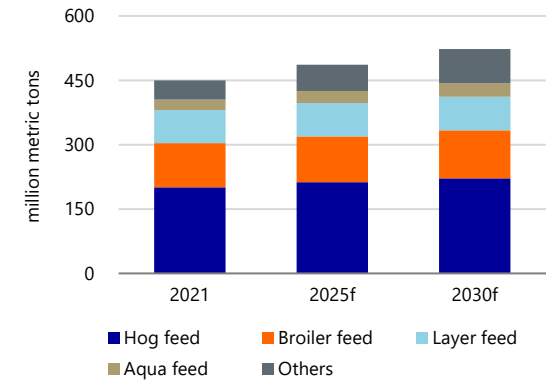
After incorporating the above influences into the consumption forecast for major feed species, we expect aqua feed to register the highest growth through 2030, followed by hog feed and poultry feed (see Figure 16). Chinese feed consumption is forecast to reach 486m metric tons in 2025 and 523m metric tons in 2030, compared with 450m in 2021. The CAGR will decelerate from 6.6% between 2015 and 2021 to 2% from 2021 to 2025 and further drop to 1.5% from 2025 to 2030.

**Figure 16: Forecast CAGR in total feed consumption, 2021-2030f**



Source: Rabobank 2022

**Figure 17: China's feed consumption forecast (converted into complete feed), 2021-2030f**



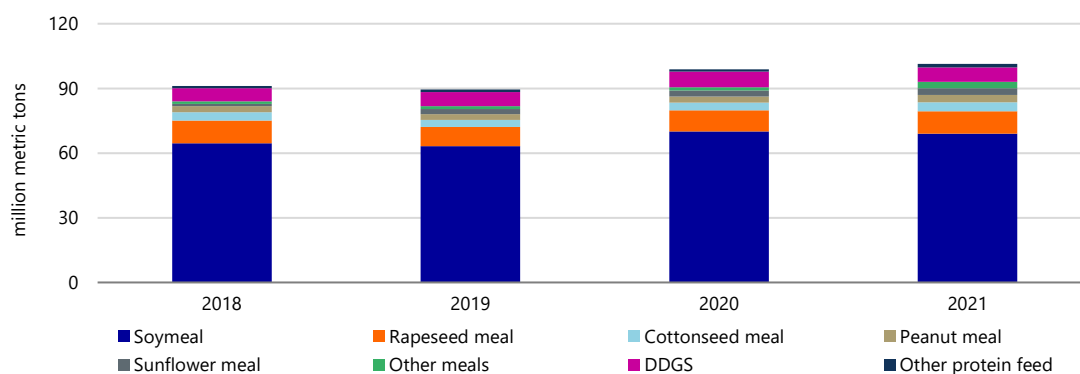
Source: Rabobank 2022

## The Soymeal Inclusion Ratio Is Expected To Decline, Impacting Soybean Imports Negatively

### Soymeal Is the Key Feed Protein Source in China, Accounting for 70% of Volume

In addition to its connection to feed production more generally, soymeal consumption is also closely related to soymeal's inclusion ratio in feed rations. Under normal circumstances, the inclusion ratio of soymeal is impacted by the price of soymeal, the prices of substitutes (basically other feed protein sources), and livestock farming margins. For a long time, many Chinese livestock farmers have had the incorrect perception that high-protein diets could ensure animal health and accelerate growth. In addition, soymeal has the advantage in terms of its good palatability, accessible supply, as well as its balanced and digestible amino acid profile. Thus, soymeal holds the dominant position in protein feed use in China.

Figure 18: China's protein feed use, 2018-2021



Source: MARA, Rabobank 2022

## The Inclusion Ratio of Soymeal Is Likely To Drop Further, Influenced by Governmental Policies

Amid the US-China trade war and uncertain external supplies, China introduced the concept of low-protein feed formula in 2018. The same year, the China Feed Industry Association approved recommended standards for swine and poultry feed, lowering the crude protein level by 1.5% and 1%, respectively. In 2021, even though tensions had de-escalated to some extent, the Ministry of Agriculture and Rural Affairs issued further guidelines to promote the reduction of soymeal use without consideration for animals' growth rates and productivity. To date, the China Feed Industry Association has already set or is in the process of setting upper limits for soymeal use in hog, layer, broiler, aqua, and other feed rations, taking into account varying nutritional needs at different stages in the animals' lifecycles.

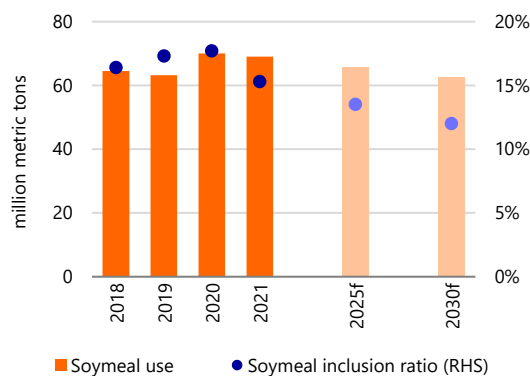
The strategic objective of the soymeal reduction campaign is to lower dependence on imported soybeans and ensure food security. Meanwhile, it will also lower production costs and greenhouse gas emissions. While a portion of the ingested protein is used by the animal to produce animal protein products and offspring, a large percentage is wasted in its metabolism and excreted as feces and urine, causing environmental burdens from nitrogen emissions.

In 2021, the industry-average inclusion ratio of soymeal dropped to 15.3%, compared with 17.7% in 2020. Despite the challenges and complexities ahead, Rabobank projects that the Chinese government is determined to further reduce soymeal usage. In our low-soymeal inclusion scenario, the ratio will further decline to 13.5% in 2025 and reach 12% in 2030. In theory, these lower ratios are feasible, as some leading Chinese feed companies are already achieving lower ratios in the range of 7% to 10%.

Compared to keeping the 2021 inclusion ratio (15.3%), the low-soymeal scenario will save 9m metric tons of soymeal use in 2025 and 17m in 2030, which is 13% and 25% of the usage versus today, respectively (see Figures 19 and 20). Converting these drops into soybeans crushed represents a decline in soybean usage of 11m metric tons in 2025 and 22m in 2030.

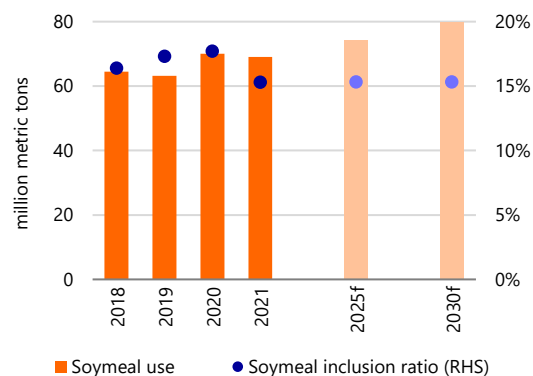


**Figure 19: Soymeal consumption forecast: lowering the inclusion ratio toward 2030**



Source: MARA, Rabobank 2022

**Figure 20: Soymeal consumption forecast: keeping the same inclusion ratio as 2021**



Source: MARA, Rabobank 2022

## Alternative Protein Sources and Specific Feed Processes Are Needed To Implement Soymeal Reductions, but They Have Drawbacks

While reducing soymeal use, feed mills are seeking alternative protein sources. Traditional substitutes include rapeseed meal, cottonseed meal, peanut meal, sunflower meal, distillers grains (DDGS), palm kernel meal, corn protein powder, corn germ meal, and various animal byproducts (such as bone meal, poultry meal, feather meal, dried blood meal, etc.).

Soymeal is the most commonly used protein source worldwide and has become the standard for determining the value of all other protein supplements. Compared with soymeal, the low availability of these protein substitutes is one obvious issue. Furthermore, these alternative sources have disadvantages in terms of poor digestibility and a large number of anti-nutritional factors (ANFs). Specific feed processes, including granulation, fermentation, extrusion, and enzymatic hydrolysis, are necessary to adjust palatability, improve digestibility, and deactivate ANFs.

Amino acids are the building blocks of protein, and soymeal has a better amino acid balance than other protein sources. Extra amino acids are required to make up for the reduced soymeal and crude protein content in complete feed. Total amino acid levels must stay sufficient to meet the nutritional needs of the animal.

Amino acid quantities and composition (referring to the percentages of each essential amino acid, which cannot be made by the body) are equally important. Research shows that low-soymeal feed formulas require extra inputs of lysine, methionine, threonine, tryptophan, valine, and isoleucine.

China is a leading producer and exporter of lysine, threonine, tryptophan, and valine. Chinese production capacity of these four amino acids is enough to meet rising domestic consumption, but potentially at the expense of exports. China remains a net importer of methionine, although domestic capacity is ramping up. Self-sufficiency of methionine is expected to improve over this decade. As for isoleucine, Chinese companies are currently lagging behind in bacterial strains and fermentation technology. Ramp-up of commercial-scale production is underway.

In addition to traditional protein sources and synthetic amino acids, there are also novel protein options with potential, such as insect and microbial proteins. Today, the black soldier fly is the most common insect used in animal feed – its larva has high protein content and a diverse amino acid profile. Microbial proteins are proteins produced by microorganisms, such as algae, fungi, yeast, and bacteria, via fermentation of carbon- and nitrogen-containing substrates, from organic waste to industrial waste gases. However, industrial production of microbial protein as feed is still in the early development stage. A number of startups are researching and investing in bioreactor designs, microbial strains, and feedstock utilization to reach commercial viability of microbial

protein in feed applications. In the long run, potentially beyond 2030, these novel proteins could not only replace soymeal in feed rations economically, but also make positive contributions to saving natural resources and reducing carbon emissions.

## In the Low-soymeal Inclusion Scenario, Soybean Imports Appear To Have Passed Their Peak Level

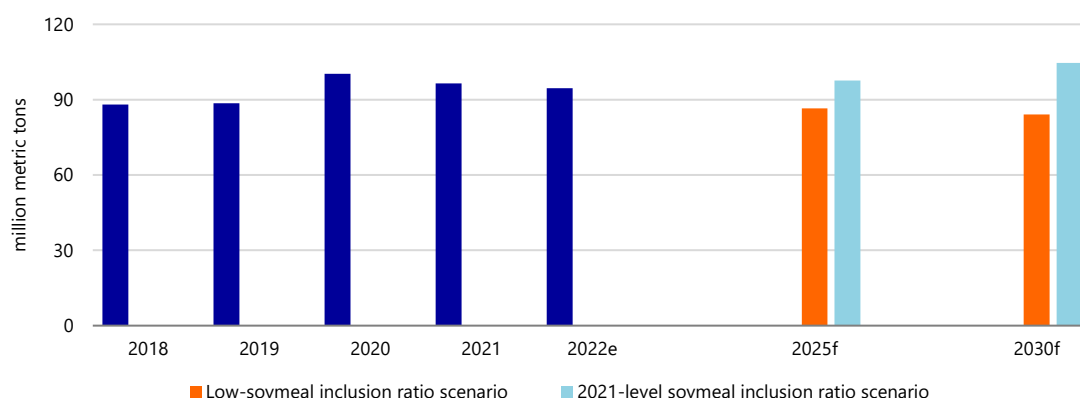
Rabobank's projections of China's soybean imports under a low-soymeal inclusion scenario are based on the following assumptions:

1. The inclusion ratio of soymeal will likely drop further till 2030 (declining from 15.3% in 2021 to 12% in 2030).
2. Imported soybeans will be exclusively for crushing and processing extruded full-fat soybeans (with imports rising from 3m metric tons in 2021 to 5m in 2030).
3. Domestic soybeans will be primarily for direct food use, e.g. tofu, soy milk, and soy sauce.
4. The share of domestic soybeans in crushing will stay low (at 1%, as a conservative estimate).

In the low-soymeal inclusion scenario – stock buying notwithstanding – China's soybean imports already peaked in 2020. China will only need to import 87m metric tons in 2025 and 84m metric tons in 2030 to fulfil future soymeal demand. By contrast, if feed mills keep the inclusion ratio of soymeal at 2021 levels (15.3%), China's soybean imports will be 98m metric tons in 2025 and 105m in 2030 (see Figure 21).

Obviously, change of the soymeal inclusion ratio will play an important role in China's future soybean import outlook. Nevertheless, there are other variables influencing import quantities.

**Figure 21: China's soybean import forecast, 2018-2030f**



Source: Rabobank 2022

## Higher-than-expected Domestic Production Could Further Depress Import Demand

According to China's 14th Five-Year Plan, the Chinese government set a target to increase domestic soybean production to 23m metric tons by 2025, compared with 19.5m metric tons in 2022. This latest five-year plan particularly highlighted supply chain security risks related to grain and oilseed imports. Amid geopolitical complications, soybean imports become a focal point in trade between the US and China. The government hopes that reducing its reliance on soybean imports will help it take a more proactive position in bilateral diplomacy.

Until 2030, domestic soybean acreage is projected to rebound, benefiting from crop rotation and corn-soybean strip intercropping practices. The government is also emphasizing advances in seed breeding and biotechnology. In theory, GM technology enables seed developers to alleviate abiotic and biotic stresses for specific plants and, thus, improve crop yields by narrowing the gap between actual yield and potential optimal yield. However, no timeline is defined for launching commercialized planting of GM soybeans in China.

Domestic soybean production is set to rebound in the coming years, but domestic production will still be dwarfed by imports. Rabobank believes that imported GM soybeans will maintain the dominant position in crushing till 2030. Still, additional domestic production will flow into crushing and further lower import projections by several million metric tons.

## Rising Demand for Soy Oil in Biofuel in the Americas Might Urge China To Increasingly Import Soymeal Instead of Soybeans

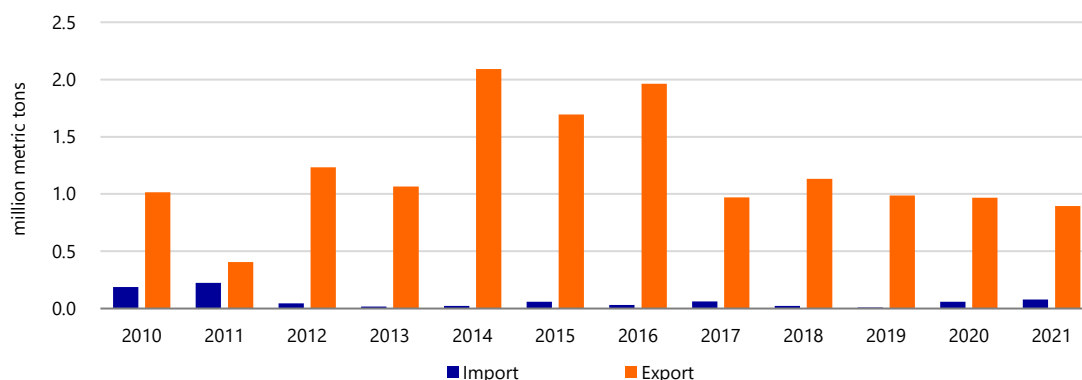
Global biofuel demand is projected to continue to grow, underpinned by the increasing needs for renewable and environmentally friendly fuel sources. Government policies are supporting biofuel development to reduce dependence on finite fossil fuels and to achieve carbon emission pledges.

Surging biofuel demand is expected in the US, Brazil, the EU, South America, and other regions. In the US, hydrotreated vegetable oil (HVO), also known as renewable diesel, will lead the growth, driven by California’s low-carbon fuel standard, the implementation of renewable fuel standards, the federal biodiesel blender’s tax credit, and other favorable state-level policies. In Brazil, the mandated level of traditional biodiesel has potential to rise under the new Lula administration. In the addition, the country’s first HVO plant is under construction.

Soy oil is and will remain the key feedstock for producing biofuel in the Americas. To meet rising demand for soy oil, Brazil and the US, the top two soybean producers, are expected to expand their crushing capacities and process more beans domestically. While soy oil will be for local use, increased production of soymeal will be bound for the export market. In the international market, such changes might boost soy oil prices but depress soybean prices.

China is not active in the global soybean trade. Due to its gigantic domestic crushing capacity, estimated at over 170m metric tons, it was even a net exporter for many years, primarily supplying soybean meal to neighboring countries in Southeast Asia. Due to the many changes coming to the soybean complex, China might find itself in an advantageous position to import large quantities of cheap soybean meal. If China becomes a net importer of soybean meal, the forecast imported soybean volumes will be further revised downward.

**Figure 22: China’s historical soybean imports and exports, 2010-2021**



Source: Rabobank 2022

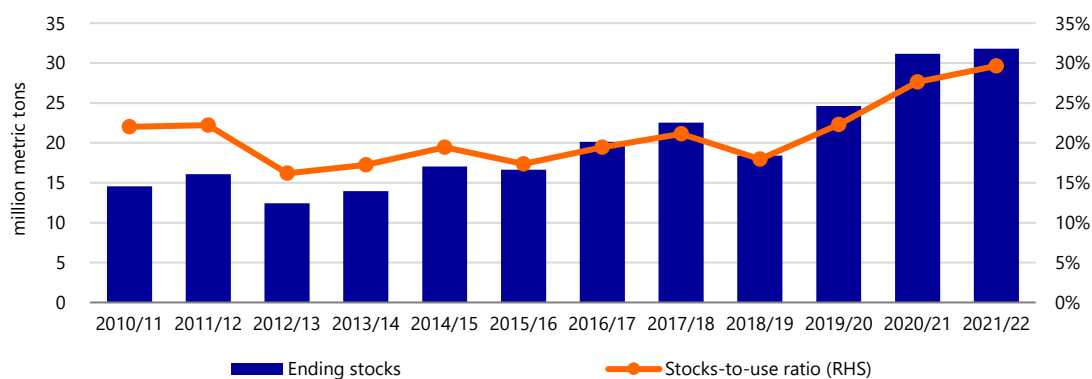
## State Purchase Will Be a Short-term Factor, With High Uncertainty

In recent years, China's soybean stocks-to-use ratios have stayed in the range of 20% to 30%, much lower than those of paddy rice (over 100%), wheat (over 100%), and corn (60% to 80%). In China, the inventory includes both commercial stocks and state reserves. Since the government puts a high emphasis on food security, it has incentives to further increase the stocks-to-use level as a buffer against various risks like adverse weather, supply chain disruptions, geopolitical tensions, natural disasters, etc. When needed, the Chinese government might encourage imports or conduct stock buying to replenish state reserves.

Furthermore, US-China trade is a complex economic relationship. At some point, to balance trade accounts, China might agree to import more agricultural products from the US, including soybeans, via state purchase.

Beyond fulfilling domestic demand and maintaining a commercial safe stock, additional government procurement to build up higher state reserves will temporarily increase import projections in some years, but the impact would be short term.

Figure 23: China's soybean stocks-to-use ratio, 2020/11-2021/22



Source: USDA, Rabobank 2022

## Conclusion

Rabobank expects that China's soybean imports will slow down and eventually decline through 2030, as a result of slower livestock production growth, continuous improvement in farming practices, and wide adoption of low-soymeal inclusion in feed formulas nationwide. Under a low-soymeal inclusion scenario, China will only need to import 87m metric tons in 2025 and 84m in 2030, compared with 98m metric tons in 2025 and 105m in 2030 if the inclusion rate remains unchanged.

China has the world's largest crushing capacity, estimated at over 170m metric tons to date. Nevertheless, average capacity utilization rates run at around 55%, which reflects ongoing downward pressure on crushing margins. Currently, the top ten Chinese crushers account for over 80% of the national capacity. In a low-soymeal inclusion scenario, fewer soybeans will be imported, which will lead to an even lower crushing capacity utilization and likely force the closure of uncompetitive crushers. Industrial consolidation is expected to accelerate. Meanwhile, with less crushing, China will need to import more edible oil directly to fulfill demand. Palm oil might be an option. Multinationals with an active presence in overseas origination and distribution will hold strong positions to deal with future competition.

The feed sector will also see more consolidation. With better cost-control management and animal nutrition expertise, the leading feed companies are best equipped to formulate least-cost feed rations to maximize profitability while maintaining the animal's performance. Competition will be challenging for smaller feed players. They will be squeezed out, resulting in a much more concentrated Chinese feed industry.

In a low-soymeal inclusion scenario, extra use of amino acids will be necessary to meet the nutritional needs of animals. Chinese amino acid players will benefit from rising domestic demand, but their ability to export might be compromised. China is a major exporter of certain amino acids like lysine and threonine. The shift toward more domestic consumption will prompt foreign buyers to diversify their supply chains, lowering dependence on China's supplies.

Low-soymeal inclusion formulas will bring opportunities to other feed ingredient manufacturers. For example, enzyme application will rise along with rising use of alternative protein meals, as alternative protein meals require more enzymes to improve nutrient absorption and reduce anti-nutritional factors.

There are a number of startups focusing on novel feed protein sources, such as insect and microbial proteins. In the long run, these novel proteins will make positive contributions toward saving natural resources and reducing carbon emissions. However, as most of them are still in the development stage, there is high uncertainty about the timeline to achieve commercial viability in China.

A slowdown and eventual reduction in China's soybean imports will reshape global trade flows. While China will remain the largest importer, additional growth will shift from China to other regions and mainly be driven by emerging economies in the Middle East, Southeast Asia, and South Asia. Merchants will need to realign their business for new destination markets and increase infrastructure investment in these regions. Global soymeal trade volume is projected to increase at a fast pace. Driven by rising biofuel demand, the US and Brazil are expected to expand their crushing capacities and process more beans domestically, keeping more soy oil for local use and exporting increasing volumes of soymeal. This will benefit integrated merchants, especially those with crushing plants in the Americas.

# Imprint

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