

CHINA'S GRAIN IMPORTS RAPIDLY GROWING – EXPECTATION FOR THE RISE OF INNOVATION TRIGGERED BY SOARING PRICES –

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SUMMARY

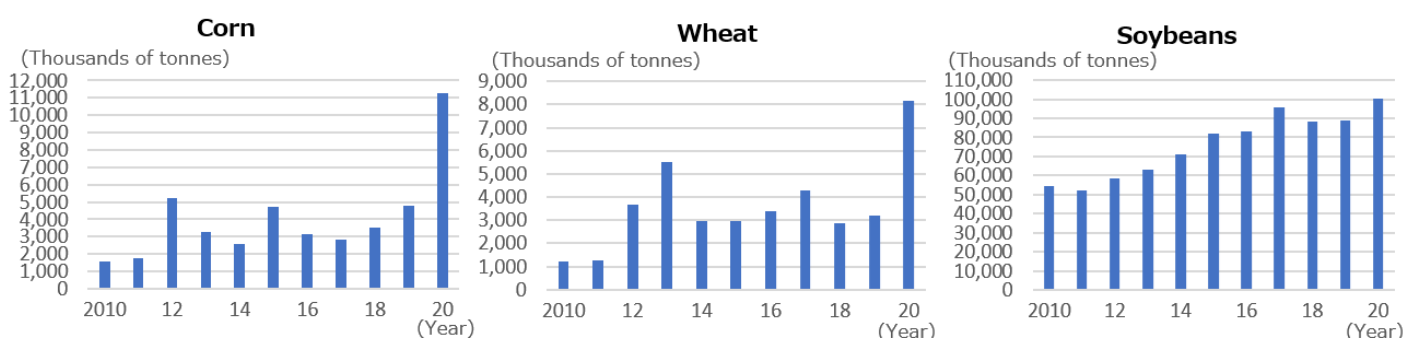
- China's grain imports are rapidly rising. The main reason for this growth is the increase in demand for livestock feed resulting from increased meat consumption. Domestic grain demand is forecast to grow even further, with demand for wheat also expected to increase as diets become more westernized.
- While the Chinese government wants to curb imports, grain production growth is slowing, hindered by numerous constraints on domestic agricultural production. Large-scale imports are expected to continue.
- China's large-scale imports of grain, coupled with supply constraints in the world's main grain producing areas, have resulted in a tight supply-demand balance and soaring prices. On the other hand, if prices remain high, the incentive for investment and development is likely to heighten, and new innovations may emerge.

China's grain imports are rapidly growing. This is a trend that warrants attention, not least because the huge import volume is a major factor driving global grain supply and demand. This report analyzes the current status and future outlook of the rapid rise in China's grain imports, and discusses the global impact.

1. CHINA'S RAPIDLY RISING GRAIN IMPORTS

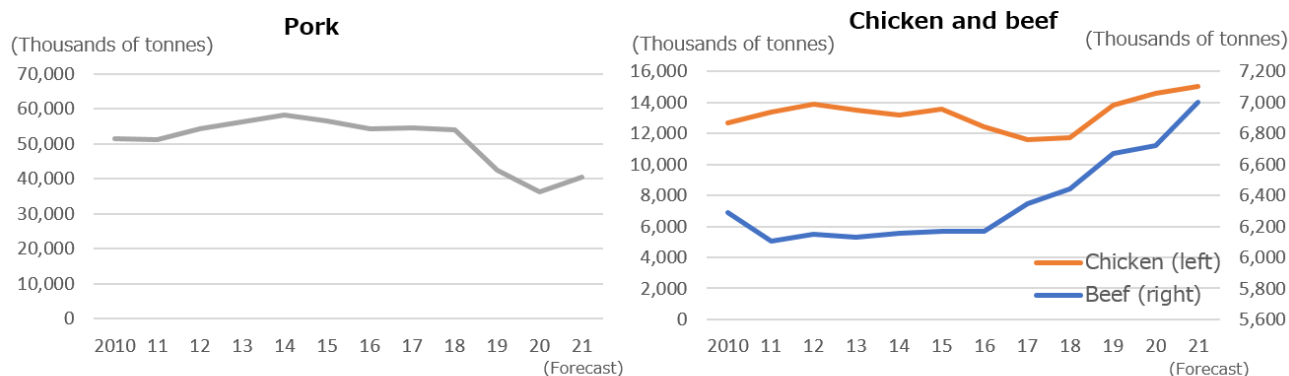
While China's soybean imports have been growing at a steady pace to eventually exceed 100 million tonnes in 2020, imports of grains such as corn and wheat have jumped rapidly in a short space of time (Figure 1).

Figure 1: China's grain (corn and wheat) and soybean import volumes



Source: Created by MGSSI based on ITC data

Figure 2: Pork, chicken, and beef production in China

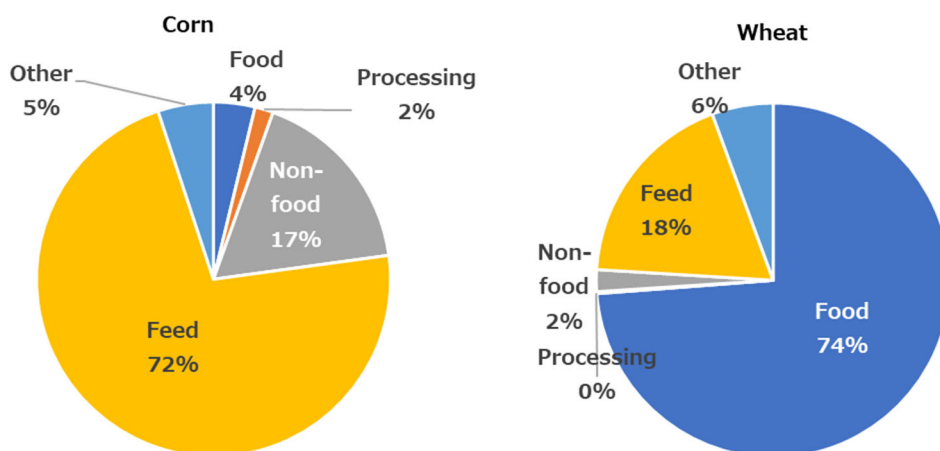


Source: Created by MGSSI based on USDA data

The main factor behind this growth is the increased demand for feed. This increase in demand is due to a recent surge in beef and chicken production¹, as well as a recovery in pork production, which had slumped as a consequence of an African swine fever epidemic^{2 3} (Figure 2).

Considered by crop, the rapid increase in corn imports is remarkable. Corn is the principal component of feed, and 70% of China's homegrown corn is used for feed (Figure 3). Against the backdrop of China's growing demand for feed, corn imports exceeded China's tariff quota (7.2 million tonnes) in 2020 for the first time, rising to 11.3 million tonnes, a 2.4-fold increase over the previous year. This also coincided with the fact that production had been sluggish for years following abandonment of the price support policy⁴ in 2016, and the resulting soaring price of domestically grown corn⁵ also led to an increase in foreign corn imports⁶.

Figure 3: Corn and wheat usage in China (2018)



Source: Created by MGSSI based on FAO data

¹ Because grain feed efficiency is generally higher in chickens than in pigs, demand for grain will decline if there is a shift in production from pork to chicken. However, demand for grain increased after 2018 despite the fact that pork production fell while chicken production increased. It is assumed that this was because, at that time, pigs were raised mainly on food scraps and grain was infrequently used, while coincidentally, industrial chicken production expanded.

² The outbreak was first confirmed in August 2018. China's pig herd, which at that time numbered 450 million head, fell sharply to 30 million head in 2019 as a result of the large-scale culling (USDA data). African swine fever is still known to occur in China, but not on a large scale.

³ Given the need to rapidly replenish the pig herd through measures such as the construction of dedicated buildings for pig rearing, as well as the need to improve sanitation with a view to preventing African swine fever infection, the resulting change to a modern, grain-based breeding method is also believed to lie behind the growing demand for feed.

⁴ A government policy designed to increase the incomes of farmers by purchasing corn at a high price.

⁵ A rise in the cost of harvesting corn flattened by typhoons is another factor behind the sharp price rise.

⁶ Because prominent growth was seen especially in imports from the US, China's consideration in response to political pressure from the US (China concluded the economic and trade agreement that emerged from phase 1 of the trade talks with the US in January 2020) is believed to be one factor behind said growth.

In the case of wheat, China imported 8.15 million tonnes in 2020, a 2.5-fold increase over the previous year. While wheat is mainly used for human consumption, it is also used for feed as an alternative to corn to some extent (Figure 3). For this reason, according to the US Department of Agriculture, the Chinese government is releasing its reserves of older wheat for use as feed due to the escalating price of corn caused by the growing demand for feed, and is replacing these reserves with imported wheat. In addition, the sudden rise in demand for instant noodles and similar products spurred by the COVID-19 pandemic (Figure 4) is also considered to have been a factor affecting the increase in wheat imports.

Figure 4: Actual sales and sales forecasts for staple foods in China

	Sales (Millions of CNY)					Year-on-year		Average annual growth rate	
	2015	2019	2020	2021 (Forecast)	2025 (Forecast)	2020	2021 (Forecast)	2015-2020	2021-2025 (Forecast)
Noodles	127,405	154,054	171,681	164,127	181,789	11.4%	-4.4%	6.1%	1.2%
Pasta	354	662	820	859	1,359	23.9%	4.8%	18.3%	10.6%
Rice	62,876	74,318	80,263	78,738	81,773	8.0%	-1.9%	5.0%	0.4%
Bread	26,643	40,261	42,350	46,823	57,718	5.2%	10.6%	9.7%	6.4%

Source: Created by MGSSI based on data from Euromonitor International

2. THE FUTURE OUTLOOK FOR CHINA'S GRAIN IMPORTS

(1) The Chinese government's policy of curbing imports is currently having little effect

As shown thus far, while China's grain imports have increased sharply, the government wants to curb imports.

In 2014, in accordance with how the soybean imports grew up to that point, the Chinese government set out a strategy to be primarily self-sufficient in grains and to actively utilize the international market to make up for any shortfalls, except for use as staple food. However, after facing the risk of the domestic food supply coming under foreign control following the subsequent US-China trade friction over soybeans, China appears to have become cautious about utilizing the international market. In fact, in April 2021, the Chinese government published guidelines for reducing the proportion of corn in feed and using alternatives such as barley with the aim of curbing imports.

However, at present, there is no indication that corn imports will be pushed down, and given the current situation in which even imports of barley for use as feed are also increasing, it is unlikely that grain imports will be reduced.

(2) It is doubtful that imports can be curbed even in the medium to long term

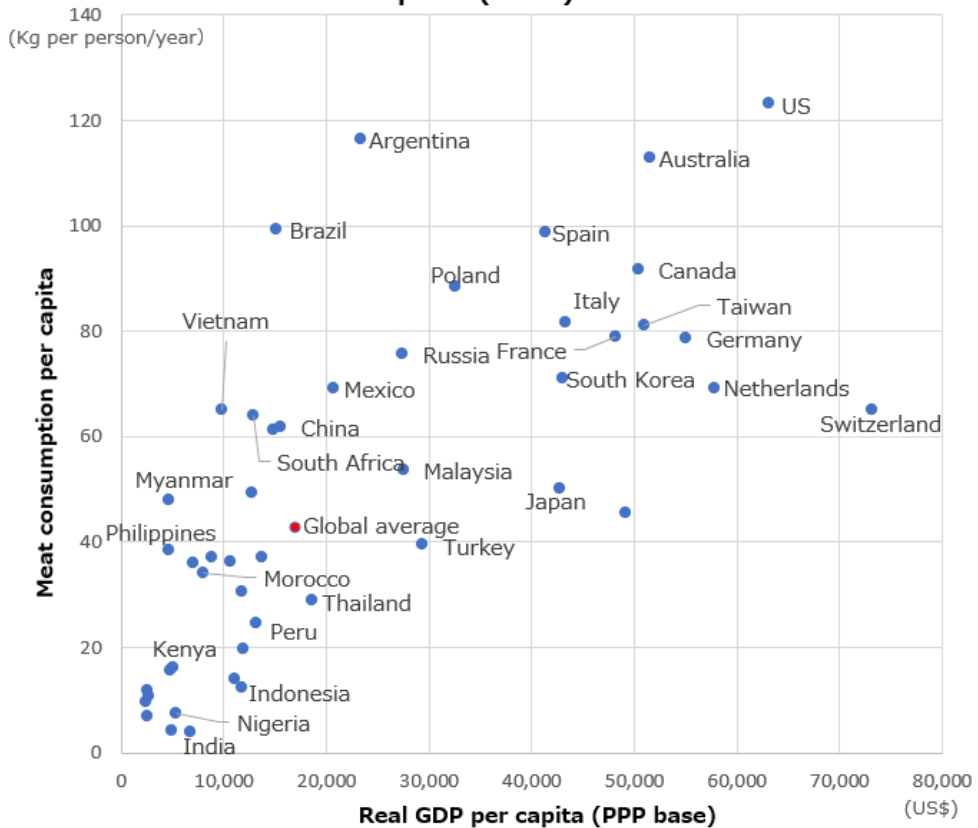
Even in the medium to long term, it is doubtful that the Chinese government's objective of curbing imports can be achieved. That is because demand will continue to grow, and domestic agricultural production cannot catch up.

First, in terms of demand, annual meat consumption in China currently stands at 62 kg per capita (FAO, 2018). Globally, however, as incomes rise, annual meat consumption has tended to rise to around 80 kg per capita⁷. Also considering that meat consumption per capita in Taiwan, which has a similar food culture to China, is 81 kg, it is highly likely that China's meat consumption will rise to that level (Figure 5). It is therefore expected that China's demand for feed grain will continue to grow in the future⁸. Also, demand for processed products made from wheat, such as bread and pasta, will increase as diets become more westernized (Figure 4), which could be another factor boosting grain demand.

⁷ After that, annual meat consumption tends to reach a plateau.

⁸ According to an estimate of global meat demand conducted by the author in 2017 premised on a correlation between meat consumption and income, based on the fact that per capita meat consumption in China in 2013 was 57 kg (at which point real GDP per capita was US\$12,425), it will reach 63 kg by 2020 (GDP US\$16,889), 71 kg by 2030 (GDP US\$24,999), and 76 kg by 2050 (GDP US\$31,410).

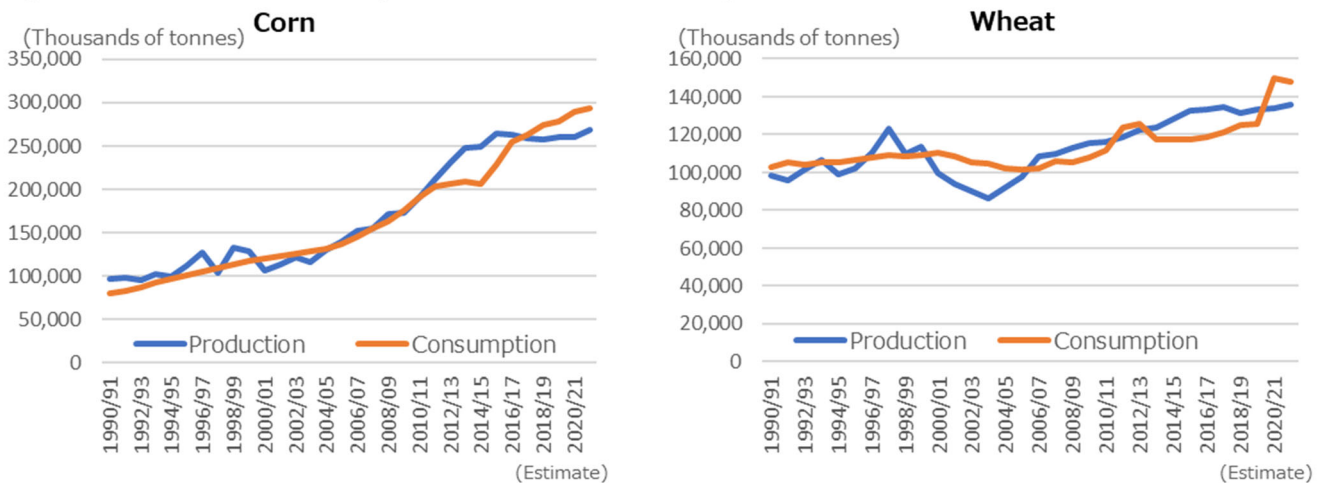
Figure 5: Correlation between global income levels and meat consumption (2018)



Source: Created by MGSSI based on FAO and IMF data

However, grain production growth is currently slowing down (Figure 6), and figures do not support the prospect that production can continue to increase to accommodate the future growth in demand. This is because the price support policy has hit a dead end. While on one hand, the policy has encouraged increased production backed by the government’s purchase of grain at a high price, on the other, it led to sharply rising domestic prices, an increase in imports, burgeoning government inventories, and fiscal deterioration. As a result, the price support system for corn was abandoned in 2016, as mentioned above. In addition, the support price for rice and wheat was lowered from 2018.

Figure 6: Corn and wheat production and consumption in China

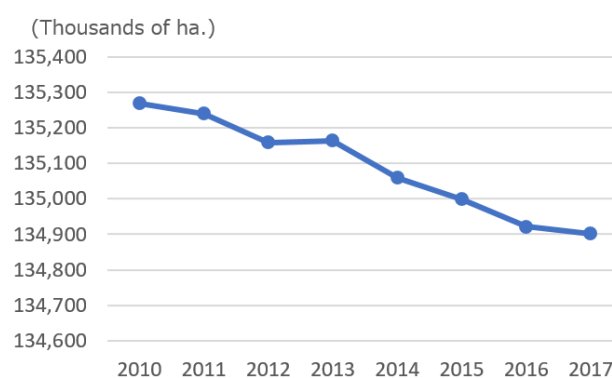


Source: Created by MGSSI based on USDA data

The “No. 1 Central Document”, which is released by the Chinese government at the beginning of each year and outlines important policy issues, has covered three rural issues (relating to agriculture, rural areas, and farmers) for the past 18 years in succession. In 2021, the document reported the launch of a new measure to prevent the use of arable land for non-grain production⁹. As a part of this initiative, some developments have been seen toward raising the support price for rice and wheat again to incentivize increased production¹⁰, but given that the sustainability of the policy itself is in question, it is doubtful that production can be increased in the medium to long term.

In addition, restrictions on agricultural land can also be an obstacle to increased production. While China has 135 million hectares of agricultural land, ranked third globally following India and the US, the area has been declining in recent years due to changes in land use and other factors (Figure 7). Although the government has said that it will, at all costs, protect the 120 million hectares (1.8 billion mu in Chinese unit of area) required for self-sufficiency in food through regulations on land use changes and other means, the reality is that while the agricultural land area may decrease in the future, there is no likelihood that it will increase.

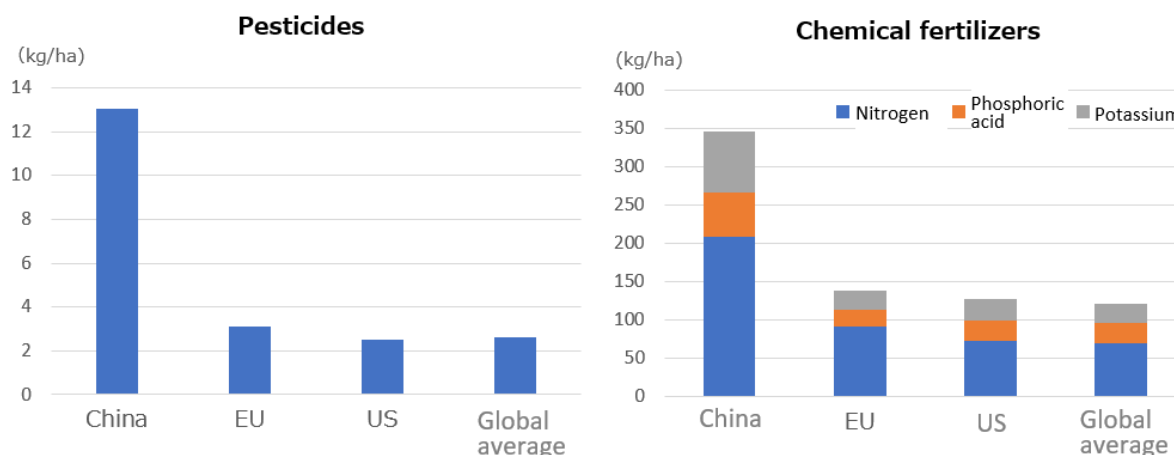
Figure 7: Agricultural land area in China



Source: Created by MGSSI based on FAO data

In addition to these quantitative restraints on agricultural land, another limiting factor is deterioration in the quality of the existing land. Excessive use of chemical fertilizers and pesticides depletes nutrients in the soil, leading to soil degradation such as erosion¹¹. Although the amount of chemical fertilizers and pesticides used is in a downward trend following the government’s adoption in 2015 to achieve zero growth, it is still at by far the highest level compared to other countries (Figure 8), and soil degradation is expected to continue for some time to come.

Figure 8: International comparison of pesticide and chemical fertilizer consumption per hectare (2018)



Source: Created by MGSSI based on FAO data

⁹ There are 200 million farms in China, but the average area per farm is small at 0.67 ha, a mere one fourth that of Japan. While a large-scale consolidation of farms is being promoted to raise the income of farmers, in some areas, there is a move towards switching from growing grain to more profitable crops such as vegetables on consolidated farmland. This is why the policy of preventing land use change for non-grain production was introduced. The aim of the policy is to prioritize use of agricultural land for grain production, regular monitoring using satellite imagery and other means is conducted to regulate non-grain production.

¹⁰ [Reuters article \(March 5, 2021\)](#)

¹¹ There is also the issue of soil pollution due to heavy metals and other substances. According to the National Soil Pollution Report published by China’s Ministry of Environmental Protection (the present-day Ministry of Ecology and Environment) in 2014, soil pollution affected 20% of the country’s agricultural land. Also, a report entitled [China’s Environment published in July 2015](#) by Goldman Sachs pointed out that since the available area of agricultural land after excluding the area affected by soil pollution is less than the 120 ha required for food self-sufficiency, soil pollution is a factor pushing up imports. While agricultural soil pollution is not currently seen as a major problem, there are still [reports that cadmium-contaminated grain has entered the market](#).

The government is keen to increase the domestic production of grain and curb imports, but because the problems affecting domestic agriculture cannot be solved overnight, it is reasonable to assume that China will continue to import grain in large quantities.

(3) Future import volume forecasts

In fact, according to the US Department of Agriculture, China's corn imports are expected to reach 26 million tonnes for the 2020 term from October 2020 to September 2021, they may reach close to 30 million tonnes at the current pace of growth. In the past, Japan was the world's leading importer of corn (15.77 million tonnes in 2020), but China has suddenly emerged as the world's top importer. If China's corn imports reach 30 million tonnes as is expected, it will be equivalent to the cumulative total volume of corn imported in 2020 by Japan, South Korea (11.66 million tonnes), and Taiwan (4.42 million tonnes), three countries in East Asia, a region that is particularly dependent on imports for food supply.

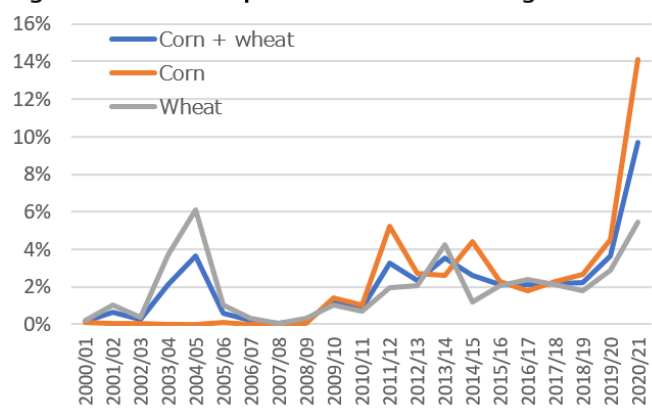
Moreover, with its wheat imports expected to exceed 10 million tonnes in 2021¹², it is possible that China will become the world's leading wheat importer, overtaking the current front-runner Indonesia (10.3 million tonnes in 2020).

3. CONSEQUENCES OF THE GROWTH IN CHINA'S GRAIN IMPORTS

(1) China's growing presence in international trade

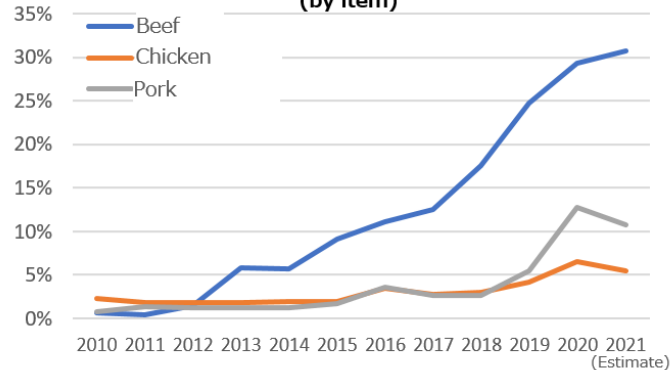
Since 2000, China's share of the world's corn and wheat imports has been at about 3 to 4% at its highest, but by the 2020 term, it is expected to rise to nearly 10% (Figure 9). China is suddenly emerging as a major importer in the international grain market. At the same time, China is becoming more dependent on imports not only for grain, but also for meat (Figure 10). Importing meat is indirectly synonymous with importing grain, and indicates that demand for grain is growing also in countries that export meat to China.

Figure 9: China's imports as share of world grain trade



Source: Created by MGSSI based on USDA data

Figure 10: China's meat imports as share of consumption (by item)



(Estimate) Source: Created by MGSSI based on USDA data

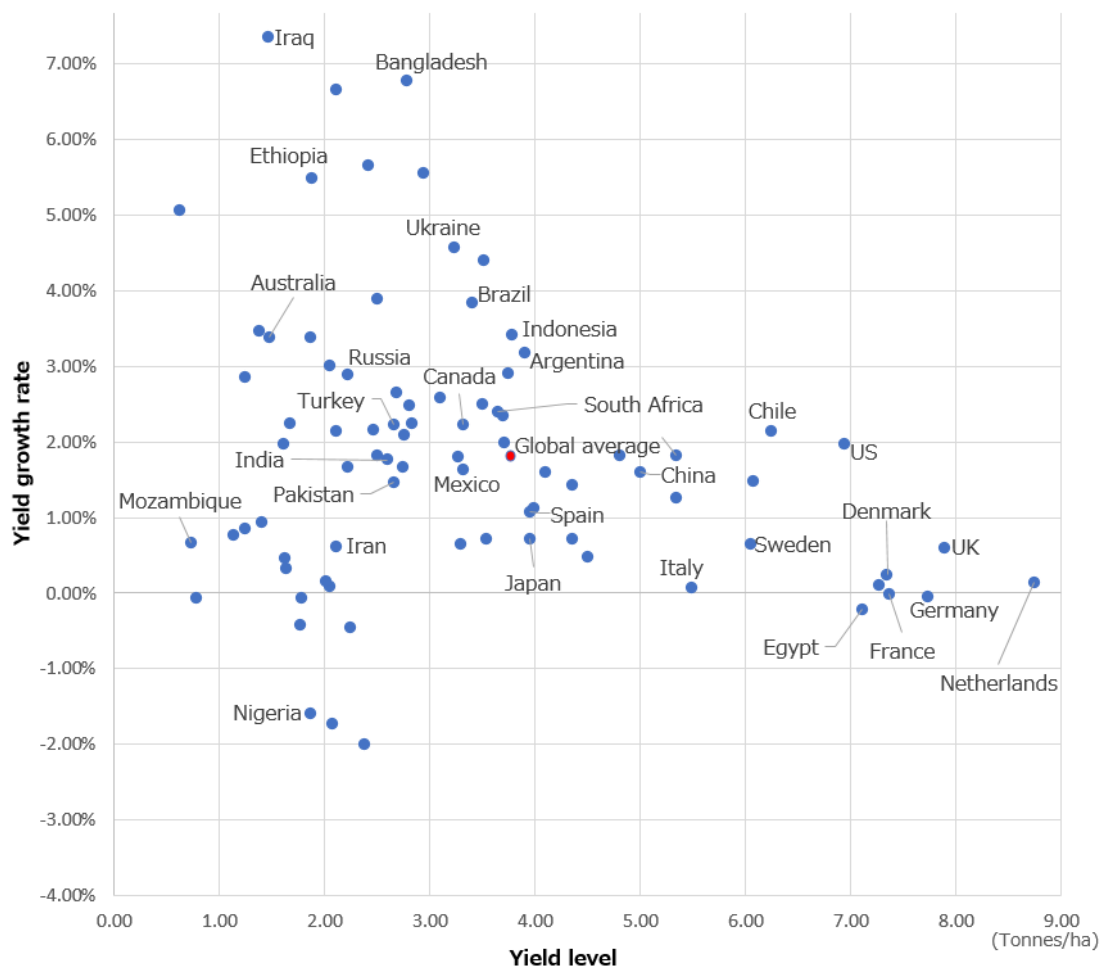
(2) Supply constraints in the world's main grain producing areas

This situation raises concerns over whether the world's grain supply can keep pace with demand. To increase the supply of grain, it will be necessary either to increase the area of land under cultivation or to improve the yield per area (unit yield). However, there is hardly any more room in the world for expanding the area of agricultural land, and even in Brazil, where scope for expansion had until now been expected, further cultivation is difficult due to the consequential environmental burden.

It is difficult to see any promising improvement in the yield occurring in the future. This is because the higher the yield level, the lower the yield growth rate becomes (Figure 11). In France, one of China's wheat import partners, the yield growth rate already stands at 0%, while the yield rate in Ukraine and the US, two of China's corn import partners, is expected to decline in the future. At the same time, the threat of climate change is mounting to a level that cannot be ignored, and restrictions on agricultural production are growing not only in China but also worldwide.

¹² The USDA's annual forecast is 10.5 million tonnes.

Figure 11 Correlation between yield level and yield growth rate of major grains (corn and wheat combined)



Note: The weighted average of corn and wheat has been used. The yield growth rate is the average rate for 2015 to 2019 compared to ten years previous (annual rate). The yield level is the average for 2005 to 2009. Only the countries with a corn and wheat production volume of 1 million tonnes or more in 2019 are shown in the figure.

Source: Created by MGSSI based on FAO data.

(3) Innovation triggered by rising prices

With so many constraints on production, the increase in China's imports is putting more pressure on the main production areas, the grain supply and demand situation is currently tight, and prices are rising. Since the upsurge in demand is mainly for use as feed, it is unlikely to give rise to a situation such as a food crisis. Should the high prices continue, however, incentives for technological development and investment are expected to grow.

For example, in the agricultural sector, it is possible that there will be further progress in research and development to achieve breakthroughs that boost yields and in the development of farming practices that are resilient to environmental impacts. Meanwhile in the livestock sector, the need to introduce technology that leads to cost reductions will grow, such as the development of feeds and varieties with high feed efficiency, which will likely boost technological development. Furthermore, there are also possibilities, not only in upstream technological development, but also in innovative downstream initiatives, such as the reduction of food loss and the development of a variety of foods to replace meat, including aquaculture and meat substitutes.

While the current increase in China's grain imports appears to be having only a negative impact on the world, such as the resulting tightening of supply and demand and rising prices, it also offers the opportunity to give birth to innovations.