



China's Food Security

Key Challenges and Emerging Policy Responses

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THE ISSUE

Feeding China's vast population is a priority issue for Beijing, given historic ramifications of famines and food crises for social and regime stability. Yet the task is vast—China must feed nearly 20 percent of the global population but is home to under 10 percent of the world's arable land—and the challenges to stable food supply are many. These include inefficient agricultural practices, supply chain bottlenecks, changing consumption habits, international trade dynamics, domestic environmental degradation, corruption and data misrepresentation, and a history of food safety scandals. Diagnosing a more contentious international environment, Xi Jinping has placed greater emphasis on agricultural self-sufficiency and diversified sourcing of critical inputs, foodstuffs, technology and know-how. This brief explores key trends, challenges, and policy measures in China's pursuit of food security. It is part of a joint CSIS-Brookings Institution project, Advancing Collaboration in an Era of Strategic Competition, which seeks to explore and expand the space for U.S.-China collaboration on matters of shared concern.

INTRODUCTION

In December 2013, Chinese president Xi Jinping gave a speech at the Central Rural Work Conference of the Communist Party of China stating that China “cannot allow the recent, steady gains we have achieved in grain production to lull us into a false sense of security. We should not forget about the suffering caused by previous famines just because we have managed to recover. Rather, we should recognize that the issue of food security is a red line that would trigger terrible consequences were it ever to be compromised . . . we must adhere to the national food security strategy that puts [China] first.”¹

Any nation's food security is essential to the prosperity and health of its people. China must feed nearly 20 percent of the global population, despite being home to less than

10 percent of the world's arable land and 6 percent of the world's water resources.² This translates into just 0.08 hectares per capita of arable land for the people of China, far lower than the 0.48 hectares of arable land per capita in the United States.³

Historically, famines and food crises in China have sometimes catalyzed political upheavals and regime collapse, underscoring for Beijing the national stability ramifications of securing a steady supply of food. Indeed, China's State Council has cast food security as a “ballast stone” of the country's overall national security.⁴

China's leaders are seeking to sustain and improve the country's food security amid myriad challenges, including inefficient agricultural practices, supply chain logistics bottlenecks, international trade dynamics,

changing consumption habits, water scarcity, and domestic environmental degradation. This research paper details China's pursuit of food security—highlighting key trends, challenges, and policy measures, along with their impacts.

THE SIGNIFICANCE OF FOOD SECURITY IN CHINA

For millennia in China, food security has been inextricably tied with social stability. Food scarcity and famine have often played a central role in triggering violent upheaval. The last Chinese imperial government—the Qing Dynasty (1644–1911)—saw major famines between 1810 to 1907 that resulted in the deaths of tens of millions.⁵ These periods of starvation were often followed by or served as catalysts for major rebellions and deadly conflicts that weakened imperial control and worsened socioeconomic conditions in the empire—all of which contributed to the dynasty's collapse.⁶

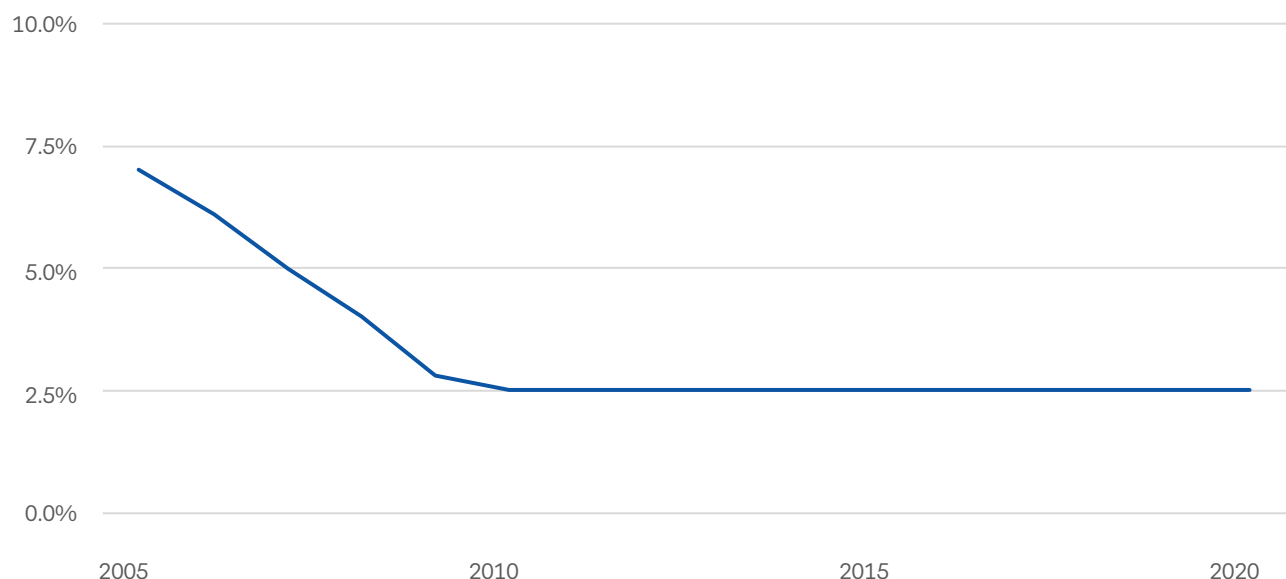
With the establishment of the People's Republic of China (PRC) in 1949, the country's Communist-led government faced several immediate challenges to ensure a steady and sufficient food supply. In the aftermath of decades of foreign invasion and civil war, China's citizens were among the poorest in the world. The country's agricultural labor force was barely recovering from years of mass conscription and movements from the countryside to escape the war. Furthermore, the populace

of around 550 million people was rapidly growing.⁷ Under Chairman Mao Zedong, the PRC carried out land reforms in the countryside, eliminated private landownership, and established agricultural collectives along similar lines to the Soviet Union's state-controlled collectivized approach.⁸ China saw initial success in increasing agricultural output by nearly 4 percent annually from 1952 to 1958.⁹ Increased irrigation throughout the country also improved yields from the collectivized farms.

However, many of the gains made would soon be reversed under Mao's attempt to achieve rapid industrialization through the policies of the Great Leap Forward (1958–1962). Under this initiative, farmers were assigned to make steel in backyard furnaces instead of cultivating crops—which, given their inexperience, often resulted in inefficient production that generated commercially unusable pig iron. Local officials inflated crop production numbers to obscure the adverse effects of Mao's policies, creating an illusion of superabundance. Cadres had farmers following badly planned directives, such as the abandonment of traditional Chinese agricultural techniques in favor of disastrous pseudo-scientific ideas influenced by Soviet agronomist Trofim Lysenko.¹⁰

The agricultural sector was further strained by a series of natural disasters, including the 1958 flooding of large parts of northern China and droughts in 1960–1961.¹¹ These

Figure 1: Prevalence of Undernourishment in China



Source: "World Development Indicators: Prevalence of undernourishment (% of population)," World Bank, accessed December 2023, <https://databank.worldbank.org/source/world-development-indicators/Series/SN.ITK.DEFC.ZS>.

failures contributed to the food security crisis known as the “Three Years of Great Famine,” which caused upwards of 30 to 40 million deaths throughout China—the largest famine in modern history.¹² In the aftermath, Mao would briefly step down, and the Communist Party returned to a more science-based set of agricultural practices.¹³

Chinese scientists played a key role in alleviating starvation and contributing to the global Green Revolution. Renowned agronomist Yuan Longping rejected the theories of Lysenko and discovered a type of hybrid rice in the 1960s that could increase crop yields by over 20 percent.¹⁴ By the late 1990s, this hybrid rice would go on to feed an additional 100 million Chinese citizens.¹⁵ In 2017, Yuan’s hybrid rice would make up over 60 percent of the country’s rice production and would be grown in over 60 countries worldwide.¹⁶

The ascension of Chairman Deng Xiaoping in 1978 led to gradual market-oriented economic reforms. In the countryside, this meant phasing out collective farms in favor of household ownership. Households were allowed to sell crops that were grown beyond government quotas, thus incentivizing increased yields. Agricultural outputs rose from 2.7 percent per year in 1978 to 7.1 percent annually during the five years following the reforms.¹⁷ This contributed to a significant reduction in undernourishment, defined by the World Bank as habitual food consumption insufficient to provide the dietary energy levels required to maintain a normal active and healthy life.¹⁸ As late as 2001, around 10 percent of China’s population faced undernourishment, a figure that declined to below 2.5 percent by around 2010 (see Figure 1).

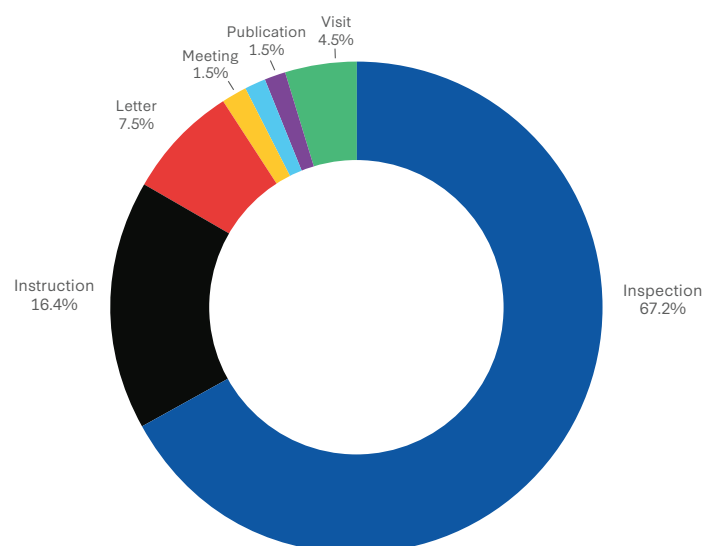
China’s accession to the World Trade Organization in 2002 exposed the country’s agricultural producers to global markets, leading to increasing exports and imports of foodstuffs. The availability of imports enabled a meaningful shift in Chinese consumer preferences.¹⁹ In addition, attention to food safety grew in the aftermath of a series of food and agricultural contamination scandals in the early 2000s.²⁰ Under President Hu Jintao, the PRC would codify new laws standardizing food production and prosecute hazardous food distribution practices in 2009.²¹ Given their country’s history, China’s leaders today are acutely aware of the stakes of food security—as a failure to secure a stable food supply could kindle collective grievances and provoke challenges to their authority, potentially destabilizing the regime.

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STRATEGIES FOR FOOD SECURITY UNDER XI JINPING

Since coming to power, Xi Jinping’s government has made food security a national priority. Reflecting the importance Beijing places on the issue, in March 2023 a book of “Excerpts of Xi Jinping’s Discussions on National Food Security” was published by the Chinese Central Literature Publishing House. The book covered more than 80 speeches, reports, talks, letters, and instructions from Xi Jinping related to food security since 2012.²² A central theme of the book is Xi’s admonition that food security

Figure 2: Distribution of Involvement by Xi Jinping in Food Security Initiatives



Source: Authors’ analysis based on data collected from the *People’s Daily* reporting calendar.

Figure 3: China's Responses to Food Security Challenges



Source: Authors' analysis.

is a matter of economic and political importance. The book includes a warning published by the People's Daily, the party's mouthpiece, that "whether [the Chinese government] can give the common people a satisfactory account of food [security] is a major test of our ability to govern. If our party is in power in China, if we can't even do a good job in food safety, and if we can't do it well for a long time, some people will ask whether it is enough or not."²³

An April 2019 white paper by the State Council names 16 recent major laws related to food security matters, from seed intellectual property (IP) rights to pesticide administration to grain circulation.²⁴ In April 2020, the government also published "six guarantees" to inform prioritization of economic policy following Covid-19: employment, basic livelihood, market entities, operations of grassroots organizations and structure, stability of supply chains, and energy and food security.²⁵ The *Central Document No. 1* published in 2023 focused on rural revitalization, and five of the nine areas of focus directly related to food security—specifically grain production, agricultural infrastructure, technology and equipment support, high-quality development of rural industries, and expanding agricultural employment.²⁶ These documents reflect the central leadership's framing of food security as an important foundation for achieving economic development, social stability, and national security.

From 2012 to 2022, Xi Jinping engaged directly on food security topics 67 times, including through domestic province inspections and instructions to local governors on how to manage agricultural production. Xi's frequent direct monitoring serves as a signal to the rest of the Chinese leadership apparatus of his personal attention to the issue.

Under Xi Jinping, China has undertaken a multipronged strategy to pursue self-sufficiency in food security, addressing the top challenges facing China today (see Figure 3), as detailed in the following sections.

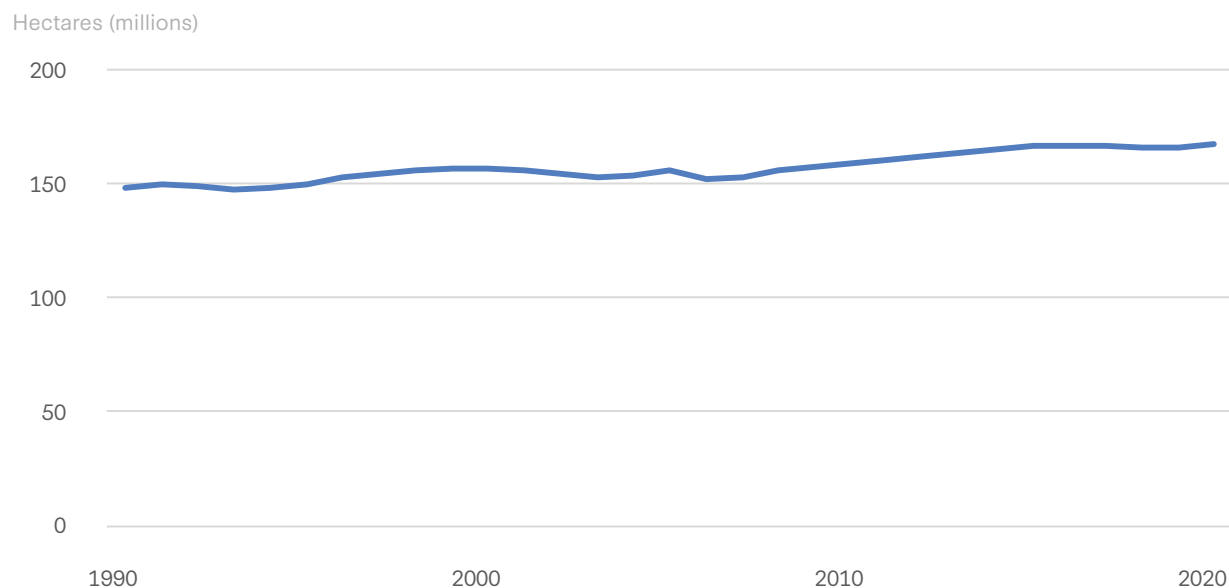
CHINA'S TOP FOOD SECURITY CHALLENGES

DIMINISHING ARABLE LAND

Between 2013 and 2019, China reported a decline of over 5 percent of its arable land, largely attributed to destructive farming practices and local governments repurposing agricultural land for infrastructure and real estate.²⁷

To counteract this decrease, China has embarked on a few pivotal strategies, including the National High-Standard Farmland Construction Plan (2021-2030), a national blueprint for enhancing farmland quality. The blueprint sets goals for farmland creation and upgrading by 2025, 2030, and 2035. It specifies where funding is coming from

Figure 4: Sown Area of Farm Crops in China (1990-2021)



Source: National Bureau of Statistics of China, *China Statistical Yearbook 2023* (China Statistics Press, 2023), <https://www.stats.gov.cn/sj/ndsj/2023/indexeh.htm>.

(a combination of general public budget, bonds, land transfers, etc.), provides annual measures, and lists ways to encourage private entities to invest in the development of high-quality farmland.²⁸ China has also sought to alleviate some of its demographic shifts by increasing the sustainability and productivity of China's agricultural output in urban-adjacent locations.²⁹

In addition, the *Central Document No. 1* from 2019 sets out a “red line” for arable land: no less than 1.8 billion mu (120 million hectares) nationally. In pursuit of this goal, China has introduced farmland restoration measures, crop rotation practices, and fallow land systems. Additionally, Chinese authorities created a strategy for “reclaiming” farmland by reverting agricultural land that had been repurposed for industry, real estate, and infrastructure.³⁰ As shown in Figure 4, from 1990 to 2021 China increased the amount of land being sown for crops by 17.45 percent. Furthermore, from 2021 to 2023, Chinese authorities reclaimed more than 170,000 hectares (420,000 acres) of farmland. Nonetheless, reclaiming farmland does not automatically reset its value. Often, the land has become unsuitable for growing.³¹

China also grapples with pronounced geographical disparities in water resources, and many critical grain-producing provinces are water-scarce. Traditional flood irrigation methods, used by most small farms, often result in significant wastage. Overreliance on groundwater extraction, a direct response to this disparity, has spawned significant environmental concerns.³² To tackle these issues, China is making substantial investments in water-saving technologies, enhancing agricultural irrigation systems, and allocating significant funds—totaling trillions of RMB—to mega projects like the South-North Water Diversion project.³³ The results have been mixed, with some projects showing improved crop production, an increase in farmers' incomes, and substantial reduction in water usage, while others have created significant inter-provincial conflict over resources and financing.³⁴ Additionally, long-term environmental impacts of these projects are subject to debate.

GOVERNANCE CHALLENGES

China's pursuit of food security has been stymied by corruption and data misrepresentation. For example, in 2022, the former top official at the National Food and Strategic Reserves Administration (responsible for centralized control over stockpiled grain), Zhang Wufeng, was felled for corruption.³⁵ Another inherent problem

has been the misrepresentation of data by regional and local officials—a consequence of the prevalent incentive structure in the Chinese bureaucratic system, which promotes cadres who report good news and penalizes those who relay unfavorable news.³⁶ In response, the central government has clarified that it oversees national food security policies, while provincial and local governments bear primary responsibility for making sure every Chinese citizen has enough food to eat.³⁷

China's legacy of decentralizing farmland, stemming from the household responsibility system (HRS) that originated post-collectivization, also poses challenges. The government's restrictions on corporate entities acquiring farmland have resulted in a significant dispersion of agricultural resources among individual farmers. This fragmentation hinders technological advancement, marketing, standardization, and coordination within the sector. It also has incentivized farmers to produce cash crops like fruits and vegetables, given their higher returns compared to staple grains.³⁸

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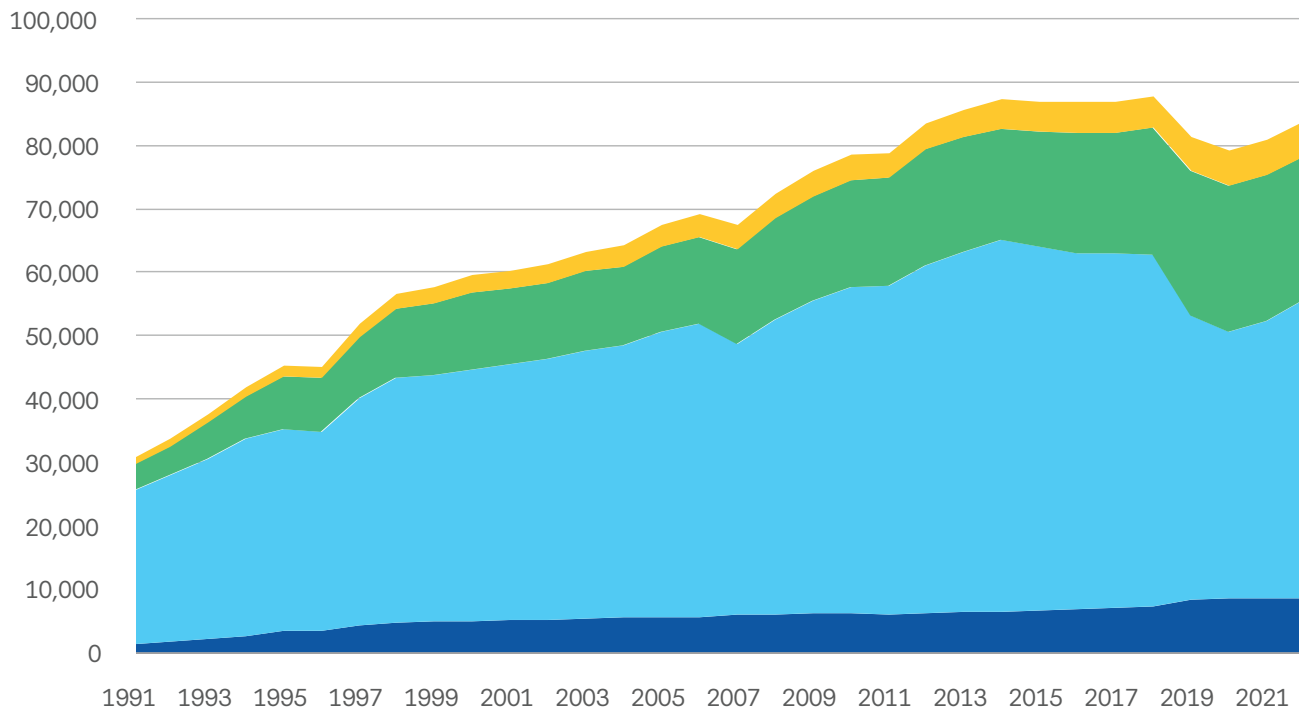
CHANGING CONSUMER DEMANDS

The dietary preferences and demands of China's populace—and especially the rapidly expanding urban middle class—have changed substantially over the past few decades. With increasing disposable income and exposure to global cultures, there is growing demand for safer, more varied, and higher-quality food options. The traditional Chinese diet is based on staple grain, high in vegetables, and low in animal products.³⁹ But as incomes have risen, so too has consumption of refined grains, meats, oils, and sugars. Except for a dip at the beginning of Covid-19 that can be attributed to lack of supply, consumption of meat has more

Figure 5: Consumption of Meat Products in China (1991-2021)

■ Beef & Veal ■ Pork Meat ■ Poultry Meat ■ Sheep Meat

Metric tons (thousands)

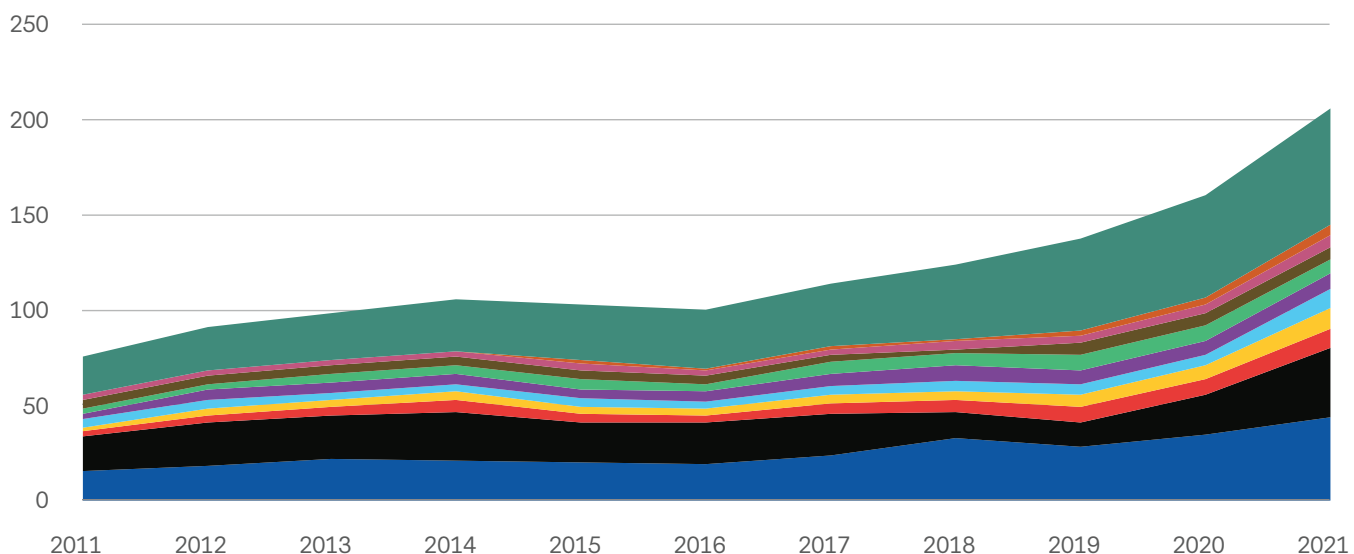


Source: "Agricultural Output - Meat Consumption," OECD Data, 2021, <https://data.oecd.org/agroutput/meat-consumption.htm>.

Figure 6: Food Imports to China by Country (2011-2021)

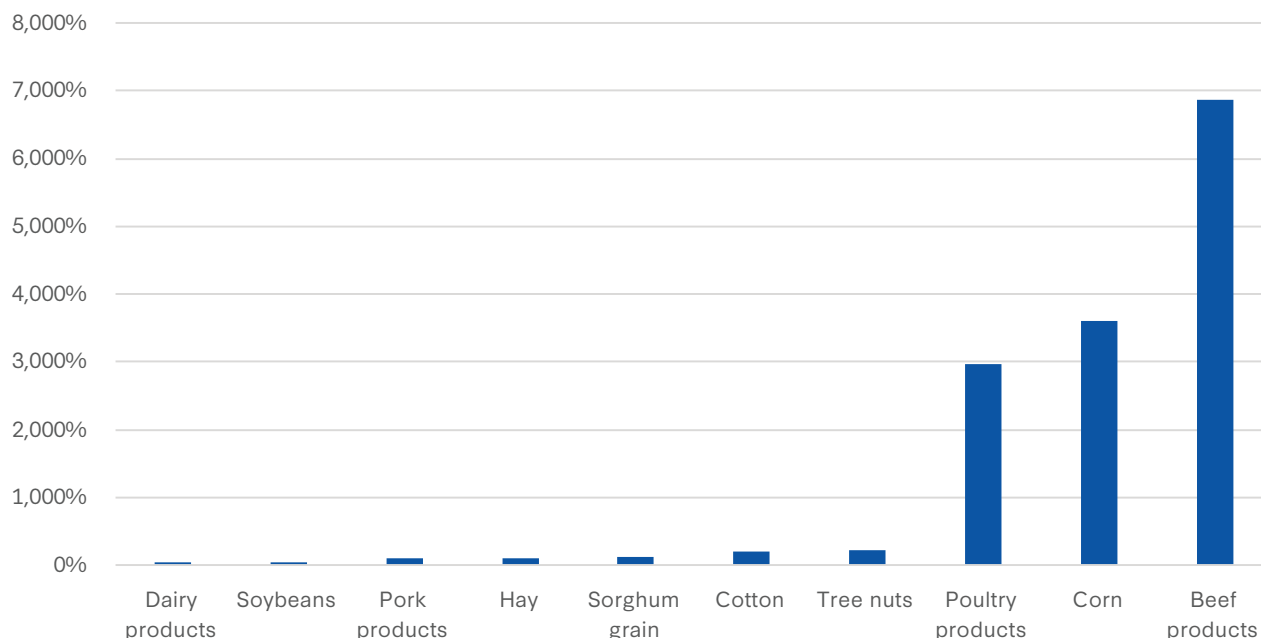
■ Brazil ■ United States ■ New Zealand ■ Thailand ■ Indonesia ■ Canada ■ Australia ■ Argentina ■ France ■ Ukraine ■ Rest of World

USD (billions)



Source: "China Food Imports by Country in US\$ Thousand 2021," World Integrated Trade Solution, <https://wits.worldbank.org/CountryProfile/en/Country/CHN/Year/LTST/TradeFlow/Import/Partner/by-country/Product/Food>.

Figure 7: Percent Change in Top 10 U.S. Agricultural Exports to China (2017-2022)



Source: Courtney Buerger Schmidt and Lon Swanson, "Uncertain Future for China Food Imports," Wells Fargo, n.d. <https://www.wellsfargo.com/insights/agri-food-intelligence/china-food-imports/>.

than tripled since 1990, as shown in Figure 5. In urban markets, consumers now seek out specialty items such as organic produce, dairy alternatives, and imported meats.⁴⁰ As China's growing middle class looks set to encompass over 50 percent of its population by 2025, the increasingly affluent population's demand for meat products will steadily increase—corresponding to growing demand for soy and grain inputs to feed livestock.⁴¹

As shown in Figure 6, food imports have increased dramatically, making China the world's top importer of foodstuffs.⁴² In 2022, China imported approximately 98.3 billion USD in agricultural products, a record high.⁴³ Even amid geopolitical tensions, China has continued to increase the amount of food it purchases from the United States, specifically non-staple foods like beef and nuts, along with products used for feeding livestock like corn and sorghum grain (see Figure 7).⁴⁴

Recently, China has poured resources into research, development, and imports of genetically modified organisms (GMOs) and alternative foods.⁴⁵ Precision gene-edited crops have been at the forefront of boosting crop yields in the United States for decades. However, despite being the first country to commercialize a transgenic crop in 1992, China has been slow to adopt overarching global GMO

technologies. To support local companies in developing GMO IP, Chinese leaders have been reluctant in accepting foreign GMO seed producing companies in the Chinese market. Consumers were also initially hesitant, but public perceptions of genetically modified foods have become more positive in recent years. Recently, the Chinese Academy of Agricultural Sciences (China's national agricultural scientific research organization) laid out a five-year development plan calling for "construction of new key laboratories, a grain crop science center, a molecular design breeding center, a national crop germplasm resource bank, a livestock and poultry bank, and an agricultural microorganism bank."⁴⁶

The demand for imported foods also stems from long-standing concerns about domestic food safety. Imported goods are perceived as meeting higher safety and quality standards, making them particularly appealing to a population increasingly concerned with health and wellness. Over the years, the country has faced numerous high-visibility food safety scandals involving adulterated or toxic domestic products, leading to widespread perception that imports are safer than domestic products.⁴⁷ One particularly impactful incident in 2008 involved the adulteration of baby formula with melamine, which led to the deaths of six infants and sickened nearly 300,000 others.⁴⁸

In response, China has improved oversight and regulation of its food industry. The country's first comprehensive food safety law was enacted in 2009 and has since been amended multiple times. The law encompasses a wide range of regulations aimed at ensuring food quality and consumer safety. It established a licensing system for food production and food operation, along with a safety review system for new foods entering the market. The law also addresses the logistics of food storage and distribution and sets national standards for various aspects of food products—including additives, hygiene, labeling, examination, and packaging—to bring China's food industry up to international standards. Additionally, the law outlines specific food safety responsibilities for businesses, ranging from manufacturers to retailers, thereby aiming to make the entire food supply chain accountable for adhering to safety norms.⁴⁹

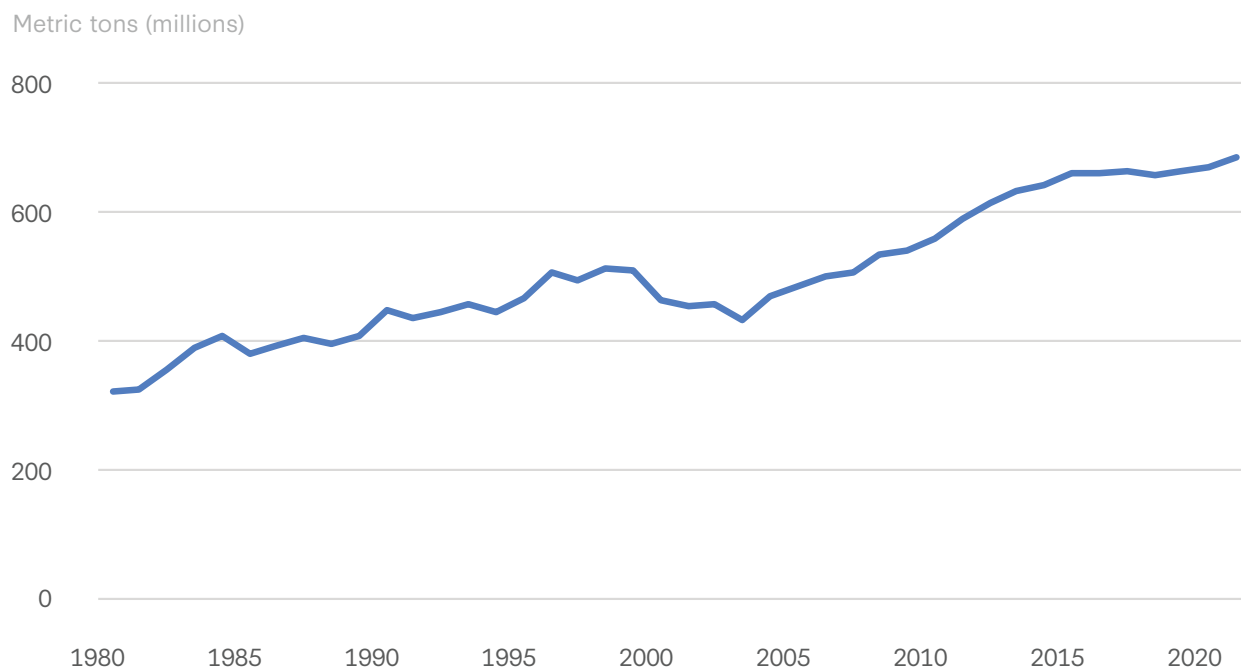
WORKFORCE DYNAMICS

The allure of urban life, combined with the promise of better wages, has seen many Chinese individuals leaving the agricultural sector for city-based jobs. Migrant jobs in urban centers offer better pay and seemingly improved prospects for future generations.⁵⁰ Sectors such as transportation and

logistics that have huge impacts on the agricultural sector also face workforce challenges. By the end of 2021, China faced a shortfall of 4 million truck drivers, an issue that will continue to be exacerbated as the working-age population in the country begins to shrink and people look toward more white-collar jobs. As birth rates decline and the population ages, fewer young people are available to replace the aging workforce, further compounding labor shortages in sectors like agriculture, transportation, and logistics.⁵¹

The Chinese government has taken steps to make farming more lucrative and economically viable, beginning in the early 2000s with the abolition of the 2,600-year-old agricultural tax (similar to modern property taxes). Since then, central authorities have continued to reduce or remove taxes on agriculture, aiming to alleviate financial pressures on farmers.⁵² In 2006, the government also introduced a support price for wheat: when market prices dip below the annually set minimum price, the government commits to purchasing wheat from farmers at the support price, guaranteeing a level of income for farmers and incentivizing continued cultivation of this specific staple crop.⁵³ The success of the strategy to support wheat is demonstrated in China's grain output, which increased between the early 2000s and 2020 (see Figure 8).

Figure 8: China's Grain Output (1980-2020)



Source: National Bureau of Statistics of China, *China Statistical Yearbook 2023* (China Statistics Press, 2023), <https://www.stats.gov.cn/sj/ndsj/2023/indexeh.htm>.

Recently, the government introduced initiatives to bolster farmers' incomes directly. In April 2023, the Chinese government allocated 10 billion yuan (approximately 1.38 billion USD), in one-time financial subsidies for farmers.⁵⁴ However, despite these efforts, attracting younger generations to the farming profession remains a challenge. As recently as 2019, studies have shown that aging populations in rural areas continue to place a drag on agricultural productivity and negatively affect agricultural wages.⁵⁵

TECHNOLOGICAL AND PRODUCTIVITY ISSUES

China's agricultural landscape is uniquely characterized by the prevalence of small family farms dispersed throughout the country, rather than the large factory-farming models in many developed countries. While this model is a cornerstone of the Chinese economy, providing employment to millions, the fragmented nature of farms complicates the dissemination of new agricultural technologies and makes coordination among farmers, standardization of practices, and effective marketing difficult.⁵⁶

To bridge this divide, China launched the National Agricultural Technology and Education Cloud Platform in 2015. This digital platform promotes knowledge sharing and independent learning among agricultural workers. Farmers provide data on crops, pests, and on-the-ground conditions, and in return they can access online training courses, diagnostic AI, and helplines.⁵⁷ Start-ups for strategic AI technologies can tell farmers which insects they are looking at with just a picture and which pesticides they should use to protect their crops.⁵⁸ The central government also dispatches specialized expert teams to provinces affected by natural disasters or falling behind in agricultural output to deliver on-the-ground support and promote the popularization of advanced agricultural technology.⁵⁹

In the early twenty-first century, initiatives like expanding irrigation systems propelled China's agricultural total factor productivity (TFP) growth—from under 1 percent in the 1970s to an average of 2.48 percent from 2001 to 2010. However, this expansion has fallen in the years since, as China has been unable to maintain a steady rate of agricultural TFP growth through continued policy improvements and investments in agricultural research and development (R&D). China still outperforms every other region except South Asia and the so-called transition countries (former Soviet Union)

for agricultural TFP growth, but it will have to work increasingly hard to maintain this advantage.⁶⁰ China's public sector expenditures on agricultural R&D were approximately 6.6 billion USD in 2021, larger than those of India, the United States, and Brazil combined. However, in the United States, the private sector accounts for an additional 15 to 20 billion USD, while in China this number is functionally zero.

In response to the productivity conundrum, China has embraced R&D solutions. Substantial financial inflows have been directed toward hybrid seed technologies, particularly in the domain of hybrid rice, corn, soybeans, and wheat. China also established "core areas" for production of certain products (e.g., potatoes in Southeast China, double-cropping rice in the Yangtze River Economic Belt).⁶¹ In 2021, amendments to China's Seed Law strengthened the protection of legal rights and interests of owners of new plant varieties, encouraging R&D of seeds.⁶²

CLIMATE CHANGE

China's agricultural sector is heavily exposed to climate change. Between 1981 and 2010, shifting climate patterns and ozone pollution collectively slashed China's crop yields by 10 percent, an annual loss of 55 million tons of crops.⁶³ As temperatures rise, extreme weather events, melting glaciers, environmental degradation, and water scarcity and contamination will intensify the implications for China's agriculture.

China's focus has been on building resilience and adaptation mechanisms to confront these challenges and shoring up the system's response to natural disasters. Throughout the 2010s, China made significant investments in mega projects to ameliorate the effects of climate change.⁶⁴ More recently, there has been a palpable shift toward promoting the green development of agriculture and encouraging farmers to switch to higher-yield and stress-resistant crops.⁶⁵ China is also looking to the oceans to bolster food security, as evidenced in a series of recent initiatives aimed at promoting and streamlining marine aquaculture. In November 2017, the Ministry of Agriculture unveiled the National Mariculture Development Plan (2017-2025). As per this blueprint, China aspires to establish 200 national-level demonstration marine ranches by 2025.⁶⁶ In April 2023, President Xi coined the term "blue granary" to describe marine fisheries and mariculture, specifically deep-sea fishing and ranching.

Shortly thereafter, Chinese authorities released guidelines on deep-water aquaculture as a key piece of fortifying the agricultural supply chain.

FOOD WASTE

Between 2014 and 2018, an estimated 27 percent of all food in China was lost or wasted, comparable to global averages.⁶⁷ Food waste and loss can occur at any point in the supply chain, from death of livestock to crops damaged by improper storage to expired products thrown out in households.⁶⁸ China has made a concerted effort to address food waste through a series of “campaign-style” reforms. In August 2020, President Xi Jinping launched the “Clean Your Plate Campaign 2.0,” modeled on an earlier homonymous anti-corruption initiative.⁶⁹ Following the “Clean Your Plate Campaign 2.0,” China introduced the Anti-Food Waste Law in April 2021. This State Council-spearheaded initiative included educational campaigns, regulatory measures against businesses, the introduction of systems for enhanced procurement, storage, and handling practices, and methods for increasing efficiency in food production, with relevant incentives and penalties.⁷⁰

GEOPOLITICAL DYNAMICS

Following geopolitical shocks including the 2017 trade war with the United States, the Covid-19 pandemic, and the Russian invasion of Ukraine, China has sought to reduce its exposure to external dependencies. This strategy includes ramping up international land acquisition, increasing bilateral and multilateral trade deals, diversifying international supply chains, expanding overseas agricultural activities through projects like the Belt and Road Initiative (BRI), and encouraging domestic companies to take their operations global.⁷¹

While Chinese acquisition of farmland in the United States has garnered attention in Washington, most of its international land purchases are in Asia and Africa. According to Land Matrix, a European land monitoring organization, between 2011 and 2020 Chinese companies purchased or leased 6.48 million hectares of land for agriculture, forestry, or mining—equivalent to the size of Latvia.⁷² Chinese companies purchase arable land in other countries and sell their products back to consumers in China through individual deals as well as through BRI projects and other similar initiatives; China has signed over 100 agricultural cooperation agreements with BRI countries.⁷³

Additionally, China has sought to grow its global influence in food security and governance. China has held the director-generalship of the Food and Agriculture Organization (FAO) since August 2019 and has a position on the World Food Programme (WFP) executive board. China also hosts the WFP Centre of Excellence in China, which takes advantage of China’s experience in reducing poverty and hunger to facilitate activities relevant to the Sustainable Development Goals through training, policy dialogue, and capacity building.

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In October 2019, the State Council Information Office published a white paper titled “Food Security in China” to “provide a full picture of how food security operates in China, in order to increase the international community’s understanding in this important field.”⁷⁴ It frames China’s role in global food security as opening its market further, upholding WTO obligations, sharing food security expertise and resources, promoting top domestic food businesses to expand internationally, forging food and agriculture cooperation agreements on bilateral and multilateral levels, collaborating on research with nations and global entities, offering emergency food aid as per its capabilities, and actively engaging in global food security governance.⁷⁵

Furthermore, the Russian invasion of Ukraine has brought into focus the fragility of international food supply chains. The war in Ukraine generated a global spike in food prices, which impacted China disproportionately, given its position as the world’s top importer of foodstuffs.⁷⁶

A similar challenge arose from China’s draconian Covid-19 regulations. As China scrambled to enforce lockdowns in a bid to curb the virus’s spread, transportation bottlenecks, labor shortages, and logistical challenges threatened the

steady flow of essential commodities—including food—both domestically and internationally. While headlines of people locked in their houses in Shanghai made the news, lack of food during lockdowns appears to have been prevalent throughout rural China as well. A study of 2,631 rural households showed that an increase of 100 confirmed Covid-19 cases in a county corresponded with a statistically significant decrease in per capita intake of dietary energy, carbohydrates, fats, and proteins, an effect that was especially pronounced in low-income groups.⁷⁷

To buffer against such shocks, China has traditionally maintained vast food reserves. Estimates from the U.S. Department of Agriculture projected that in 2022, China possessed 69 percent of global corn reserves, 60 percent of rice, 51 percent of wheat, and 37 percent of soybeans.⁷⁸ In recent years, China has increased its investment in stockpiling. The Chinese National Bureau of Statistics reported that 2022 pork production was at its highest level since 2014 and that China bought a record number of soybeans in 2023, both attributed to replenishment of

Figure 9: Five-Year Legislative Plan of China’s National People’s Congress for 2023–2028
Laws related to food security

Real Property Registration Law
Among other things, addresses the conversion of agriculture property rights
Rural Collective Economic Organizations Law
Defines economic and legal rights of rural collective organizations, which de facto govern collectively owned land
Farmland Protection Law
Outlines protections for arable land
Qinghai-Tibet Plateau Ecological Conservation Law
Offers protection for geographies in the freshwater bastions of Qinghai and Tibet (water used for agriculture)
Territorial Spatial Planning Law
Governs rural and urban land use
Law on Ensuring Food Security
Addresses food security issues from production to storage to consumption
Agriculture Law (regular revisions)
Details of revisions as-of-yet unknown
Marine Environmental Protection Law
Expected to set updated regulations for mariculture (last amended 1999)
Fisheries Law (revisions)
Expected to set updated regulations for fisheries (last amended 2004)
Water Law (revisions)
Expected to set updated regulations for utilization of water (last amended 2016)

Source: Changhao Wei and Taige Hu, “Translation: Five-Year Legislative Plan of China’s National People’s Congress for 2023–2028,” NPC Observer, September 7, 2023, <https://npcobserver.com/2023/09/china-14th-npc-five-year-legislative-plan/>.

reserves depleted during the pandemic.⁷⁹ China also inked an agreement with Russia in September 2023 establishing a new 159 million USD grain hub strategically located on both sides of the border between the Russian Jewish Autonomous Oblast and China's Heilongjiang Province. Accompanying this deal were agreements to enhance storage and transportation capabilities.⁸⁰ A 26 billion USD deal was also inked between Beijing and Moscow in October 2023 to export 70 million tons of grain over the next 12 years.⁸¹ Beijing and Moscow also sought to accelerate the construction of the New Russia-China Land Grain Corridor—a Sino-Russian initiative established in 2012 that would build out infrastructure to allow for the export of more grain by Russia and other Eurasian countries to China.⁸²

CHINA'S FUTURE FOOD SECURITY PATH AND IMPLICATIONS

Many challenges will likely influence the PRC's food security approach in the coming years and decades. On the policymaking front, China's Food Security Law was recently submitted for deliberation at the third session of the Standing Committee of the 14th National People's Congress on June 26, 2023. Although the draft is not yet public, writer Gong Yixi from the People's Congress Multimedia Office has stated that the purpose of the law is to "guarantee effective food supply, ensure national food security, and enhance the ability to prevent and defend against food security risks."⁸³ He also states that the law will include provisions on protecting farmland, food production, food reserves, food circulation, food processing, food emergencies, food conservation, supervision, and management. Earlier food security publications from the central government focused on domestic facets of food security, such as farmland reclamation and increasing employment in the agricultural sector.⁸⁴ The forthcoming law, by comparison, seems to take a more national security-focused lens.⁸⁵

As outlined in Figure 9, the newest iteration of the National People's Congress five-year legislation plan, which sets priority for legislation through 2028, names 10 laws directly related to food security.⁸⁶

China has made significant efforts to achieve self-sufficiency in feeding its population. Under Xi, it has channeled substantial resources into strategies for enhancing agricultural productivity, reducing waste, and diversifying sources of supply to avoid overreliance on

single markets for food imports. However, the pursuit of absolute self-sufficiency in food security is an improbable, if not impossible, goal.

The sheer scale of China's population compared to its share of arable land will continue to pose a significant problem, compounded by environmental constraints. Even with advanced technologies, there are natural limits to how much food can be sustainably produced. Achieving self-sufficiency would likely mean reverting to a diet based primarily on staple foods that does not meet modern nutritional standards and food preferences. Moreover, the concept of self-sufficiency in the globalized era is increasingly outdated. The global food market is intricately connected, and any pursuit of autarkic food self-sufficiency would cause China to lose out on the benefits of a functioning global agricultural market which, while imperfect, does benefit from year-round output and market-based adjustments to address imbalances in supply and demand.

By necessity, if not by choice, China will have to continue to depend upon imports to meet the food demands of its population. To guard against risks of dependencies, China likely will continue seeking to diversify its sourcing of critical inputs, foodstuffs, technology, and know-how.

This study makes clear that Xi has set food security as a leader-level priority. He views such efforts as directly linked to China's national security and to the legitimacy and survivability of the Chinese Communist Party. As the world's leading importer of foodstuffs, the strategies that China has proposed and initiated will have significant spillover effects on the rest of the world. This makes China's efforts to enhance its food security not just a matter of concern for China, but indeed an issue of importance across the world. ■

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