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Research Report

China's appetite for international agricultural investment: Case studies of Kyrgyzstan, Myanmar and Tanzania

ODI Report

Provided in Cooperation with:

Overseas Development Institute (ODI), London

Suggested Citation: Johnston, Lauren A.; Downie, Edmund; Mwakalikamo, Joshua; Rudyak, Marina (2021) : China's appetite for international agricultural investment: Case studies of Kyrgyzstan, Myanmar and Tanzania, ODI Report, Overseas Development Institute (ODI), London

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Report

China's appetite for international agricultural investment: case studies of Kyrgyzstan, Myanmar and Tanzania

L. Johnston, E. Downie, J. Mwakalikamo and M. Rudyak

November 2021



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How to cite: (www.odi.org/publications/chinas-appetite-for-international-agricultural-investment-case-studies-of-kyrgyzstan-myanmar-and-tanzania.)

Photo: Closeup of brown whole grain rice seed surrounding Chinese 100 yen renminbi bill. Credit: J. J. Gouin/Shutterstock

Acknowledgements

Many people contributed to this report, including and especially numerous very talented reviewers. We the four co-authors express our thanks to each of them, and to all members of the ODI team who made this report possible, among whom Dr. Rebecca Nadin and Ms Josie Emanuel deserve particular thanks.

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Acronyms/Glossary

AQSIQ	General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China
ASA	ASA Microfinance Tanzania Limited
ASEAN	The Association of Southeast Asian Nations
BRI	Belt and Road Initiative
CAU	China Agricultural University
CMEC	China–Myanmar Economic Corridor
EAC	East African Community
eWTP	electronic World Trade Platform
ha	hectares
LDC	Least Developed Country
MOALI	Ministry of Agriculture, Livestock and Irrigation
MoU	Memorandum of Understanding
ORP	China's Opium Replacement Planting
SADC	Southern African Development Community
SME	small and medium enterprise
SPS	sanitary and phytosanitary
SUA	Morogoro's Sokoine University of Agriculture
TAEPZ	Tanzania Agricultural Export Processing Zone
TARI	Tanzania Agricultural Research Institute
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
WITS	World Bank's World Integrated Trade Solutions
WTO	World Trade Organization

Executive summary

The Covid-19 pandemic had a devastating impact on livelihoods across developing countries. In agriculture, disruptions in the supply chains led to failure of crops to reach markets and interruptions of the planting processes and cycles, as well as migrant labour flows.

In China, those stressors have compounded a set of underlying agricultural stress points. Accumulated environmental damage has reduced the arable land available. Climate change is increasingly affecting agricultural production, including through the rising incidence of floods, droughts and disease. International trade tensions with key agricultural suppliers, such as Australia and the United States, have also added to those structural factors. These led to the point that, in August 2020, concerned by food security, the President of China Xi Jinping called on the Chinese people to not waste food, a call that has since become a national campaign. China's latest Five-Year Plan (2021–2025) has a food security agenda for the first time.

Building green and inclusive agri-food systems is one of the most powerful ways to recover from the current crisis by better production, better nutrition, better environment and a better life. Moreover, by equivalently investing in agriculture in other developing countries, China can have a new source of external economic growth, foster poverty alleviation and economic development internationally, and contribute to the alleviation of internal food security fears.

Despite compelling push and pull factors, constraints are restricting China's expressed interest to partner with developing countries to grow their agricultural sectors. This study

explored the related trends in three countries – Kyrgyzstan, Myanmar and Tanzania – with different geography, strategic importance, institutional framework and existing economic ties, especially related to agriculture.

For each case study, crops and products of unmet demand in China have been identified. For Tanzania, these include cassava, cashew nuts and coffee, alongside emerging new potential to export soybeans. For Kyrgyzstan, the underlying agricultural potential is much lower. Nevertheless, there appears to be a significant potential to capture niche markets in China for selective fruits and organic products such as honey.

A pre-requisite, however, is the agreement and enactment of trade-enabling legal frameworks. In the case of Myanmar, the agricultural ties to China are already intense to the point of overdependence. Optimising the potential and management of current ties is important, alongside fostering the development of new third markets that, in turn, would serve to alleviate dependence concerns.

Several stakeholders need to be engaged to realise that potential. In China, the central government sets the priorities and budgets. In Kyrgyzstan and Myanmar, the provincial government of the neighbouring Chinese province is important to the regulatory context of bilateral trade. The decisions made and constraints faced by companies that directly import and invest in agricultural produce and related industries, alongside e-commerce companies, are also important. So too are specialised trade promotion-related organisations such as the China Chamber of Commerce and Export of Foodstuffs, Native Produce and Animal By-Products.

In the context of the Covid-19 pandemic, increasingly unstable climate patterns and growing populations in parts of Asia and Africa, it would be timely to better foster stakeholder cooperation towards enhanced agricultural sector growth and trade within and across countries, especially poor countries.

1 Introduction

The emergence of the Covid-19 virus in late 2019 led to the dramatic shutdown of China's economy. The shutdown had multiple impacts, including on crop and livestock production, agricultural supply chains, income and employment shocks for farmers and a shift in sales models towards e-commerce.¹² Some reports suggest that barely 4% of seed stores were in regular operation in 2020.³ Disruption to agricultural production has also led to food security fears, with production of China's three most important grain crops – rice, wheat and corn – all affected.⁴

Simultaneously, climate change is already adversely affecting agricultural production in China, including through the rising incidence of floods, droughts and disease. So too are recent and potentially lasting trade tensions with major agricultural suppliers, including the United States and Australia. Although in 2020 China succeeded in alleviating absolute poverty,⁵ food security fears are clearly rising. Constraints on the agricultural labour and production system as a result of the Covid-19 pandemic also galvanised political will to address China's underlying and much larger and more challenging structural food security concerns.

To reduce food consumption, in August 2020 President Xi Jinping called on the Chinese people not to waste food, a call that has since become a national campaign.⁶ Media reports suggest that Chinese consumers waste some 17 to 18 million tonnes of food annually – enough to feed 30 to 50 million people.⁷ In terms of future food supplies, in January 2021 the Ministry for Agriculture and Rural Affairs announced the construction of a national crop germplasm bank (a crop-related seed bank).⁸ Speaking at the China-CELAC (Community of Latin American and Caribbean States) Forum for Agriculture Ministers in March 2021, the Director-General of the United Nations (UN) Food and Agricultural Organization (FAO), Chinese national Qu Dongyu, declared:

Building green and inclusive agri-food systems is one of the most powerful ways to recover from the current crisis by better production, better nutrition, a better environment and a better life. Now we have to act. We need to transform our agri-food systems to provide food security and better nutrition for all, be economically sustainable, inclusive, and have a positive effect on the climate and the environment.⁹

- 1 <https://www.scmp.com/economy/china-economy/article/3051737/coronavirus-hits-chinas-farms-and-food-supply-chain-further>
- 2 <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0241167>
- 3 <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0241167>
- 4 <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0241167>
- 5 http://www.xinhuanet.com/english/2021-04/06/c_139860414.htm
- 6 <https://www.forbes.com/sites/salgilbertie/2020/07/28/china-food-crisis-rising-domestic-prices-and-large-import-purchases-send-a-signal/>; <https://www.theguardian.com/world/2020/aug/13/operation-empty-plate-xi-jinping-makes-food-waste-his-next-target>
- 7 <https://economictimes.indiatimes.com/news/international/world-news/with-rising-population-and-declining-arable-land-china-may-be-staring-at-a-major-food-crisis/articleshow/77942570.cms>
- 8 <https://economictimes.indiatimes.com/news/international/world-news/china-builds-worlds-largest-seed-bank-to-boost-food-security/articleshow/80133746.cms?from=mdr>
- 9 <http://www.fao.org/director-general/speeches/detail/en/c/1377353/>

While on the world markets, China's grain buyers have been purchasing corn, wheat and barley to restock supplies and keep food price inflation low.¹⁰ In December 2020, despite bilateral trade tensions, Australia shipped 800,000Mt of wheat to China – the largest ever monthly wheat export to a single country.¹¹ In 2020 China purchased some 11.3 million tonnes of corn, more than double the previous year.¹²¹³ In a single week in February 2021, Chinese

buyers purchased 5.8 million tonnes of corn, including 2.1 million tonnes on one day alone.¹⁴

In the medium and longer term, China's latest Five-Year Plan (2021–2025), released in March 2021, for the first time has a food security agenda and goal (Box 1), on top of a priority rural and agricultural development agenda. The Plan also pushes China in the direction of greater digitisation and the greater use of artificial intelligence, agendas that are also increasingly being applied to agriculture.¹⁵

Box 1 China's 14th Five-Year Plan (2021–25) and outline of long-term goals for 2035: agriculture-related goals¹⁶

1. Adhere to the priority of agricultural and rural development, and comprehensively promote rural revitalization.
2. Improve agricultural quality, efficiency and competitiveness.
3. Implement rural infrastructure construction activities.
4. Improve the urban–rural integration development system and mechanism.
5. Achieve an effective connection between the consolidation and expansion of poverty alleviation achievements and rural revitalization.

Inaugural food security-related goals:

6. Overall grain production should exceed 650 million tonnes
7. Preservation of 120mn hectares of arable land (roughly equivalent in area to South Africa)

10 <https://www.farmweekly.com.au/story/7110658/china-stuns-market-with-monster-corn-purchases/?src=rss>

11 <https://www.spglobal.com/platts/en/market-insights/latest-news/agriculture/020521-australia-exports-25-mil-mt-of-wheat-in-dec-record-volume-to-china-source>

12 <https://www.world-grain.com/articles/14753-china-imports-record-amount-of-grains-in-2020>

13 <https://www.reuters.com/article/china-economy-trade-agriculture/update-1-chinas-corn-wheat-imports-in-2020-reach-record-highs-idUSL1N2JToUW>

14 <https://www.farmonline.com.au/story/7110658/china-stuns-market-with-monster-corn-purchases/>

15 <http://epaper.chinadaily.com.cn/a/202103/08/WS60456679a31099a23435477d.html>

16 Sources: <https://www.globaltimes.cn/page/202103/1217749.shtml>; http://www.gov.cn/xinwen/2021-03/11/content_5592407.htm

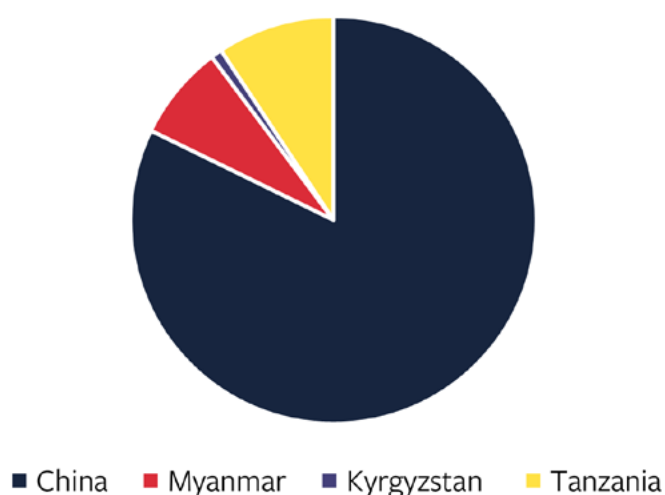
In 1994, when China's arable land area was diminishing thanks mainly to increasing pollution (see Figure 1), Lester R. Brown of the WorldWatch Institute wrote *Who will feed China?* Nearly three decades later, the more apposite question may be 'who will feed China well?'.¹⁷

This report explores this question in the context of accelerating environmental and geopolitical change and uncertainty. In particular, it explores the status of China's agricultural ties with countries of the Global South in order to realise greater mutual food security. While agriculture may constitute a small proportion of China's overall outbound investment, for countries contiguous to China especially official data may hide high levels of informal trade and investment. To shed light on these trends the report explores the political, economic, diplomatic and economic relationship between China and three developing countries – Kyrgyzstan, Myanmar and Tanzania – to better understand China's appetite

for international agricultural investment and how these ties can be enhanced to improve mutual food security and living standards in general.

China's relationship with the three country case studies differs in terms of geography, strategic importance, institutional frameworks and existing economic ties, especially as related to agriculture. The three countries also have varying degrees of economic dependence on China, with Myanmar by a significant margin more economically dependent on China than the other two. All, however, have expressed interest in deepening their agricultural ties with China. As neighbours of China, Myanmar and Kyrgyzstan are geographically better positioned with respect to the logistical challenge of transporting agricultural products over long distances. Tanzania, while more distant, is a potentially important partner for China in East Africa. As such, the Tanzania case study focuses on crops that may be of potential interest to China.

Figure 1 China and three surveyed countries by arable land area (hectares), 2016



Source: World Bank (2021)

17 <http://www2.lv.psu.edu/jxm57/explore/china2011/pdfs/Who%20will%20feed%20China.pdf>

The report begins by providing an overview of the factors that may be driving China to look anew at international agricultural frontiers. It starts by outlining the drivers underlying rising food insecurity in China, including environmental degradation and an ageing population. It then looks at some of the key factors informing China's outward agricultural investment, such as a desire to diversify food sources in the context of geopolitical tensions with major agricultural exporters in high-income countries, South–South development cooperation and economic and investment opportunities.

Sections 3, 4 and 5 present the country case studies for Kyrgyzstan, Myanmar and Tanzania respectively. The report examines some of the basic socioeconomic characteristics of the three case study countries, and the potential to work

with China directly and indirectly on food security-related matters. For each country, the following is outlined: 1) Introduction to the agricultural sector; 2) Survey of issues in contemporary bilateral political economy, including an overview of aid, trade and investment, with a particular focus on agriculture; 3) Areas of opportunity to expand bilateral agricultural ties; 4) Barriers and risks to expanding agricultural ties; and 5) Recommendations.

Section 6 summarises the case studies in the context of China's agricultural supply and demand context. Section 7 offers related recommendations (with the appropriate caveats). Finally, the report seeks to offer recommendations for local policy-makers and civil society in each of the three countries, for civil society and policy-makers in China and the United Kingdom and among the international development community more broadly.¹⁸

¹⁸ The recommendations presented here, and the research underpinning them, are limited by the time available for research, the availability of data and information, including non-disclosure of some bilateral agreements with China, and the study's subsequent reliance on secondary sources in Chinese, English and relevant local languages, Russian and Kiswahili especially.

2 Agriculture and food security: domestic constraints and drivers of overseas investment

Certainly, debate around China's interest in guaranteeing its food security via other countries has popularised fears that it is acquiring agricultural land wherever possible, whenever possible.

In 2011 *The New York Times* ran an article headlined 'China's interest in Brazilian farmland makes Brazil uneasy'.¹⁹ In 2015, the Brookings Institution published a commentary entitled 'What do we know about the Chinese land grab in Africa?'²⁰ In an attempt to understand the facts and dispel any related myths, and also in implicit partial answer to Lester Brown's question of a decade earlier, in 2015 China-Africa expert Deborah Brautigam published a book called *Will Africa feed China?*²¹ Defying public perceptions, Brautigam found that land acquisitions, alongside China's farming investments, are in fact limited.

In overall line with Brautigam, this survey suggests that China appears not to be driven by 'land grabs' but by a variety of both interlaced and independent factors. From the perspective of China's own development gains, successfully increasing rural incomes and ending food- and nutrition-related poverty appears to be imperative to any economic development and national poverty alleviation agenda. That is, by investing in agriculture and farming regions China is both

taking advantage of investment offerings, as well as the potential to sustainably elevate living standards elsewhere. Overall, this study suggests that this explains China's emerging agricultural interests in other developing countries more than any supposed 'land grab'.

Going beyond the land grab narrative, this section sets out the overall drivers of China's international agricultural investment, including the constraints on domestic agricultural production; China's desire to diversify sources of imports to reduce reliance on core trading partners; South-South geopolitical ambitions; and economic opportunities. This sets a more nuanced national context for China in which to interpret the ensuing and otherwise independent bilateral case studies. This also broadly sets out the core trends that helped to inspire this study.

2.1 Constraints on domestic agricultural production

2.1.1 Environmental degradation

China is famously home to 1.4 billion people – nearly 20% of the world's population – but has only 7% of the world's arable land.²² A positive outcome of China's rapid economic development

19 <https://www.nytimes.com/2011/05/27/world/americas/27brazil.html>

20 <https://www.brookings.edu/blog/africa-in-focus/2015/11/05/what-do-we-know-about-the-chinese-land-grab-in-africa/>

21 <https://www.amazon.de/-/en/Deborah-Brautigam/dp/019939685X>

22 China's population is expected to peak later this decade, and slowly decline over the first half of the century in particular. <https://population.un.org/wpp/Download/>

since 1980 has been rising agricultural productivity. However, that productivity is being threatened by pollution, historically poor water resource management and the expansion of crops into areas highly exposed to hazards, such as flooding (predominantly in the south) and drought in northern China.

China's economic gains are built on increasing urbanisation, agricultural intensification, coal combustion, mining and industrialisation, at the expense of ecosystem health and services. Soil and water pollution, soil erosion and loss of ecological diversity (e.g. in pollinators, predator species and soil biota) have the potential to reduce agricultural productivity and present human health risks.²³ Thanks to agricultural and mining activities, a large share of China's soils are now polluted, including in cities (Hu et al., 2021). More recent studies provide estimates ranging from 30% above acceptable pollutant levels for cadmium and mercury (Yang et al., 2018) and 22% for other heavy metals, organochlorides and polycyclic hydrocarbons (Zeng et al., 2019). Herbicides widely applied by Chinese farmers, such as atrazine, have been found to disrupt soil biota (Liu et al., 2020). Soil pollution has the potential to reduce crop yields, is contaminating food and water supplies and posing human health risks (Mishra et al., 2015).

Air pollution has also been linked with reductions in agricultural yield. China has taken rigorous steps to reduce certain types of emissions – fine particulate matter, nitrogen oxide and sulphur dioxide – in the last 10 years (Fan et al., 2020; Zeng et al., 2019). Despite reductions in these pollutants, ozone levels continue to rise (ibid.). Ozone is well known as contributing to crop losses, estimated at yield losses of 3.9–15% for rice, up to 5.5% for maize and 8.5–14% for winter wheat in 2014

(Lin et al., 2018); between 2014 and 2018, wheat yield losses related to increased ozone levels are estimated to have risen to between 20% and 49%, with rice losses anywhere between around 4% and 53%, depending on season and varieties (Zhao et al., 2019).

China's increasing agricultural productivity has partially been achieved through increased application of fertilisers, herbicides and pesticides. While not yet directly linked with declines in agricultural productivity, agricultural pollutants are contaminating surface and groundwater supplies (Huang et al., 2017). This poses risks to human health through contamination of drinking water; nearly 31% of China's rivers and 60% of monitored drinking water wells are classified as severely contaminated by nitrogen and phosphorous pollution from agricultural runoff (Bai et al., 2018). Contamination of water supplies also exacerbates water distribution inequalities; the north has fewer water resources in comparison with the south. Since the 1970s, the expansion of agricultural irrigation and urban growth have contributed to significant declines in many rivers, such as the Yellow and Huai (Wang et al., 2016); rice planting in the Huanghuaihai Plain has exceeded groundwater recharge capacity and contributed to over-exploitation (Li et al., 2021). Pollutants concentrate in diminished water supplies, and can indirectly contribute to decreasing crop yields when those crops are irrigated with contaminated water.

Outbreaks of agricultural and livestock pests are also becoming more common. African swine flu – originally transmitted by ticks to wild and domesticated swine in Africa – spread to China and Europe in 2018 through contaminated pork products (Mason D'Croz et al., 2021). Over the

23 Hu, B., Shao, S., Ni, H., Fu, Z., Huang, M., Chen, Q., & Shi, Z. (2021). Assessment of potentially toxic element pollution in soils and related health risks in 271 cities across China. *Environmental Pollution*, 270, 116196.

last two years, the fever has killed millions of wild and domesticated pigs, impacting meat supply; the disease can currently only be controlled through mass culling. Between 2018 and 2019 some 100 million hogs were lost to African swine fever, representing a quarter of the world's pig population.²⁴ At the peak of the resulting price inflation in February 2020, the price of pork was 135.2% up on the previous year.²⁵

Natural climate variability and climate change are compounding soil, air and water pollution and water overdraft impacts on China's agricultural productivity. The drier North China Plain and north-eastern provinces produce nearly 90% of the nation's wheat and are heavily reliant on irrigation (Li et al., 2016). While rice is grown throughout much of the country, production is dominant in the Yangtze River Basin. The basin, stretching from Shanghai to Tibet, accounts for around 70% of China's rice production.

Increasing temperatures in most seasons since the 1960s, along with expanded use of irrigation, have allowed agricultural expansion into areas of the north once too cold to support certain types of crops (ibid.). At the same time, extreme heat events during the summer growing season have increased throughout much of China,²⁶ particularly since the 1990s (Yu and Zhai, 2020). Extreme heat events in the semi-arid and arid provinces where water supplies are already under significant stress can give rise

to droughts, severely impacting crop yields. Drought conditions in mid-2020 affected some 44.36 million hectares (45%) of Inner Mongolia.

While the north of China faces drought conditions, the south faces flooding. Extreme precipitation events have been increasing in western and southern China since the 1960s, contributing to more flood incidence and greater crop losses in some years since mid-century (Duan et al., 2016). In June 2020 southern China was hit by heavy flooding affecting major rice-producing regions along the middle and lower Yangtze, including Hubei, Anhui, Jiangxi and Jiangsu. Some 13 million acres of cropland were destroyed, affecting more than 5% of China's rice production. To stem rising grain prices, including for rice, soybeans and corn, the authorities released more than 60 million tonnes of rice, 50 million tonnes of corn and over 760,000 tonnes of soybean from national reserves into the domestic market in 2020.²⁷

2.1.2 Labour supply

The average age of front-line agricultural labour in China is around 53, with those over 60 comprising more than 25% of the rural labour force.²⁸ Fewer young people, the educated especially, are choosing farming as a career. Underlying this are dramatic falls in the total fertility rate since the 1970s, elevated education levels and opportunities

24 <https://www.theweek.in/news/world/2020/04/03/as-china-recovers-from-covid-19-african-swine-fever-threatens-its-pig-population.html>

25 <https://www.reuters.com/article/china-economy-trade-agriculture/update-1-chinas-corn-wheat-imports-in-2020-reach-record-highs-idUSL1N2JToUW>

26 The increasing seasonal and temperature extremes are attributed to a combination of both natural climate variability, namely multi-year (ENSO) and multi-decadal (Pacific Decadal Oscillation) processes, and to climate change.

27 <https://edition.cnn.com/2020/08/08/economy/china-food-economy-flooding-intl-hnk/index.html>

28 http://www.xinhuanet.com/english/2019-07/18/c_138236723.htm

in cities leading to higher rates of urbanisation, and a relatively low retirement age (55 for women and 60 for men).

An important reference point for China's development for decades, Japan presents an ominous lens: 'Although job availability in Japan is at its highest in 24 years, the unemployment rate has remained unchanged. On one hand, certain fields are saturated with employees while on the other hand, the rural areas of Hokkaido are in desperate need of agricultural workers. At the same time, the aging population in Japan is an emerging challenge. The flat unemployment rate in conjunction with the rapidly aging farmers' population can possibly reduce the food self-sufficiency rate, raise Japan's dependency for international food products and increase import expenses. Thus, these factors can tip the socio-economic balance of the struggling economy'.²⁹

2.1.3 Consumer demand

Rising consumption of animal products in China over recent decades is another source of stress. For example, it takes 2,400–12,600 litres of water to produce a kilogram of meat, as compared to only 800–1,300 litres for cereals (Liu and Savenije, 2008).³⁰ Such is the challenge of managing sustainable meat consumption in China, and there have been calls for efforts to encourage lower levels of meat and dairy consumption (e.g. He et al., 2016).³¹

To summarise this sub-section, a number of domestic push factors are driving China to

explore new agricultural interests in international markets. These include the reality of compound environmental degradation that will otherwise take years to restore; pressure on incrementally rising rural labour supply; and dietary changes adding to food production-related pressures such as water demand, when this is already under stress.

2.2 Drivers of new overseas investment

A number of contemporary political economy factors are also increasing the appeal for China of investing in new external agricultural markets, the most latent potential in which lies in developing countries.

2.2.1 South–South development and poverty alleviation

In 2021, China announced it had eradicated extreme poverty, meaning that all citizens enjoyed an income of at least 2,300 renminbi (RMB) at 2010 price levels (the specific figure is subject to price level changes). The poorest citizens also enjoy access to basic medical and education services, as well as shelter and clothing.³² This achievement and its scale – some 800 million people escaped poverty over the last four decades in China – has deepened China's resolve to become a leader of the development of the South and supporting equivalent living standards achievements in other developing countries.

In the first instance, investments in rural areas and food production were essential to China's early

29 <https://www.nature.com/articles/s41599-020-00688-4>

30 Liu, J., & Savenije, H. H. (2008). Food consumption patterns and their effect on water requirement in China. *Hydrology and Earth System Sciences*, 12(3), 887–898.

31 He, Y., Yang, X., Xia, J., Zhao, L., & Yang, Y. (2016). Consumption of meat and dairy products in China: a review. *Proceedings of the Nutrition Society*, 75(3), 385–391.

32 http://www.xinhuanet.com/english/2021-02/25/c_139767538.htm

poverty alleviation gains and poverty alleviation gains over time. In the 1980s, moreover, like many of today's poorer countries, China was home to a young population. This meant it faced a trajectory of probable increasing food demand; if food shortages were not addressed they would only have become exaggerated with time. By similarly emphasising investment in agricultural potential in poor countries today, China can both support those countries' economic and living standards gains, while also investing internationally in a medium- and long-term growth industry. At the same time, in the case of some crops, China can also become

an importer of some agricultural products, helping these countries and farmers earn foreign exchange. As Buckley (2013) summarises:

*As the agriculture policy advisor at CAS explained, 'to address global food security, China has little to provide in terms of increased production ourselves, but through our methods we can help others achieve productivity rates like ours. If countries with low productivity can increase their supply, then the entire global food supply will be more secure.'*³³

Table 1 Selected socioeconomic indicators (2019, unless otherwise indicated)

Demographic indicators	China	Kyrgyzstan	Myanmar	Tanzania
Population, total (mn)	1397.72	6.46	54.05	58.01
Population density (people per sq. km of land area) (2018)	148.35	32.97	82.24	63.58
Rural population (% of total population)	39.69	63.41	69.15	65.5
Rural population growth (annual %)	-2.51	1.72	0.23	1.85
Fertility rate, total (births per woman) (2018)	1.69	3.3	2.15	4.89
Population ages 0–14 (% of total population)	17.8	32.5	25.91	43.84
Population ages > 64 (% of total population)	11.47	4.6	6.01	2.62
Economic and human welfare indicators				
GDP per capita, PPP (current international \$)	16784.7	5470.8	5355.3	2770.7
Poverty headcount ratio (national poverty lines) (% population) (2018)	0.6	22.4	24.8	26.4
Undernourishment prevalence (% of population) (2018)	2.5	6.4	14.1	25
Severe food insecurity prevalence (pop'n %) (2017)	1.1	5.1	n.a.	36.9
In recent receipt of food aid (since 2012, WFP)	Yes	Yes	Yes	n.a.

Source: World Bank, World Development Indicators, except fertiliser data (FAO Statistics).

33 Buckley, L. (2013). Chinese agriculture development cooperation in Africa: Narratives and politics. *IDS bulletin*, 44(4), 42–52.

Demographic indicators	China	Kyrgyzstan	Myanmar	Tanzania
Human Development Index Ranking (2020)	85	163	147	120
Agricultural indicators				
Agriculture, forestry and fishing, value added (% of GDP) (2019)	7.11	12.09	21.35	28.74
Employment in agriculture (% of total emp't) (modeled ILO est.) (2020)	24.73	20.38	48.12	64.88
Arable land (hectares per person) (2016)	0.09	0.21	0.21	0.25
Arable land (% of land area)	12.66	6.72	16.7	15.24
Cereal yield (kg per hectare) (2017)	6029	3093.8	3613.7	1543.8
Fertiliser use (mechanisation indicators not available) (Nutrient nitrogen N (total)) (2018)	208.53	18.3	21.55	n.a.

Source: World Bank, World Development Indicators, except fertiliser data (FAO Statistics).

To gauge the latent potential for such investment in the three countries studied here, Table 1 sets out some basic socioeconomic indicators.³⁴ In terms of population structure, Tanzania has the youngest population profile, and the highest total fertility rate – ominously suggesting a significant risk of increasing numbers of undernourished residents into the future, without a significant change in agricultural productivity.

For comparative purposes, China is per capita much richer and has a population age structure that is more skewed towards older population cohorts. Theoretical economic growth potential, in agricultural markets especially, is hence likely to be faster in the target countries than in China. An outbound net foreign investor since 2014, China may seek to tap into that potential, especially in Tanzania, where this could also work as a bridge to broader regional growth. In terms of food security, for China this may be direct – in terms of greater variety of newly productive agriculture frontiers

able to export to China – or indirect, in terms of investor return that can be reinvested in China's own prosperity and security.

2.2.2 Trade-related policies, tensions and the new potential of e-commerce

Although an upper middle-income country only, China offers a set of relatively traditional trade preference arrangements to low-income countries, especially 'Least Developed Countries' (LDCs). In terms of the sample here, Myanmar and Tanzania are both LDCs; Kyrgyzstan is not.

LDC trade preferences include reduced tariffs otherwise applying to some 97% of export lines. China, however, continues to place high tariffs and quotas on staple grains, including rice and corn. Otherwise, LDCs enjoy access to an 'optimized consignment process'. For example, an online data exchange system facilitates the administration process for the consignment of imported goods, and hence this could be a factor in China's choice to

³⁴ To summarise, as the poorest country sampled on a per capita basis, some one in four of the population is undernourished, compared to 14.1% of the population for Myanmar and 6.4% for Kyrgyzstan.

invest in a particular product.^{35 36} The UN, however, reports ‘low usage of preferences for the majority of tariff lines and wide variations in utilization rates among LDCs, with the result that a significant amount of some LDC exports to China are being charged most favoured nation (MFN) tariff rates instead of receiving duty-free treatment’.³⁷

Beyond traditional trade enablers, and also as a new tool for realising them, China is taking a lead role in investing in the wider adoption of e-commerce. Covid-19 and related lockdowns and social distancing have hastened digitisation trends, and the impact of that push may be accelerated over coming years.³⁸ Moreover, China accounts for over 40% of global e-commerce transactions, and in related corporate global valuations Chinese companies account for 70% of the total, and hence, in addition to unlocking latent trade potential, a shift to digital commerce-based trade may advantage Chinese suppliers and consumers.

An example is the World Trade Platform (eWTP), launched in 2016 as an offshoot of China’s e-commerce giant Alibaba. eWTP describes itself as a private sector-led, multi-stakeholder initiative that facilitates public–private dialogue to share

best practices, incubate new trade rules and foster a more integrated and inclusive policy and business environment to promote world trade.³⁹ In practical terms, eWTP hubs facilitate trade by connecting small and medium enterprises (SMEs) to global trade networks via e-commerce platform connectivity, digital trade flow logistics and trade financing, and training. It may also be designed to facilitate the Belt and Road Initiative pillar of realising ‘unimpeded trade’.⁴⁰

Importantly, of eWTP’s six ‘e-hubs’ two are in East Africa, in Ethiopia and Rwanda. Prior to Covid-19 the hubs were nascent and experimental. During the pandemic, however, they have become fundamental to China’s distribution of personal protective equipment around Africa. Moreover, in a signal of how China may foster greater agricultural trade in future, the Rwandan hub was also used to facilitate the export of Rwandan coffee to China during the shutdown of most normal trade routes. Other agricultural products may follow suit over time. A sign of that bigger potential arose in a call between the heads of state of China and Kyrgyzstan in February 2021: Chinese media noted not just agricultural cooperation, but also the potential of e-commerce. E-commerce

35 <https://www.china-briefing.com/news/new-import-measures-in-china-to-benefit-african-southeast-asian-exporters/>

36 Consignees or agents no longer need to submit hard copies of the Certificate of Origin or Declaration of Origin to the GACC, as long as these documents have been submitted through the online system. If the originating goods’ value does not exceed RMB 6,000 (\$872), consignees do not need to present a Certificate of Origin or Declaration of Origin. The new measures also extended the time for beneficiary country’s export goods to arrive in China. If an originating good of a beneficiary country transports through other countries or regions before arriving in China, the maximum duration of staying in the country or district has been extended from 3 months to 6 months.

37 <https://www.un.org/ldcportal/preferential-market-access-chinas-dfqf-scheme-for-ldc-products/>

38 https://www.elibrary.imf.org/view/IMF001/25666-9781484389706/25666-9781484389706/25666-9781484389706_A001.xml?language=en&redirect=true

39 <https://www.ewtp.org/>

40 It should be noted that when President Xi launched the flagship Belt and Road Initiative in 2013, with an initial speech in Kazakhstan, neighbour to Kyrgyzstan, he spoke of five areas of cooperation he hoped would be deepened via a ‘Silk Road Economic Belt’ – one was ‘unimpeded trade’.

platforms also came up in the context of facilitation of Tanzanian exports to China during Chinese Foreign Minister Wang Yi's visit to Tanzania in January 2021.

2.2.3 Trade tensions

China became a net importer of grain in 2003, with the US, Australia and Brazil having become major grain suppliers since. Recent trade tensions with the US and Australia especially have therefore rattled those responsible for guaranteeing food supply in China. Trade barriers imposed as part of a trade war with the US launched under former US President Donald Trump have, moreover, remained in place despite the change in administration. Soybeans, barley and wheat, among other agricultural produce, have all been affected. China has since embarked on discussions with countries including Tanzania with the aim of diversifying soybean import sources, as an example.

Equivalently, China's newly expanded seed bank, announced in January 2021, is likely intended to help in the search for new crop varieties and so support broader food security efforts. But it may also be a way for China to challenge West-centric global agricultural capital markets.⁴¹ At present fewer than 10 mostly Western corporations own nearly three-quarters of commonly used seed varieties, and hence are able to determine prices, varieties and growth conditions in global agricultural markets.⁴² China on the one hand

seeks to expand the adoption of its seed varieties in third markets, but those countries also value seed independence.

To summarise this sub-section, China's contemporary economic development progress has both placed it in a position to be able to more actively support the development of other developing countries; and at the same time has increased tensions with today's high-income countries. Rising living standards are meantime fostering increased demand for new agricultural products, while technology gains are unlocking new pathways to foster global trade and development. Alongside, youth-filled developing countries elsewhere facing food-related challenges today are likely to face aggravated food constraints tomorrow without a shift in agricultural productivity. For China, this combination may catalyse a newly scaled and/or accelerated push into frontier developing country agricultural potential.

In that larger contemporary context, the following section looks at country case studies for Kyrgyzstan, Myanmar and Tanzania. For each country, the following is outlined: 1) Introduction to the agricultural sector; 2) Survey of issues in contemporary bilateral political economy, including an overview of aid, trade and investment, with a particular focus on agriculture; 3) Areas of opportunity to expand bilateral agricultural ties; 4) Barriers and risks to expanding agricultural ties; and 5) Recommendations.

41 <https://www.sciencedirect.com/science/article/abs/pii/S1043951X18301688>; <https://economictimes.indiatimes.com/news/international/world-news/china-builds-worlds-largest-seed-bank-to-boost-food-security/articleshow/80133746.cms?>; see also: Gaudreau, M. (2019). State food security and people's food sovereignty: competing visions of agriculture in China. *Canadian Journal of Development Studies/Revue canadienne d'études du développement*, 40(1), 12-28.

42 <http://seedcontrol.eu/seed-stories.php>

3 Country case study: Kyrgyzstan

Kyrgyzstan is a contiguous neighbour of China, but the border region is not densely populated or close to major economic clusters in either country. Moreover, political instability in Kyrgyzstan appears to inhibit longer-term policy and investment stability, and hence economic progress. China has nonetheless expressed interest in supporting Kyrgyzstan's development and fostering bilateral economic relations, including by increasing Chinese imports. From China's lens the scale of that potential, though possibly significant for rural Kyrgyzstan, farmers of selective crops and products especially, is small for China overall. Compared to many other countries with which China engages in agricultural trade there is limited arable land in Kyrgyzstan and also a small labour pool to draw upon. China's increased interest in increasing the economic integration of its western regions, e-commerce platforms, together with a few niche areas of agricultural potential in Kyrgyzstan such as cherries (that China otherwise imports presently from Australia) may yet, however, help to newly forge deeper agricultural ties, in spite of all the general circumstances and trends outlined here.

3.1 The agriculture sector

The Kyrgyz government views agriculture as a priority sector for the country's economic development – nearly two-thirds of the population live in rural areas (Table 1). Overall, the agriculture

sector employs 20% of the country's workforce and accounts for 12% of GDP.⁴³ The proportion of the population employed in the sector has, however, declined rapidly since 2015, when agricultural employment stood at 30%.⁴⁴

Nearly half of Kyrgyzstan is pastureland – some 9 million hectares – and herding plays a key role in the country's economy, society and culture. Most agriculture is family-based, on small plots of land. Of the country's 384,000 farms, about 50% are subsistence-based, only selling surplus production.⁴⁵ About 22.7% sell their produce directly on the market and 21.7% of farms supply their products for further processing.⁴⁶ Larger-scale production includes apples, apricots, cherries, sugar beets, beans, cotton, tobacco and walnuts. Exports of agricultural produce amounted to about \$157.6 million in 2019.⁴⁷

One constraint on agriculture is limited arable land. Kyrgyzstan has just 1.3 million hectares of arable land, most of which is, like 90% of the country, more than 1,000 metres above sea level (40% of the country is 3,000 metres above sea level). Due to stark geographic and climatic differences (highlands, lowlands, water availability, temperature) production and farm structures (size) are confined to particular localities: sugar beets in the province of Chui; Issyk-Kul is known for fruits such as apples and pears; and Batken for

43 <https://www.statista.com/statistics/528617/employment-by-economic-sector-in-kyrgyz-republic/>, <https://www.statista.com/statistics/528614/share-of-economic-sectors-in-the-gdp-in-kyrgyz-republic/>

44 <https://www.statista.com/statistics/528617/employment-by-economic-sector-in-kyrgyz-republic/>

45 https://www.researchgate.net/publication/334717014_Perspektivy_razvitiya_selskogo_hozajstva_Kyrgyzskoj_Respubliki

46 https://www.researchgate.net/publication/334717014_Perspektivy_razvitiya_selskogo_hozajstva_Kyrgyzskoj_Respubliki

47 <https://www.trade.gov/country-commercial-guides/kyrgyz-republic>

its (dried) apricots. Osh and Jalal-Abad are major producers of cotton and walnuts; Naryn oblast is primarily engaged in livestock farming; Talass exports kidney and soybeans.

The level of mechanisation is very low, and output has still not returned to Soviet-era levels. Every year, for various reasons, 70–80,000 hectares remain uncultivated, meaning that this is farmland with potential for cultivation.⁴⁸ A major unresolved problem is the storage and processing of agricultural products, mainly due to lack of funds. Kyrgyzstan's accession to the Eurasian Economic Union theoretically opened up opportunities for agricultural exports, but they remain under-utilised.⁴⁹ There is no well-organised, efficient state or private procurement of agricultural products, and no export system.⁵⁰ While since the early 1990s international donors have provided substantial assistance to the agriculture sector, export markets remain weakly developed due to process inefficiencies, regional trade barriers and packaging deficiencies, which limit the time produce can spend in transit.⁵¹ Many dairy, meat and fruit and vegetable producers are currently unable to meet sanitary and phytosanitary (SPS) standards necessary for export.

3.2 Political and economic links

China and Kyrgyzstan established diplomatic relations in 1992. Despite Kyrgyzstan's economic dependence on China, and the fact that the two countries share a 1,063km border, ties are at best sporadically good and often tense. For example, the political turbulence that followed elections in Kyrgyzstan in October 2020 included targeting of Chinese businesses, threats against Chinese executives in Bishkek and the reported burning of the Chinese flag.⁵²

President Xi Jinping visited the country in 2020, the first Chinese head of state to do so for two decades (Box 2). Most recently, in February 2021, amid continued Covid-19-related uncertainties, which have also led to the closure of much of the two countries' border trade,⁵³ Xi and Kyrgyzstan's President, Sadyr Zhaparov, spoke by phone. It was reported that the two discussed deeper cooperation on trade, digital connectivity and agriculture.⁵⁴

The institutional frameworks that typically underpin bilateral economic exchange are relatively limited between China and Kyrgyzstan (Table 2). The two sides agreed a framework agreement on cooperation in bilateral economic and technical assistance projects, signed on 26 March 2015; a 'Joint Declaration on a Comprehensive Strategic Partnership', on 6 June 2018; and a 'Joint Declaration on Further Deepening the Comprehensive Strategic Partnership', on 13 June 2019.

48 https://www.researchgate.net/publication/334717014_Perspektivy_razvitiya_selskogo_hozajstva_Kyrgyzskoj_Respubliki

49 Ibid.

50 Ibid.

51 <https://www.trade.gov/country-commercial-guides/kyrgyz-republic>

52 <https://eurasianet.org/china-business-briefing-not-happy-with-kyrgyzstan>

53 <https://eurasianet.org/china-business-briefing-not-happy-with-kyrgyzstan>

54 https://triviumchina.com/2021/02/24/another-feather-in-the-cap/?utm_source=rss&utm_medium=rss&utm_campaign=another-feather-in-the-cap

Box 2 Recent high-level visits between China and Kyrgyzstan

Xi Jinping's first official visit of 2020 was to Kyrgyzstan, the first CPC General Secretary to visit since 2001.

Other recent meetings involving top-level political leaders:

1. 16 May, 2017: President Almazbek Atambayev meets Xi Jinping in Beijing
2. June 6, 2018: President Sooronbay Jeenbekov meets Xi Jinping in Beijing. Agreement to establish a comprehensive strategic partnership
3. Feb 21, 2019: Kyrgyz Foreign Minister Chyngyz Aidarbekov meets State Councillor and Foreign Minister Wang Yi in Beijing
4. April 28, 2019: Kyrgyz President Sooronbay Jeenbekov meets Xi Jinping in Beijing in the context of the 2nd BRI Forum
5. May 21, 2019: State Councillor and Foreign Minister Wang Yi meets Kyrgyz Foreign Minister Chyngyz Aidarbekov in Bishkek
6. June 12-13, 2019: Xi Jinping visits Kyrgyzstan for the SCO Summit
7. April 14, 2020: Phone call between Xi Jinping and President Sooronbay Jeenbekov, China promises Covid-19 assistance to Kyrgyzstan
8. February 22, 2021: Phone call between Xi Jinping and President Sadyr Zhaparov

Table 2 Bilateral economic agreements between China and Kyrgyzstan

Agreement type	Status
Bilateral Investment Treaty	No.
Currency Swap Agreement	People's Bank of China Governor signed an agreement of intent to strengthen cooperation with the Central Bank of Kyrgyzstan to promote cooperation between the two central banks in local currency settlement and currency swaps (Sept 2015). ⁵⁵
Double Taxation Agreement	Signed on 24/06/02. Applicable since 01/01/04.
LDC Trade Preferences	Not qualified.
Phytosanitary Agreement	Under discussion.

55 <http://www.ljzfin.com/news/info/23998.html>.

An additional element to relations between China and Kyrgyzstan is that Kyrgyzstan is heavily indebted to China. Kyrgyzstan reportedly owes up to half its national foreign debt to China. In 2020 the Kyrgyz economy contracted by 8.6%, putting pressure on public finances and giving rise to repayment issues.^{56 57}

In the 2000s Kyrgyzstan used gold as collateral for Chinese investment in building infrastructure to connect the country with the Chinese border. There have been problems with the running of the related gold mine, and with many other projects since.⁵⁸ Debt sustainability is an issue in bilateral relations, making the need to increase exports to China all the more important. In terms of investment overall, according to Kyrgyz statistics Chinese direct investment amounted to \$301 million in 2019. The figure from the Chinese Ministry of Commerce was \$216 million.⁵⁹

Table 3 shows that Chinese financial flows in agriculture and food to Central Asia for 2019 amounted to \$1.45 billion, of which Kyrgyzstan received \$31.55 million – just over 2%. While the figures for Kazakhstan and Tajikistan are significantly higher than Kyrgyzstan's, they refer to foreign direct investment (FDI); the \$31.55 million for Kyrgyzstan can be attributed to a single Chinese foreign aid grant for an irrigation reconstruction project.⁶⁰ Agreed in 2016, the project involves the reconstruction and construction of water management facilities in Issyk-Kul, Batken, Talas and Chui Oblasts, as well as skills training.⁶¹ The Kyrgyz government expects the project to result in 5,410 hectares of newly irrigated land, increased water supply for an area of 22,100 hectares and the creation of 40,000 new jobs across the country.⁶² Construction, which has been slow, is being implemented by the state-owned enterprise China Railway No. 5 Engineering Group Co., Ltd. Chinese implementation partners have blamed delays on Kyrgyz law requiring a quota of local workers: due to the workers' lack of experience and the language barrier parts of the project failed to meet the required technical and quality standards.⁶³

56 <https://www.rferl.org/a/how-will-kyrgyzstan-repay-its-huge-debts-to-china-/31124848.html>

57 <https://www.reuters.com/article/us-health-coronavirus-kyrgyzstan-china-idUSKCN22BoOG>

58 <https://www.thethirdpole.net/en/pollution/gold-mining-at-heart-of-recent-kyrgyz-political-turmoil/>

59 <http://www.mofcom.gov.cn/dl/gbdqzn/upload/jierjisi.pdf>

60 Aminjonov, Farkhod, Alina Abylkasymova, Anna Aimée, Bahtiyor Eshchanov, Daniyar Moldokanov, Indra Overland, und Roman Vakulchuk. 2019b. „BRI in Central Asia: Agriculture and Food Projects“. Central Asia Regional Data Review, Nr. 26: 1–9, <https://nupi.brage.unit.no/nupi-xmlui/handle/11250/2605062>.

61 <http://en.kabar.kg/news/kyrgyzstan-launches-project-on-reconstruction-of-irrigation-system/>
http://en.ccpit.org/info/info_4028811758d70820015c47b9bc6800cb.html

62 Aminjonov et al., 2019b: 7.

63 孙玉彦, “浅谈我国援助吉尔吉斯斯坦项目的风险管控问题——以吉尔吉斯斯坦灌溉系统改造项目为例”, 中国工程咨询 (Chinese Engineering Consulting) 2019,(03),84-87

Table 3 Total investment of Chinese projects in Central Asia (\$m)

	Total by country	Rail and road connectivity	Energy connectivity	Industry	Agriculture and Food	Mineral and petroleum exploration and processing	Finance and IT	People-to-people projects
<i>Total by sector</i>	136,251	23,500	35,694	12,300	1,452	55,160	8,100	47
Kazakstan	90,862	14,539	18,850	10,546	1,050	37,779	8,100	NA
Turkmenistan	24,842	1,403	9,410	NA	NA	1,403	NA	NA
Tajikistan	10,519	4,516	4,516	680	342	465	NA	NA
Kyrgyzstan	5,392	1,772	2,713	151	32	677	NA	46
Uzbekistan	4,638	1,269	205	923	29	2,209	NA	NA

Source: Aminjonov et al., (2019)

In 2015, the Kyrgyz State Technical University and Xinjiang Agricultural Academy agreed on the establishment of a joint Chinese-Kyrgyz scientific and information centre.⁶⁴ The purpose of the centre is to conduct joint scientific research in the field of agriculture. The Xinjiang Agricultural Academy financed the project.⁶⁵

So far, there are few Chinese agricultural enterprises in Kyrgyzstan. Those engaged in agriculture and agricultural products processing in Kyrgyzstan tend to be SMEs, with investment and cooperation in various industries such as chicken farming, vegetable cultivation, flour processing, veterinary medicine production and agricultural machinery services.⁶⁶

The director of the Chinese National Quality Inspection Administration, Zhi Shuping, visited Kyrgyzstan in 2017, and agreed the construction of the agro-industrial park Asia Star (Искра Азия/亚洲之星农业产业合作区) in Chui region, near Bishkek. The contracting partner on the Chinese side is the Guigou Group 贵友集团 from Henan province.⁶⁷ Both the company and the Kyrgyz government regard the project as part of the BRI, with respect to which a bilateral Memorandum of Understanding (MoU) has been agreed.

The Chinese Ministry of Commerce has designated Asia Star as an Overseas Economic and Trade Cooperation Zone (境外经济贸易合作区).⁶⁸ Within that it is classified as a

⁶⁴ Aminjonov et al., 2019b: 7.

⁶⁵ 穆晓路, 阿尔玛耶夫, 张彩虹, “中国与吉尔吉斯斯坦设施农业合作前景浅析”, in: 新疆农机化 (Xinjiang Agricultural Mechanization), 2018 (03): 35-37. The Xinjiang Agricultural Academy also sees potential in cooperation on Solar Greenhouses. The Institute of Agricultural Mechanization of the Xinjiang Academy of Agricultural Sciences reports that it has been frequently contacted by Kyrgyz companies on the issue of the introduction of solar greenhouses.

⁶⁶ 穆晓路, 阿尔玛耶夫, 张彩虹, “中国与吉尔吉斯斯坦设施农业合作前景浅析”, in: 新疆农机化 (Xinjiang Agricultural Mechanization), 2018 (03): 35-37.

⁶⁷ <http://www.asiasatar.com/index.php/wap/aboutus.html>

⁶⁸ <http://www.mofcom.gov.cn/dl/gbdqzn/upload/jierjisi.pdf>

‘demonstration zone’, meaning it includes various types of technology and industry parks and free trade zones with an emphasis on multiple Chinese businesses working together to form industry clusters and/or chains of industry: seeds, machinery, farming, marketing, processing and sales.⁶⁹ The park is to operate in areas such as meat processing, beef cows and horses, fish farming and bee-keeping, alongside other agricultural areas. All products produced in the agro-industrial park will be exported to China. The initial Chinese investment is calculated at \$250 million and should create 5,000 jobs. The first stage of construction will result in annual production capacity as follows:

1. Slaughtering capacity of 200,000 cattle and 2 million small ruminants.
2. Halal fast-frozen food project with a production capacity of 50,000 tonnes.
3. Halal meat products production project, with a volume of 50,000 tonnes.
4. Wheat processing project, processing volume of 200,000 tonnes.
5. Finished Flour Products Project with a volume of 100,000 tonnes.
6. A fodder production project of 300,000 tonnes.⁷⁰

The Kyrgyz government hopes that the zone will create 30,000 new jobs and attract new investment of up to \$1 billion.⁷¹

Ahead of the June 2019 Shanghai Cooperation Organisation summit, the Kyrgyz International Business Council organised the Kyrgyz–Chinese

Business Forum, at which cooperation agreements worth a total of \$7.5 billion were signed, including in food and agriculture.⁷² The Chinese business delegation was organised by the Silk Road International Capacity Cooperation Promotion Center of the National Development and Reform Commission (NDRC),⁷³ which shows that the Chinese side understood the agreements as part of BRI promotion efforts. The cooperation agreements included:

- A framework agreement with companies from the relatively economically-advanced Chinese province of Jiangsu (following an open call) on constructing a joint agro-industrial complex.
- Memorandum of cooperation between the Kyrgyz Investment Promotion and Protection Agency and the Ruyi Agricultural Products Trading, Production and Logistics Co (如意农产品贸易、生产物流有限公司) to construct an agro-industrial complex (\$35 million). It is not known if the intent is to produce for export or domestic consumption, or both. This memorandum details the construction plans.
- Agreement between the Ministry of Agro-Food Industry and Land Reclamation of Kyrgyzstan and the private fertiliser company Hebei Baidoujia (河北百斗嘉肥料有限公司) to build a modern agricultural park demonstration zone (\$260 million); in 2017, Baidoujia and the Kyrgyz government signed an MoU on a Build-Operate-Transfer (BOT) project to build a fertiliser factory in Nookat district of Osh Region.⁷⁴ Hebei Baidoujia is a medium-

69 <https://www.farmlandgrab.org/post/view/28137-china-adjusts-go-global-agriculture-program>

70 <http://ru.siluxgc.com/html/R1413/201707/1031466749910.shtml>

71 <https://knews.kg/2017/07/07/stroitelstvo-agropromyshlennogo-parka-iskra-aziya-sozdast-do-30-tys-novyh-rabochih-mest/>

72 https://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1671181.shtml

73 http://photo.china.com.cn/2019-06/03/content_74850672.htm.

74 <http://ru.siluxgc.com/html/R1413/201711/29667224310757.shtml>

sized private enterprise founded in 2012 in the Chinese province of Hebei. The company website lists Kyrgyzstan as its only foreign investment. It is hoping to use Kyrgyzstan to expand to other Central Asian countries.⁷⁵

- Agreement between the Ministry of Agro-Food Industry and Land Reclamation of Kyrgyzstan and the Central Asia International Development Company on cooperation in agriculture (\$150 million).⁷⁶
- Cooperation framework agreement between the Kyrgyz Investment Promotion and Protection Agency and the Henan province-based Zhongyuan International Trade Group (原国际贸易集团) on the introduction of blockchain technology in agricultural trade in Central Asia. According to Kyrgyz sources, the Chinese side agreed to invest \$50 million (the figure could not be confirmed through Chinese sources or the company website).⁷⁷
- Creation of a \$40 million logistics centre.
- There are also plans to build a \$60 million dairy plant in Suzak district in southern Kyrgyzstan.⁷⁸

The Covid-19 pandemic slowed the implementation of these agreements. According to the Chinese Ministry of Commerce, from December 2020 the number of Chinese companies conducting business in Kyrgyzstan dropped drastically over the most recent year: at end-January 2019 some 2,590 Chinese enterprises (including legal representatives, branches and representative offices) were registered in Kyrgyzstan. By December 2020 only 580 were still registered as in operation. Main areas of business are manufacturing, wholesale and retail and vocational science and technology. As of

75 <http://www.bdjia.com/about.php?tid=220>

76 <https://kloop.kg/blog/2019/06/16/kitaj-i-kyrgyzstan-podpisali-soglasheniya-na-7-5-mlrd-rasskazyvaem-kuda-pojdut-investitsii>, <https://ru.sputnik.kg/economy/20190614/1044688365/china-kr-soglasheniya-biznes-7-mlrd-dollar.html>

77 <https://www.timesca.com/index.php/news/26-opinion-head/21277-kyrgyzstan-china-win-win-cooperation-enters-a-new-stage>.

78 <https://www.timesca.com/index.php/news/26-opinion-head/21277-kyrgyzstan-china-win-win-cooperation-enters-a-new-stage>

December 2020, around 20,000 Chinese lived and worked in Kyrgyzstan, most of them seasonal workers engaged in trade, service industries like catering, mining, and construction.⁷⁹

As with many developing countries, China is fundamental as a source of imports for

Kyrgyzstan – in 2018 imports from China comprised more than a third of total imports. By contrast, despite the two countries' proximity, Kyrgyz exports to China are minimal as a share of overall trade – at just over 3% in 2018. The balance of trade that year was a deficit approaching \$2 billion.

Figure 2 Kyrgyz exports by country (2018)



Source: World Integrated Trade Solutions

According to a recent World Bank study, products with the most export potential for Kyrgyzstan to China include cherries, walnuts, milk, fresh apricots and plums (fresh and dried).⁸⁰ According to the ITC, the export potential of fresh apricots, cherries and plums was estimated at \$17.1 million annually, but only 21% of this potential had been realised as of 2018.⁸¹

Kyrgyz agricultural exports to China are concentrated on livestock products (live donkeys, salt-wet cowhide, skimmed wool, honey and

fodder products) and horticulture products, mainly dried apricots and shelled walnuts. In 2019 year-on-year agricultural export growth was 23.7%, against overall growth in agricultural exports of 32.4%, to reach \$54 million.⁸² Both sides would like to see increased agricultural exports from Kyrgyzstan to China. Ahead of the June 2019 Shanghai Cooperation Organisation summit, Xi stated explicitly that China 'stands ready to buy more quality agricultural produce from Kyrgyzstan'.⁸³ In 2020, 13 companies received certifications to export milk powder and cheese,

79 <http://www.mofcom.gov.cn/dl/gbdqzn/upload/jierjisi.pdf>

80 <https://openknowledge.worldbank.org/bitstream/handle/10986/33115/Final-Report.pdf?sequence=1&isAllowed=y>

81 <https://openknowledge.worldbank.org/bitstream/handle/10986/33115/Final-Report.pdf?sequence=1&isAllowed=y>

82 <https://economist.kg/2020/02/07/kyrgyzstan-na-chetvert-velichil-postavki-selhozprodukcii-v-kitaj-prezident>

83 https://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1671181.shtml

with a related programme covering the years 2019–2022.⁸⁴ Kyrgyzstan also hopes to become a regional hub for processing of agricultural products and raw materials, and there have been negotiations with Kazakhstan, Russia, Mongolia, Belarus and Ukraine to import cheap cattle for processing and export to China (and to Gulf markets, including up to 40 tonnes a week to the UAE). In January 2021, Minister of Agriculture Tilek Toktogaziev announced a goal of exporting up to 60 tonnes of meat to China daily.⁸⁵ Kyrgyzstan is also keen to further develop its own animal breeding potential, but this requires improvements in food security and the development of agricultural technology.

In May 2015, Kyrgyzstan and China signed an export protocol for cherry exports to China, which aimed to ensure that Kyrgyz cherry exports meet Chinese phytosanitary requirements. After a test batch of 2.7 tonnes was shipped to China in 2015, exports have been consistently growing. By July 2018, 14 cherry producers had concluded deals with Chinese partners for the export of cherries into China, most of them located in the Batken region. During 2018, Kyrgyzstan exported a total of 68.7 tonnes of cherries valued at \$217,800 (Russia is the main export market with 79.1%, followed by Kazakhstan with 13.3% as of 2019).⁸⁶

According to the World Bank, Chinese buyers find orchards in Kyrgyzstan themselves, check them for compliance with their quality requirements, and sign contracts directly with local farmers. The main suppliers of cherries to China are large orchards, which usually sell cherries they produce

themselves. Only cherries that pass inspection by the Chinese counterparts are allowed for export. Companies buying cherries for import into China are usually SMEs with a small local market share. According to Chinese legislation, imports can only be by a Chinese enterprise, and local producers are not involved in customs clearance or the transportation of goods exported to China. As a rule, exported goods are procured directly from farms or storage areas or are delivered to the border. Most cherries are transported from Bishkek to China via air freight. Major destination cities include Urumqi (on China's western border) and Shanghai. On 14 June 2019, the first ground shipment of cherries from Bishkek arrived in Urumqi.⁸⁷

According to Chinese sources, small-scale Chinese traders buy cherries from Kyrgyzstan at an average price of 250 som/kg (about 25 RMB/kg), import them into China and sell them on the market at 1,500 som/kg (about 150 RMB/kg), earning a large profit.⁸⁸ Comtrade reports that Kyrgyzstan exported 68,703 kg of cherries in 2019, worth some \$219,000, a year-on-year increase of 73.3% in weight and 45.6% in value. The price Kyrgyz cherries receive on the Chinese market is lower than those offered by other main suppliers of cherries, but still higher than those offered by Russia and Kazakhstan, even after taking into account transportation costs.⁸⁹ A dispute over cherries between China and Australia may bode well for continued growth in the cherry trade with China.⁹⁰ However, Kyrgyz exports may face strong competition from Uzbekistan and Tajikistan, which also plan to export fruits such as cherries

84 <https://ru.sputnik.kg/economy/20200113/1046755849/ehksport-syr-china-kr.html>

85 https://kaktus.media/doc/429736_kyrgyzstan_nameren_eksportirovat_v_kitay_60_tonn_miasa_ejednevno.htm

86 <https://openknowledge.worldbank.org/bitstream/handle/10986/33115/Final-Report.pdf?sequence=1&isAllowed=y>

87 <https://openknowledge.worldbank.org/bitstream/handle/10986/33115/Final-Report.pdf?sequence=1&isAllowed=y>

88 吉尔吉斯斯坦樱桃集中上市 该国农业部“看多”水果对华出口, 烟台果树, 2017 (03): 52-53.

89 <https://openknowledge.worldbank.org/bitstream/handle/10986/33115/Final-Report.pdf?sequence=1&isAllowed=y>

90 <https://www.9news.com.au/national/china-trade-dispute-cherry-exporters-targeted/9f734bf9-ba2f-4259-bceo-758ff0913cc3>

to China, and may offer better quality standards and infrastructure. Chinese official statements indicate that China is willing to import more Kyrgyz agricultural products to meet the needs of the Chinese market.⁹¹

3.3 Opportunities

Despite being a difficult investment environment, there are areas where Kyrgyzstan could engage China more effectively in its agricultural development. The following three product areas appear particularly promising, alongside the nascent potential of Kyrgyzstan's e-commerce sector.

Milk powder: Kyrgyzstan produces over 1.6 million tonnes of milk annually, but processes only 2.5%.⁹² While foreign investors cannot own farmland, joint ventures with local partners who own land could lower production costs and guarantee a consistent supply of raw milk. Following scandals related to the adulteration of milk and infant formula, consumers in China do not trust domestic product and imported milk powder in particular is in huge demand.

Organic produce: Changing consumer preferences in China have reportedly contributed to a rise in demand for organic produce, though detailed figures are hard to find. In the meantime, China is increasing imports of fruits and vegetables faster than any other country in the world.⁹³ As noted, packaging deficiencies make transport of produce problematic; Chinese companies could step in here to facilitate the export of organic produce to China.

Food processing: Kyrgyzstan's food processing industry remains underdeveloped. Local companies often lack sophisticated management skills and productive equipment, and many of them operate at only 20–40% of capacity. There is a demand for various types of food-processing equipment, including production lines for juice, ketchup, dried vegetables and fruits, potato chips, pasta products, meat products and packaging. Local firms have limited financial resources and therefore prefer to purchase semi- and non-automated equipment. If the investment agreements signed in 2019 are implemented, this may help to resolve some of these challenges and help encourage Chinese companies to further invest to produce new product ranges, and also in upgrading packaging or to improve current product line quality via production, processing and marketing capacity-building.

E-commerce: According to the World Bank (2019): 'In the Kyrgyz Republic, internet penetration is estimated to be only 34 percent with 20 percent of the population considered to be regular users. Severe impediments to the Kyrgyz e-commerce sector for agricultural goods include (i) consumer preference for the traditional way of grocery shopping, (ii) a perception that items purchased online are of lesser quality, (iii) the inability to negotiate prices online, and (iv) concern that recourse might be complicated in the event of a bad e-commerce purchase. Nevertheless, Kyrgyzstan has a host of meal and food delivery players. B2B seller Prodsklad provides wholesale delivery of agricultural products to businesses, hotels, restaurants, cafes and supermarkets throughout

91 E.g. http://www.xinhuanet.com/english/2020-08/20/c_139305925.htm; http://www.xinhuanet.com/english/2019-06/13/c_138141034.htm

92 <https://www.trade.gov/country-commercial-guides/kyrgyz-republic>

93 <https://east-fruit.com/en/news/china-is-increasing-imports-of-fruits-and-vegetables-faster-than-any-other-country-in-the-world/>

the country. The Kyrgyz customer-facing grocery delivery industry already has several players including aMart.kz, alliance.kg, zakuponline.kg and bishtao.kg. The meal delivery service also features multiple players including eda.kg and NambaFood.kg'. The nascent but growing e-commerce food-related sector in Kyrgyzstan could be tapped to expand food-product exports, providing a much more targeted export opportunity than today's mostly border-related trade.

3.4 Barriers and risks

Inspection and quarantine: The absence of a bilateral agreement on inspection and quarantine and mutual recognition of commercial inspection certificates is a major barrier to increased agricultural links between China and Kyrgyzstan.⁹⁴ As noted above, although the two sides agreed an MoU on Cooperation in the Field of Conformity in 2018, no progress on implementation has been made, mainly due to delays on the Kyrgyz side.

Climate change: The economy is particularly vulnerable to climate change: as the temperature rises, Kyrgyzstan's glaciers are expected to melt unsustainably, with important implications for its agriculture and energy sectors. Agriculture employs 31.7% of the country's workforce and depends on water from seasonal glacier run-off,

and hydroelectric power plants generate 87% of the country's electricity.

Quality of produce and infrastructure:

According to the Kyrgyz Greenhouse Association, the country's agricultural sector is not ready for the production of standardised agricultural products in large quantities, and first needs to raise quality standards and improve certification methods and technical specifications. Other Kyrgyz agricultural experts have argued that Kyrgyzstan needs to adopt state-of-the-art agricultural methods before it can export to Chinese markets, and that current production does not meet Chinese market entry requirements.⁹⁵

Governance and politics: Political instability is a significant barrier, as is corruption among government officials. Chinese investors tend to favour more stable administrative and legal environments. There is also widespread anti-Chinese sentiment, and Chinese enterprises and individual businesspeople are frequently attacked. In August 2016, the Chinese Embassy was targeted by a car bomb. In 2018 and 2019 more than 20 Chinese nationals were killed in Kyrgyzstan. Finally, there are perceived cultural and religious differences between Chinese and local workers, potentially leading to conflict.

⁹⁴ <http://www.mofcom.gov.cn/dl/gbdqzn/upload/jierjisi.pdf>

⁹⁵ https://rus.azattyk.org/a/kyrgyzstan_china_agro_politics/29999947.html

4 Country case study: Myanmar

Myanmar is a contiguous neighbour of China as is Kyrgyzstan, but it is far more strategically important for China. It is also far more bilaterally economically integrated. Despite that importance and intensity, border relations are fraught by informality and sporadic shifts in political decision-making in China (and neighbouring Yunnan province in particular), and by the fact that Myanmar is prone to political volatility. If the potential spillovers of China's infrastructure investments in Myanmar are also captured for sustained agricultural productivity growth, there is potential to further deepen agricultural ties between the two countries, generating greater foreign exchange and increasing rural incomes in Myanmar especially. Myanmar's relative political dependence on China and weak institutions, however, risk capture of that and other vast agricultural potential. There are also parallel risks of over-exploitation, in terms of rising use of agro-chemicals and the weak bargaining power of Myanmar's farmers and border traders.

4.1 The agriculture sector

Agriculture is the backbone of Myanmar's economy and employment, comprising around a third of GDP and employing two-thirds of the labour market. Farming remains relatively traditional, comprised heavily of smallholder farms of around 1 to 5 hectares with low productivity. Nationally, crop production is more important than livestock or fishing. The main crops are rice, sugar cane, pulses and vegetables. In Shan State

in the east bordering China, agriculture mostly involves cultivation of rain-fed tree crops and horticulture products, along with rice, maize and pulses.

Agriculture is highly labour-intensive, and there are longstanding issues around low productivity, weak infrastructure and limited access to finance.⁹⁶ Rice is the most important crop, responsible for more than half of total production value.⁹⁷ Agriculture accounts for 25–30% of the country's export earnings.⁹⁸ The largest export crops are beans and pulses, which comprised 30.5% of national agri-food exports in 2014–2018 as estimated by researchers at the International Food Policy Research Institute. Other major export crops include rice (12.5%), rubber (6.9%) and maize (5.0%).⁹⁹

Agriculture's significance in the national economy has made it an important area to watch in national development strategy over the past decade. The *Myanmar Agriculture Development Strategy and Investment Plan (2018/19–2022/23)*, issued in 2018 by the Ministry of Agriculture, Livestock and Irrigation (MOALI), built upon a mosaic of existing sub-sectoral plans to offer a holistic vision for the sector's development focused on the 'strategic pillars' of productivity, governance and competitiveness.¹⁰⁰ Its core quantitative targets include a number of goals related to trade and foreign investment: strengthening agricultural trade competitiveness by increasing annual investment in the agri-food sector (\$530 million) and the value of agricultural exports

96 www.eurocham-myanmar.org/uploads/d3b45-989bb-agriculture-2019-draft-5-page.pdf

97 www.eurocham-myanmar.org/uploads/d3b45-989bb-agriculture-2019-draft-5-page.pdf

98 www.fao.org/myanmar/fao-in-myanmar/myanmar/en/

99 <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/134185/filename/134396.pdf>

100 <http://extwprlegs1.fao.org/docs/pdf/mya180003.pdf>, p. 35.

(\$2,000 million) by 40% each, as well as driving up the value-added share of agricultural GDP from 50% to 80%.¹⁰¹ It also highlighted among its sectoral strengths the country's 'strategic location for exports to China, India, and ASEAN [The Association of Southeast Asian Nations]'.¹⁰²

Myanmar's economic liberalisation from 2011 onwards sparked a rapid transformation in the sector as part of a broader surge in economic growth that turned it into one of Asia's fastest growing economies during the 2010s.¹⁰³ High levels of out-migration from rural communities to urban industrial and service sector jobs has encouraged rapid mechanisation in major rice production hubs like the Irrawaddy delta, fuelled by Chinese and Thai machinery imports, a growing network of private suppliers and bank-supported hire-purchase offerings.¹⁰⁴ Nonetheless, as the MOALI's sectoral development plan states, sectoral growth remains constrained overall by a complex array of economic and institutional challenges, from low productivity and value-added shares to financing constraints and the lack of timely access to and quality of inputs.¹⁰⁵

Looking forward, the twin shocks of Covid-19 and, more significantly, the coup of February 2021 have severely clouded the sector's growth prospects. A United Nations Development Program (UNDP) report in April 2021 estimated an 8.4% drop in agricultural production from Covid-19 based upon

2020 survey data.¹⁰⁶ Farmers looking to rebound this year are contending with higher input prices from currency depreciation and weakening financial access in the wake of the coup, with more severe impacts potentially on the horizon as the security situation evolves.¹⁰⁷ Dramatic curtailment in banking operations and a drop of port trade volume by 55–65% in the immediate aftermath of the coup suggest, in UNDP's words, that 'Myanmar is approaching the point of economic collapse'. The agency's most pessimistic projections see a complete reversal of Myanmar's progress in cutting poverty in half between 2005 and 2017.¹⁰⁸

4.2 Political and economic links

China and Myanmar have a close relationship across a variety of political and economic spheres. China is Myanmar's largest trading and investment partner. It has also been a crucial strategic partner internationally for both military and civilian leaderships in Myanmar over recent decades, against the backdrop of US and European pressure over human rights. But periods of international isolation and intense dependency upon China have also encouraged a wariness among Myanmar elites – including the military – about the strategic value of diversifying international alliances as balances against Chinese influence.¹⁰⁹

101 <http://extwprlegs1.fao.org/docs/pdf/mya180003.pdf>, p. 37.

102 <http://extwprlegs1.fao.org/docs/pdf/mya180003.pdf>, p. 9.

103 <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2019&locations=Z4&start=1961>

104 <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/134102/filename/134310.pdf>

105 <http://extwprlegs1.fao.org/docs/pdf/mya180003.pdf>, p. 9.

106 www.asia-pacific.undp.org/content/dam/rbap/docs/Research%20&%20Publications/democratic_governance/UNDP-RBAP-COVID-19-Coup-d-Etat-and-Poverty-Impact-on-Myanmar-2021.pdf, p. 13.

107 www.asia-pacific.undp.org/content/dam/rbap/docs/Research%20&%20Publications/democratic_governance/UNDP-RBAP-COVID-19-Coup-d-Etat-and-Poverty-Impact-on-Myanmar-2021.pdf, p. 13.

108 www.asia-pacific.undp.org/content/dam/rbap/docs/Research%20&%20Publications/democratic_governance/UNDP-RBAP-COVID-19-Coup-d-Etat-and-Poverty-Impact-on-Myanmar-2021.pdf, pp. 3-4.

109 <https://www.irrawaddy.com/opinion/guest-column/china-myanmar-no-interference.html>.

This dynamic of fraught dependency may intensify in the aftermath of the coup in February 2021, which replaced the country's elected civilian leadership, successors to the regime that ruled Myanmar from 1962 until 2011, with a military junta. The coup has deepened estrangement between the West and Myanmar that, after a hiatus during the civilian government's first years, had reappeared in 2017 with the persecution and displacement of hundreds of thousands of Rohingya in south-western Myanmar; the US has suspended its trade deal with Myanmar pending the restoration of elected government.¹¹⁰ China, by contrast, has rejected Western and UN 'inappropriate interference' and sent only sporadic signals of openness to engagement with the erstwhile civilian government.¹¹¹ Widespread perceptions of Chinese support for the junta prompted attacks on Chinese factories in Yangon in March 2021.¹¹² The consolidation of military power in the coming months may further deepen the junta's reluctant reliance upon China as a strategic partner, with important ramifications for the political power balance within which Myanmar–China trade and investment flows take place.

Overland trade flows between the two countries build upon a history of ethnic and commercial interconnection along the China–Myanmar borderlands underpinned by the many communities with populations that straddle both sides of the border: traditional hill tribes like the Kachin/Jingpo and Lisu, plains communities like the Shan/Dai, and ethnic Han populations in the Kokang region of Myanmar.

The China–Myanmar Economic Corridor (CMEC) represents a particularly important policy framework for economic interconnection between the two countries. The CMEC was first announced publicly in November 2017, at a meeting between Chinese Foreign Minister Wang Yi and State Councillor Aung San Suu Kyi in the Myanmar capital Naypyidaw. At the time CMEC was the second bilateral economic corridor between China and a neighbouring country, after the China–Pakistan Economic Corridor.

110 www.reuters.com/world/asia-pacific/eu-hits-myanmar-junta-members-two-military-companies-with-sanctions-2021-04-19/; <https://www.cnbc.com/2021/03/30/us-suspends-trade-deal-with-myanmar-until-elected-government-returns.html>.

111 www.reuters.com/world/china/senior-chinese-diplomat-hopes-asean-summit-helps-with-myanmar-soft-landing-2021-04-23/; <https://www.sbs.com.au/news/china-says-deadly-military-coup-in-myanmar-should-be-left-to-play-out-without-foreign-interference>; <https://www.scmp.com/news/china/politics/article/3122478/china-ready-work-asean-ease-myanmar-coup-turmoil>; <https://www.usip.org/publications/2021/04/chinas-high-stakes-calculations-myanmar>.

112 www.scmp.com/week-asia/politics/article/3125583/why-are-myanmars-anti-coup-protesters-angry-china.

Box 3 Recent high-level visits between China and Myanmar

Xi Jinping's first official visit of 2020 was to Myanmar, the first CPC General Secretary to visit since 2001.

Other recent meetings involving top-level political leaders:

1. 16 May, 2017: State Councillor Aung San Suu Kyi visits China
2. 24 November, 2017: Commander in Chief of Armed Forces Gen. Min Aung Hlaing visits China
3. 1 December, 2017: Aung San Suu Kyi visits China
4. 9 April, 2019: Min Aung Hlaing visits China
5. 24 April, 2019: Aung San Suu Kyi visits China
6. 7 December, 2019: Foreign Minister Wang Yi visits Myanmar
7. 17-18 January, 2020: Xi Jinping visits Myanmar. The visit marked the 70th anniversary of the establishment of diplomatic relations between Myanmar and China. It was his first foreign visit for the year, and the first visit by a Chinese president to Myanmar since Jiang Zemin in 2001, both signals of the value that Xi places upon the relationship.
8. 11 January, 2021: Wang Yi visits Myanmar

Progress on major projects under CMEC has been slow, and Myanmar's attitude is one of cautious engagement as it seeks to balance the economic opportunities of domestic infrastructure upgrades and expanded physical access to Chinese markets with the strategic risks of deeper dependence on its more powerful neighbour. There are also questions around the merits for Myanmar of China's specific priorities. The impacts of Covid-19 in 2020 intensified this dilemma, as China's plentiful and prompt public health and financial assistance to Myanmar during the pandemic was accompanied by heightened pressure for progress on core CMEC projects.¹¹³

Despite the closeness of economic relations, formal agreements underpinning Sino-Myanmar economic relations are limited (see Table 4). There is no bilateral investment treaty in place should disagreements between local and Chinese investors require legal recourse. The absence of a double-taxation treaty may hinder long-run investment growth if this sufficiently increases the cost of doing business, and possibly also encourage informal trade and investment ties.

Table 4 Bilateral economic agreements signed between China and Myanmar

Agreement type	Status
Bilateral Investment Treaty	No
Currency Swap Agreement	Agreed in February 2019 that both Chinese yuan (RMB) and Japanese yen would become settlement currencies in Myanmar. Only licensed banks are allowed to open RMB and Yen accounts. ¹¹⁴
Double Taxation Agreement	No
Least Developed Country (LDC) Trade Preferences	Yes
Phytosanitary Agreement	Selective; Under discussion

Source: <https://investmentpolicy.unctad.org/international-investment-agreements>; <http://www.chinatax.gov.cn/>; <http://www.moa.gov.cn/>

Myanmar agreed a currency swap agreement in February 2019, under which both the RMB and the Japanese Yen would become settlement currencies. The agreement has been described as ‘strengthening mutual trust and good-neighbourly friendship and has promoted the active economic activities of the population in poverty-stricken areas’. Permission to open a Chinese yuan (RMB) (or Japanese yen) account is limited to licenced banks.¹¹⁵

With respect to trade-related policies, China retains selective high tariffs, for example on staple grains including rice. In addition, under China’s system of tariff-rate quotas equivalent imports face 1% tariffs up to a certain ‘quota’ volume, above which tariffs rise to up to 65%. In Myanmar’s case, annual quota allocations are subject to frequent negotiation.¹¹⁶ The recent Regional Comprehensive Economic Partnership Agreement excludes corn, rice or natural rubber from its scope, and hence does not change China’s tariff levels on those important export lines for Myanmar.

Myanmar, uniquely in this country sample, does enjoy one additional LDC trade benefit, in the form of the Rule of Cumulation. Where normally an LDC can take advantage of a related trade preference only if a good is entirely domestically produced, the Rule of Cumulation allows countries to also use materials originating from other countries provided that the originating goods or materials were obtained from or produced in China, or the originating goods or materials were from other beneficiary countries within the same regional economic group as the subject beneficiary country. Member countries are allowed to use other member country originating materials to produce their own export products and gain LDC trade benefits where this applies (i.e. the goods being exported must be exclusively the produce of the LDC). It is not known, however, if Myanmar is deriving any additional benefit from the Rule of Cumulation.

In any case, agricultural trade flows between China and Myanmar have generally been through

¹¹⁴ <https://finance.sina.com.cn/stock/usstock/c/2019-02-06/doc-ihrfqzka3915460.shtml>

¹¹⁵ <https://finance.sina.com.cn/stock/usstock/c/2019-02-06/doc-ihrfqzka3915460.shtml>

¹¹⁶ See, for instance, www.mmmtimes.com/news/myanmar-seeks-higher-export-quotas-china-rice-year.html (a request by Myanmar rice interests for larger quotas)

informal channels, though an increasingly strict border regime has curtailed trade in staple crops like rice and maize. Intergovernmental agricultural cooperation frameworks are relatively thin, and non-tariff barriers are a serious constraint on formal trade. Only a select handful of crops – including rice, watermelon and beef – enjoy SPS import agreements as approved by China’s General Administration of Quality Supervision. An SPS agreement for rice imports was only adopted in 2015.¹¹⁷ In the meantime, China’s tariff-rate quota system makes market access for staple goods like corn and maize a matter of quota-based negotiation.¹¹⁸ Formal trade requires a General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) quality check and certificate, along with traceability (certification for the locations where the paddy was planted and milled). Rice quality is an important consideration for formal rice exports on the international market.¹¹⁹ Xi’s state visit to Myanmar in 2020 featured the signing of a series of SPS requirement protocols on broken rice,¹²⁰ beef cattle and heat-treated silkworms.¹²¹ Myanmar is seeking to negotiate further agreements with the Chinese authorities for exports of other crops including bananas.¹²²

Formal investment by China in Myanmar is heavily skewed towards energy, mining and CMEC projects, rather than agriculture. ODI’s research indicates that, out of a total of \$19.9 billion in FDI reported in Myanmar government statistics between 1989 and 2015, just \$6.7 million went to the agricultural sector.¹²³ This is consistent with global investment trends: FDI in agriculture, forestry and fishing has remained below 1% of total FDI value for several decades.¹²⁴

A significant share of agricultural foreign investment in Myanmar is informal, much of it from China, and hence goes unreported.

In 2020 the International Crisis Group explained the predominance of informal Chinese investment in Myanmar’s agricultural sector:

Over the past two decades, Myanmar has become an important source of agricultural products for Chinese markets, making this sector a major focus for small and medium-sized Chinese investors. Attracted by the availability of land, the lack of regulations and cheap labour, these businesses have heavily invested in vast plantations of cash crops, such as sugarcane, corn, watermelons

117 www.customslawyer.cn/portal/fgk/detail/id/62255.html

118 www.mmmtimes.com/news/merchants-request-aqsiq-certificates-exports-china.html; <https://www.producereport.com/article/myanmar-seeks-permission-export-more-fruits-china>; http://www.xinhuanet.com/english/2019-03/22/c_137915892.htm; http://www.xinhuanet.com/2018-03/31/c_1122619904.htm

119 Dorosh, P., Win, M. T., & Van Asselt, J. (2019). Production shocks, exports and market prices: An analysis of the rice sector in Myanmar (Vol. 1830). International Food Policy Research Institute.

120 碎米 as opposed to 大米.

121 MOFCOM Guide to Investment in Myanmar 2020, pp. 57-58.

122 www.mmmtimes.com/news/pineapple-growers-call-official-export-channels-china.html; http://www.xinhuanet.com/english/2019-03/22/c_137915892.htm.

123 www.odi.org/publications/10774-foreign-direct-investment-and-economic-transformation-myanmar.

124 [www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TAD/TC/CA/WP\(2019\)2/FINAL&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TAD/TC/CA/WP(2019)2/FINAL&docLanguage=En) (p. 13). Approved foreign investment from China, Hong Kong and Macau over FY2016-17 through FY2019-20 (April 2016 to September 2020) comprised 24.4% of all approved investment (\$5.822bn of \$23.817bn), second only to Singapore (a 46.7% share, with \$10.978bn in investments) Source: www.dica.gov.mm/sites/dica.gov.mm/files/document-files/yearly_country_14.pdf

*and bananas ... Most Chinese investment in agriculture is informal and unrecorded due to the conflict setting, corruption and legal restrictions, particularly regarding foreign ownership and use of land. Often, this investment is in the form of contract farming or short-term land rental agreements. In other cases, however, Chinese investors have used Myanmar proxies, either individuals or companies, to secure long-term land leases, including in conflict areas. There is no reliable data on the size of the plantation sector, but informal Chinese investment in Myanmar's agriculture industry likely runs into hundreds of millions of dollars a year. Almost none of this money shows up in Myanmar's official investment statistics.*¹²⁵

The most widely discussed official Chinese government schemes for encouraging agricultural investments in Myanmar may be crop-substitution programme supporting Chinese agribusiness investments in former opium-growing regions of northern Myanmar and Laos.¹²⁶ These programmes began in the 1990s with small-scale initiatives organised by border county authorities in China's Yunnan Province, and expanded significantly in the mid-2000s with hundreds of millions of RMB in support from central authorities, primarily in customs tax breaks and direct subsidies linked to planted land size. Within Myanmar, they largely targeted territories under the control of ethnic armed groups, and as such were characterised by similar patterns to those discussed

by the International Crisis Group above – ‘informal and unrecorded’ investments that rely upon local elites as proxies for long-term land leases.

It is understood that the bulk of investments were in rubber, rice or corn plantations sponsored by SMEs from Yunnan; for rubber, in particular, China's Opium Replacement Planting (ORP) subsidy programme and a global rubber price spike in the late 2000s drove the development of new rubber production bases in northern Myanmar outside of the crop's traditional heartland in the country's south-east.¹²⁷

Several CMEC projects have potential indirect significance for agricultural trade and investment. The proposed Muse–Mandalay and Naypyidaw–Kyaukpadaung Highways will be important commercial trade corridors with spillover effects for agricultural exchange. CMEC has also made moderate progress in advancing the three border economic cooperation zones at Kanpikete–Houqiao in Kachin State and Muse–Ruili and Chinshwehaw–Mengding in northern Shan State.

In November 2019 the Chinese SOE CITIC Construction Group, the Myanmar Rice Federation (the country's rice trade association) and the Myanmar Agribusiness Public Corporation signed a \$130 million deal to construct agricultural centres in Yangon, Ayeyarwady, Mandalay and Rakhine, providing storage, market access and marketing support to farmers.¹²⁸

125 International Crisis Group 2020, p. 17. <https://www.crisisgroup.org/asia/south-east-asia/myanmar/305-commerce-and-conflict-navigating-myanmars-china-relationship>

126 <https://www.tni.org/my/node/1308>; Edmund Downie, ‘Seeds in Stasis: China's Crop-Substitution Programs in Northern Myanmar, 2009-2020,’ unpublished manuscript.

127 The resumption of civil war within northern Myanmar in 2009 caused a sharp contraction in ORP support for investment expansion, while haphazard program administration, declining subsidies, and a rubber price collapse have weakened investor enthusiasm for the programme.

128 www.mmmtimes.com/news/china-myanmar-firms-invest-130m-four-agriculture-centres.html.

There are some small-scale demonstration zones and pilot projects, particularly around Naypyidaw. The China (Guangxi)-Myanmar Agricultural Technology Demonstration Base was set up in 2017 by Guangxi's College of Agricultural Science, the MOALI and a group of Chinese and Myanmar firms. It focuses on identifying and promoting promising seed strains as well as other agricultural technology issues. One Chinese firm involved said that it had identified two types of rice and two types of corn that have already been approved for use in Myanmar by the MOALI.¹²⁹

The Chinese Ministry of Science and Technology has also identified several national agricultural parks in Yunnan as vehicles for promoting the 'export and transfer' of 'advanced agricultural technologies and industries of competitive advantage', with particular focus on the China-Myanmar border regions.¹³⁰

Trade relations

According to the World Bank's World Integrated Trade Solutions (WITS) data platform, Myanmar's exports to China in 2018 were valued at \$5.559 billion and imports at \$6.222 billion. Exports mainly comprise food and agricultural raw materials (\$2.926 billion, or 60% of all exports). The vast majority of imports (\$5.979 billion, or 96% of all imports) are manufactures, including chemical materials and products, manufactured goods and machinery and transport equipment.¹³¹

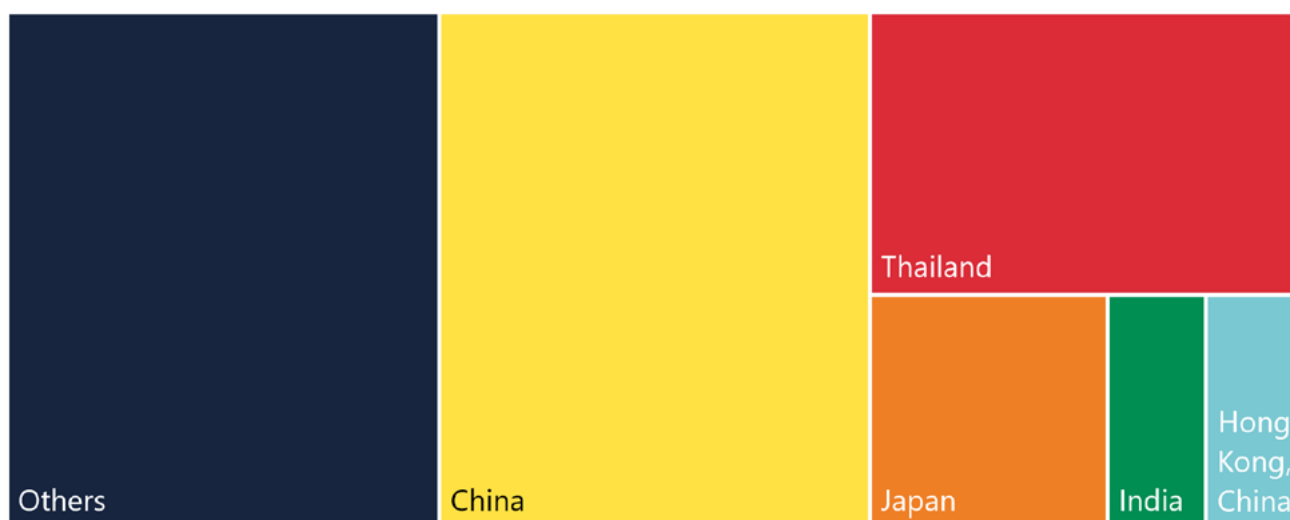
129 <http://n.eastday.com/pnews/1579519918018766>.

130 www.most.gov.cn/xxgk/xinxifenlei/fdzdgknr/jyta/202101/t20210121_160963.html

131 Food and agricultural raw materials include the following types of products:

- Food (\$4.616bn): food and live animals, beverages and tobacco, animal and vegetable oils/fats/waxes, and oil seeds and oleaginous fruit (SITC Revision 2 product codes 0, 1, 22, and 4)
- Agricultural Raw Materials (\$0.312bn): hides/skins/furskins (raw), crude rubber, cork and wood, pulp and waste paper, textile fibres and their wastes, and crude animal and vegetable materials (SITC Revision 2 product codes 20-26 and 29)

For classification information, see WITS, 'Standard International Trade Classification (SITC) Products,' <https://wits.worldbank.org/data/public/SITCProducts.xls>.

Figure 3 Exports by destination, Myanmar, 2018

Source: WITS (March 2021).

While one-third of Myanmar's total (formal) exports go to China (Figure 3), for food and agricultural raw materials exports this reaches almost 60%, according to WITS data for 2018. The share in fact is likely to be much higher again, since the bulk of agricultural exports take place through informal channels that exist in a legal grey zone. In recent years, these export channels have come under pressure as Chinese officials have intensified customs enforcement to reduce these previously tolerated forms of 'smuggling', and only gradually expanded formal market access to compensate.

Rice is one of the most visible traded goods. China's long-standing self-sufficiency priorities in staple grains have restricted formal channels for rice trade between Myanmar and China. The two countries only established the relevant SPS agreements for rice exports in 2015 and introduced a 100,000-ton quota for the export

of rice from Myanmar to China in 2016, which subsequently was increased to 400,000 tonnes in 2019.¹³²

Yet the Myanmar–China rice trade thrived without formal agreements. According to official Myanmar government statistics reported in an International Food Policy Research Institute discussion paper, the country's border trade exports – most of which flowed to China – stood at between around 850,000 and 1.35 million tonnes a year from fiscal years 2012–2013 to 2015–2016.¹³³ WITS data for 2014 reports the export of some 1.2 million tonnes (79.5% of all official rice exports) to China, for a total value of \$468 million.¹³⁴ These exports were part of broader flows of 'smuggled' rice to China over land borders from South-east Asia that took advantage of a variety of pull factors, including poorer consumers' demand for cheap rice from countries like Myanmar and Vietnam and

¹³² www.customslawyer.cn/portal/fgk/detail/id/62255.html

¹³³ Dorosh, Win and van Asselt 2019. Available: <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/133220/filename/133431.pdf>, p. 14.

¹³⁴ WITS data for HS codes 100610, 620, 630, and 640.

arbitrage opportunities for imported rice due to high minimum purchase prices for domestically produced grain in China (Zhang, 2019).¹³⁵

Since 2016, intensified anti-smuggling campaigns have undermined the informal channels the China–Myanmar rice trade relies upon.¹³⁶ By 2019, Myanmar exported just 421,000 tonnes of rice to China for a total value of \$234.1 million, or 18.1% of the country's total rice exports.¹³⁷ More recently, amid the Covid-19 pandemic in 2020, China sought to deepen the use of formal trade channels. Authorities went as far as stopping accepting phytosanitary certificates issued by Myanmar officials to Myanmar rice exporters that lacked export licences from China.¹³⁸ Subsequently, Chinese authorities increased licence allocations to Myanmar rice exporting companies, from 11 in 2015 to 43 in 2020.¹³⁹

Rubber production is important for Myanmar, and some 60% of national production of 240,000 tonnes was exported in the 2017–2018 reporting year,¹⁴⁰ though media reports suggest that actual export shares may be higher.¹⁴¹ ¹⁴² China purchased around 70% of Myanmar's total rubber exports by volume, and 65% by value, in 2018.¹⁴³ Chinese data suggested imports of rubber from Myanmar of around 120,000 tonnes, valued at \$200 million, for 2018 (WITS, 2021).¹⁴⁴ This comprises just 5% by value and volume of China's rubber imports, illustrating the different scale of dependence bilaterally.¹⁴⁵ Since the 1950s China has designated rubber as a 'strategic resource' given its value as an industrial raw material, and implying a limit on how much production might ever be outsourced to Myanmar.

In terms of Myanmar's rubber production, some 80% takes place in the country's south, with a high concentration of relatively highly productive

135 Zhang, Hongzhou. *Securing the 'Rice Bowl': China and Global Food Security*. Springer, 2018: 167–168.

136 <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/133220/filename/133431.pdf>

137 WITS data.

138 USDA 2020 (https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Burma%20-%20Rice%20Export%20Policy%20Updates%20during%20COVID-19_Rangoon_Burma%20-%20Union%20of_05-14-2020).

139 www.mmmtimes.com/news/china-grants-rice-export-licences-43-myanmar-companies.html; Dorosh, Win, and van Asselt 2019, p. 15.

140 <https://ap.fftc.org.tw/article/2606>

141 See, for instance, <https://www.mmmtimes.com/news/rubber-exports-expected-rise-production-improves-myanmar.html>.

142 <https://madeinchinajournal.com/2020/05/06/strategic-resources-and-chinese-state-capital/>. This section also draws heavily upon Downie 2020.

143 WITS data, reflecting HS codes 400110, 400121, 400122, and 400129.

144 <https://wits.worldbank.org/>

145 WITS data, reflecting HS codes 400110, 400121, 400122, and 400129.

private, smallholder farmers.^{146 147 148} The rubber sector in the northern Myanmar border states of Shan and Kachin expanded from the 1990s, and especially the mid-2000s, in response to Chinese crop-substitution efforts. Moreover, in contrast to the prevalence of smallholder farming in south-eastern Myanmar, plantations in Kachin and Shan are generally larger, developed through partnerships between Chinese investors and local elite power-brokers.^{149 150}

Over the past decade, weak commodity prices have dampened enthusiasm for Chinese rubber investments in Myanmar, but other export-oriented crops have seen significant expansion. Watermelon and banana merit particular attention, as examples of contrasting models of Chinese investment in export-oriented agricultural production in Myanmar.

Watermelon has seen a major boom in cultivation in Myanmar over the past decade through Chinese

entrepreneurs arranging production for the Chinese market. The country's watermelon export volumes grew more than six-fold over the decade from 2008–2009 (117,799 tonnes) to 2018–2019 (694,844 tonnes).¹⁵¹ Roughly 90% of production is exported to China – using seeds imported from China.¹⁵² One industry source reported in 2017 that Myanmar watermelons supplied 80% of the Chinese market outside of the domestic growing season, when domestic production relies on expensive greenhouse-based cultivation.^{153 154} One estimate puts the value of exports at nearly half that of rice.¹⁵⁵ Another suggests that exports 'are likely worth at least \$200 million a year but could net double that amount when prices are high'.¹⁵⁶

Myanmar farmers contract with each other or (more often) with Chinese investors to rent land for watermelon cultivation. Since cultivation is fertiliser- and pesticide-intensive, growers must rotate across different land parcels to sustain

146 Center for Economic and Social Development 2019 (www.southsouth-galaxy.org/wp-content/uploads/2019/03/South-South-Ideas-Sustainable-Rubber-Value-Chain-Development-Analyzing-Myanmars-Opportunities-and-Challenges-for-Green-Transformation-for-SSC.pdf), p. 17

147 <https://ap.fftc.org.tw/article/2606>

148 These three southeastern states are also Myanmar's most productive; yields sit at around 830–910 kg/ha, as opposed to a national average of 733 kg/ha. <https://www.tni.org/my/node/1308>. A satellite examination by Chinese researchers of planted rubber land in Wa State, a major EAG territory and ORP investment destination in northern Shan, estimated total rubber plantings of around 11,000 hectares. Liu Chenli, Zhang Jun, Yang Xuchao, and Li Jie, "缅甸佤邦北部罂粟替代种植下橡胶林时空演变特征" ("Spatial and Temporal Characteristics of Opium Replacement Planting Rubber in Northern Wa State in Myanmar"), *Journal of Western China Forestry Science*, 47(4): August 2018, pp. 116, 118–119. The other key rubber plantation destination of Chinese ORP investments in Shan State is the EAG territory of Mongla; claimed planted rubber land in Mongla by ORP quota applicants from Yunnan's Xishuangbanna Prefecture in 2018, the largest sponsor of ORP rubber investments in Mongla, was around 15,000 hectares. See Downie 2020.

149 www.tni.org/my/node/1308.

150 WWF, 2017 (http://d2zouvy59podg6k.cloudfront.net/downloads/rubber_production_in_tanintharyi_region_web.pdf), p. 4.

151 International Crisis Group, 2020, p. 20.

152 Kubo, 2018, p. 6.

153 www.producereport.com/article/myanmar-watermelon-nabs-chinas-season-market-share.

154 WITS data reports highly fluctuating export volumes to China of around 100,000 tonnes in 2016, 900,000 in 2017, and 200,000 in 2018 – but with constant values across these years of around \$95–\$105mn. Source: WITS data, using HS code 080700.

155 Kubo, 2018 (www.ide.go.jp/library/English/Publish/Download/Brc/pdf/21_04.pdf), p. 1.

156 International Crisis Group 2020, p. 20.

yields, using lower-value crops in between watermelon plantings.¹⁵⁷ Cultivation mostly takes place in northern and central Myanmar, and produce is transported via Mandalay to the Muse/Ruili border port, where a broker-based wholesale market delivers the melons to Chinese buyers.¹⁵⁸ Investment is largely via small-scale Chinese entrepreneurs with links to companies or individuals in Myanmar. The watermelon sector is regarded as a relatively positive example of informal Chinese investment in Myanmar:

Workers in watermelon cultivation are typically a mix of locals and landless migrants, told Crisis Group that the \$100 monthly salary was more than they could expect from casual jobs in their villages ... When the authorities shut the border in early 2020 to impede the spread of coronavirus, many Chinese site managers abandoned their fields in Myanmar, leaving workers unpaid and watermelons cracked and rotting on the ground. Politicians and civil society organisations have also openly criticised the widespread flouting of land use, immigration and import rules in the sector, and expressed concern about the potential environmental and health effects of excessive agrichemical use. The intensive nature of watermelon cultivation mitigates some of the issues related to banana cultivation, however. Investors can grow only two crops consecutively on the same land, which creates little incentive to confiscate fields or acquire them on longer leases. For now,

*watermelons are a mostly positive example of how informal Chinese investment can support Myanmar's economic growth.*¹⁵⁹

Banana production has also seen significant expansion over the last decade, but with more controversial effects. Official government statistics put banana exports for FY2018–2019 at approximately 670,000 tonnes, for a total value of \$262 million, and this figure is likely to be a significant underestimate. In terms of trade with China, the primary formal channel is 'border resident trade', which offers exemptions on import and value-added taxes, but must be carried out by border residents in small volumes (RMB 8,000/day).¹⁶⁰ However, the trade has become formalised as firms have hired groups of border residents to handle it, facilitated by the absence of formal inspection and quarantine. According to the International Crisis Group:¹⁶¹

The cultivation of tissue-culture bananas in northern Myanmar highlights the risks posed by unregulated Chinese investment in agriculture. The industry emerged around a decade ago but has expanded significantly in recent years, particularly after similar plantations were banned elsewhere in South East Asia due to environmental concerns related to the excessive use of illegal pesticides. In Myanmar, tissue-culture banana plantations have been widely linked to armed conflict actors, land confiscations and environmental damage, and have prompted a backlash from local residents and civil society.

157 Kubo, 2018, p. 10.

158 Kubo, 2018, p. 8.

159 International Crisis Group, p. 21.

160 Hayward et al., 2020 (www.mrlg.org/publications/publication-title-chinese-investment-into-tissue-culture-banana-plantations-in-kachin-state-myanmar/), p.22.

161 <https://www.crisisgroup.org/asia/south-east-asia/myanmar/305-commerce-and-conflict-navigating-myanmars-china-relationship>

For several other crops, notably maize, export volumes to China have declined as part of China's crackdown on the informal border trade. Maize exports increased significantly during the 2010s, reaching 1.67 million tonnes in 2018, according to official data.¹⁶² All of this was through informal channels, since the Chinese central authorities had not approved maize imports from Myanmar. Exports fell precipitously to just 150,000 tonnes in 2019 as China intensified enforcement (maize exports to other ASEAN countries increased to offset some of the decline).¹⁶³ Sugar likewise saw a dramatic decline, though a significant portion of Myanmar's sugar exports to China are actually re-exports from India or Thailand.¹⁶⁴

4.3 Opportunities

Although the agricultural sector is Myanmar's most important economic pillar, agricultural cooperation unsurprisingly does not enjoy the stature of strategic sectors like energy and infrastructure in China–Myanmar economic diplomacy. Agriculture features only inconsistently in the formal communiques arising out of state visits between China and Myanmar. CMEC does not have an agricultural focus, though its highway and border port ambitions offer opportunities for strengthening agricultural trade and investment.

The province of Yunnan has a more explicit agenda for upgrading agricultural cooperation with Myanmar beyond raw materials to a broader whole-of-supply-chain focus, integrating research

and development, production, processing and sales. For instance, the province emphasises expanded cooperation in livestock and animal husbandry, calling for joint planning on inspection and quarantine centres abroad. Recent updates to Yunnan's Opium Replacement Planting policies, which subsidise cultivation for imports to Chinese markets in the China–Myanmar borderlands, discuss encouraging the expansion of processing and animal husbandry as well, and a handful of ORP-sponsored firms as of 2018 were exploring cattle-farming ventures in northern Shan State.¹⁶⁵ These shifts support a young but rapidly growing cattle export sector in northern Myanmar targeting the Chinese market since the two countries agreed to allow live cattle exports from Myanmar in 2017.¹⁶⁶

Against this backdrop, three themes for Myanmar policy-makers appear to offer favourable possibilities in terms of agricultural cooperation with China. The coup, of course, has created significant uncertainty about Myanmar's near-term economic future and recentralised power in a military junta whose pre-2011 economic record was much more autarkic than their post-2011 civilian counterparts. Indeed, Yangon-based specialists from the US Department of Agriculture reported in March 2021 that 'the military appear[ed] to be pushing for self-sufficiency in basic foodstuffs ... There are initial calls to promote the agriculture sector and avoid "unnecessary" imports to reduce the trade deficit'.¹⁶⁷ The junta's ability to consolidate power

162 www.mmmtimes.com/news/asean-demand-myanmar-maize-rises.html

163 www.mmmtimes.com/news/maize-could-be-next-big-agriculture-export-myanmar.html; <https://www.mmmtimes.com/news/asean-demand-myanmar-maize-rises.html>.

164 <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/134185/filename/134396.pdf>; Downie 2020.

165 www.rlsyq.gov.cn/zw/zc/content-49-1953-1.html; Downie 2020.

166 www.frontiermyanmar.net/en/government-regulations-put-the-brakes-on-cattle-exports/

167 https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Impact%20of%20Burma%20Military%20Coup%20on%20Agriculture%20Sector%20and%20Trade_Rangoon_Burma%20-%20Union%20of_03-03-2021

and suppress civil disobedience, as well as its own agricultural priorities, will determine the potential audience for some of these suggestions.

Trade infrastructure expansion

The CMEC offers a promising opportunity for addressing infrastructure deficits in China–Myanmar agricultural trade. Myanmar authorities should continue to prioritise highway expansion and border trade infrastructure projects that reduce transaction costs for Myanmar farmers in accessing Chinese markets. But progress on these fronts will depend upon the national security environment: in particular, conditions in infrastructure-poor regions of northern Myanmar, where several ethnic armed groups were in active conflict with the military even before the coup.¹⁶⁸ The United States Institute of Peace notes disruptions from the coup in planning around a China–Myanmar rail interconnection and in Chinese construction projects in Lower Myanmar.¹⁶⁹ In May 2021 guards at a pipeline off-take station in Mandalay were attacked.¹⁷⁰

Market access

Even if instability interferes with the expansion of physical interconnections, rollbacks to regulatory barriers that restrict access to Chinese markets can expand Myanmar farmers' export opportunities to China. The dramatic decline in maize exports exemplifies the risks associated with over-reliance on informal trade channels that in recent years have become increasingly restricted. Authorities should seek to link

progress on infrastructure interconnection to the relaxation of non-tariff barriers, through the establishment of SPS agreements and the expansion of quotas and licences for formal export. A United Nations Conference on Trade and Development (UNCTAD) report in 2019 on a new policy for trade access for Myanmar had some useful suggestions on this front: in particular, encouraging Myanmar to develop multilateral strategies with other LDCs to pressure China on reducing non-tariff barriers through engagement with the World Trade Organization SPS committee. Myanmar's economic dependence on China can limit its leverage in pressing for its own priorities in agricultural trade directly, and so multilateral cooperation has extra value.¹⁷¹ Whether state capacity exists for achieving related shifts is unclear.

Export destination diversification

Over-dependence on the Chinese market both increases risk for Myanmar farmers and undermines Myanmar's negotiating leverage in seeking better terms for market access (incidentally, the same could be said for Myanmar pulse exports with regard to India.) Myanmar could seek to diversify export destinations for crops like rice, watermelon and rubber that heavily rely on the Chinese market.¹⁷² An increase in maize exports to ASEAN in 2019 after the Chinese market disappeared, discussed above, is a positive sign of latent demand.

168 www.reuters.com/article/us-myanmar-politics-ethnic/as-ethnic-armies-unite-against-coup-war-returns-to-myanmars-borderlands-idUSKBN2BM2KF

169 www.usip.org/publications/2021/04/chinas-high-stakes-calculations-myanmar

170 www.irrawaddy.com/news/burma/attack-oil-and-gas-pipelines-china-off-take-station-spotlight-stakes-junta-regime-protect-protesters-arson-attack-strategic-investment-uncsc-support.html

171 UNCTAD, 2019 (https://unctad.org/system/files/official-document/aldc2019_myanmar_doc_en.pdf), p. x.

172 www.internationalaffairs.org.au/australianoutlook/trade-diversification-essential-for-australias-recovery/

4.4 Barriers and risks

Deepening agricultural ties between China and Myanmar requires addressing a host of challenges, from financial and institutional integration to physical infrastructure and governance weaknesses. Below, we discuss three particular themes: production constraints, political and regulatory instability, social consequences, SPS issues, and agrichemical use.

Production constraints

Despite the importance of China as an economic partner, the physical infrastructure undergirding trade and investment suffers from severe deficits. The China–Myanmar border region is located well outside Myanmar’s historic economic and political core in the Burmese heartlands of the Irrawaddy River valley. It instead runs across hilly terrain inhabited by an array of cross-border ethnic groups engaged in a series of ethnonationalist insurgencies against the Myanmar government for much of the country’s history since independence in 1948. These conflicts have impeded physical interconnection linking productive agricultural

regions in Lower Myanmar with China. Meanwhile, international sanctions have constrained access to global finance for infrastructure improvements.¹⁷³ The CMEC seeks to directly target these deficits, improving border port infrastructure and highways to boost internal connectivity across the country.

Political and regulatory instability

Agricultural trade and investment take place amidst significant political volatility. Within Myanmar, domestic conflicts associated with the ongoing civil war are a persistent concern. The resumption of fighting in the borderlands since 2009 has severely heightened political risk for Chinese investors in this region; Chinese reports on the ORP frequently cite political instability and threats to physical safety as a significant deterrent to investment, particularly among larger and more well-resourced agricultural firms.¹⁷⁴

Meanwhile, on the Chinese side, gaps in formal authorisations expose many export crops to risk associated with Chinese enforcement decisions. The past several years have seen a strong push from China to cut down on informal trade, driving declines in rice and maize exports from Myanmar to China noted above. Fieldwork at the key Ruili–Muse border port by geographer Xiaobu Su describes a thick network of new barbed-wire fencing, concrete roadblocks and surveillance cameras as well as expanded security guard deployments in place since 2017.¹⁷⁵

173 For more on international sanctions, see https://www.stimson.org/2021/myanmar-country-profile/#elementor-toc__heading-anchor-5

174 Downie 2020.

175 Su, 2020 (https://www.tandfonline.com/doi/pdf/10.1080/09692290.2020.1859400?casa_token=bfBP_saKIRIAAAAAA:EEEXuOIVY8jxkEs-3Xta7ic19f1Lp2b6VGiay7HeT9sLopG9V1HYd-8kv1UcFrUyQA4kPj4WxOmulNQ), pp. 17–18. <https://scholarspace.manoa.hawaii.edu/bitstream/10125/43645/1/api127.pdf>.

Social consequences

As noted above, agribusiness expansion in Myanmar – particularly in conflict regions in the northern borderlands – has been accompanied by dispossession and displacement of ethnic minority peasants relying upon customary and non-titled forms of land tenure. Land reform laws passed in the early 2010s weakened smallholder land security by expanding land title formalisation with onerous demands for proof of tenure and low barriers to state confiscation that were particularly damaging for communities relying upon customary tenure. Land governance deficits are mirrored in environmental regulation, where communities often struggle to impose limits on the impacts of the pollution-intensive cultivation of crops like bananas.

Chinese investments have at times exacerbated these land and environmental tensions, as in the expansion of banana and rubber plantations in Kachin and Shan States.¹⁷⁶ Commercial agribusiness under Chinese capital in northern Myanmar has also offered a channel for Myanmar political elites to consolidate power over territory and resource flows in contested borderlands, as chronicled in research by Kevin Woods.¹⁷⁷ Local powerbrokers in these regions – military and government authorities, ethnic armed groups and their affiliates – partner with sources of Chinese capital such as ORP firms to finance plantation-style agricultural investments that involve acquiring land traditionally used by hill tribe peasants under customary and non-titled forms of land tenure. Woods describes the way in which military authorities, for instance, have used such

land concessions as resources to win allegiances among friendly ethnic armed groups and increase pressure on more hostile EAGs:

National and regional military and government authorities granted agribusiness concessions to paramilitary leaders in areas where armed groups under a tentative ceasefire arrangement also claim territorial authority. This territorial intervention cast as a pro-poor agricultural investment leverages the political (and economic) position of the militia strongman at the expense of the ceasefire group who holds the state at a greater political distance. In other cases, military and government officials awarded land concessions to local bosses and national crony companies in forested areas under the territorial control of rebel groups still at war against the national military. Strongmen and cronies built roads and clear-cut forests inside and nearby their concession. The forest conversion led the rebel groups' guerrilla hideouts in some cases to be replaced with Myanmar army battalions.

Resource rents from timber extraction and agricultural production have also been diverted away from rebel checkpoints and towards those manned by military and government officials and militia groups. In addition, ethnic minority populations who inhabit these rebel areas and practise traditional upland cultivation practices have been forcibly evicted from these land concessions, only to be replaced by ethnic majority Burman plantation wage labourers who hold greater state allegiances.¹⁷⁸

176 www.tni.org/files/download/tni-financingdispossession-web.pdf; https://www.mrlg.org/wp-content/uploads/2020/11/Myanmar-Banana-Case-Study-30NOV2020_Final.pdf.

177 www.tandfonline.com/doi/abs/10.1080/21622671.2018.1460276

178 www.tandfonline.com/doi/abs/10.1080/21622671.2018.1460276, p. 4.

Before the coup, signals had emerged that the ruling National League for Democracy was starting to take ethnic minority land concerns more seriously in its proposed National Land Law, which cited the legal protection of customary tenure as one of the law's four major objectives. But the military coup severely clouds the prospects for such change, reinstating as the leadership of Myanmar an institution that has been intensely hostile towards ethnic minority concerns over 70 years of civil war.

Sanitary and phytosanitary issues

SPS regulations and other non-tariff barriers are an important obstacle to trade. As noted above, only certain crops and agricultural products have been approved for export from Myanmar by China's AQSIQ.¹⁷⁹ Myanmar is seeking to negotiate further agreements for other crops including bananas.¹⁸⁰ In the meantime, agricultural trade outside of AQSIQ-approved crops takes place without authorisation in Chinese law and is thus vulnerable to changes in official enforcement activity, as in the examples of rice and maize discussed above.

Agrichemical use

In the case of watermelons, cultivation in Myanmar is both fertiliser- and pesticide-intensive. As a result, growers must rotate across different land parcels to sustain yields, using lower-value crops in between watermelon plantings.¹⁸¹ Investment is largely via small-scale Chinese entrepreneurs with links to companies or individuals in Myanmar.

The watermelon sector is regarded as a relatively positive example of informal Chinese investment in Myanmar. Yet civil society and politicians have expressed fears of excessive agrichemical use. If there are means of supporting this trade between China and Myanmar to become more formal, and also to minimise use of pesticides and fertilisers, this may help to alleviate this risk.

China implemented an Action Plan for Zero Increase of Fertiliser Use in 2015, which led to a decrease in fertiliser use. Chinese scientists have called for the government to establish a fertiliser reduction management system, including scale control, intensity reduction, structural adjustment and other measures.¹⁸² It may pay dividends for an equivalent and localised agenda to be applied to any related agricultural trade between China and Myanmar, including in this example watermelons.

179 www.mmtimes.com/news/merchants-request-aqsiq-certificates-exports-china.html; <https://www.producereport.com/article/myanmar-seeks-permission-export-more-fruits-china>; http://www.xinhuanet.com/english/2019-03/22/c_137915892.htm; http://www.xinhuanet.com/2018-03/31/c_1122619904.htm

180 www.mmtimes.com/news/pineapple-growers-call-official-export-channels-china.html; http://www.xinhuanet.com/english/2019-03/22/c_137915892.htm.

181 Kubo, 2018, p. 10.

182 <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0237234>

5 Country study: Tanzania

Tanzania is historically relatively politically proximate to China, yet it is geographically very distant. Moreover, Tanzania sits in a continent that is especially youth-rich and also incurs unusually high rates of undernourishment on average. China's agricultural ties to Tanzania are long-standing in terms of the training of agricultural experts and demonstrations, but limited at this point in terms of intensive agricultural trade or investment. There are signs this may change, driven both by China's wish to diversify its agricultural import source countries (in terms of soy beans for example), and also driven by emerging new potential to utilise Tanzania as a long-run launching pad for a bigger sub-regional push to foster agricultural productivity and trade within Africa (in China's emerging cassava-related investments in Tanzania, for example). Tanzania's sesame exports to China are already significant, and may lead the way.

5.1 The agriculture sector

Tanzania's agriculture sector significantly contributes to the country's economy and development. The sector contributes nearly one-third of Tanzania's GDP and employs the majority of the nation's population. Malnutrition and food insecurity remain issues in Tanzania, despite plentiful arable land (Table 1). One reason for this is that agricultural productivity has been low for the past 20 years.¹⁸³ National Bureau of Statistics data shows that the sector is largely characterised by smallholder farmers dependent on rain-fed

production, limited use of improved seeds and fertilisers and a low share of cultivated over arable land.

Tanzania produces large quantities of food cereal crops including maize, paddy and sorghum, root crops such as cassava and sweet potato and oil seeds like sunflower and sesame. In terms of production maize is the leading food cereal, while cassava is the leading root crop. The following sub-section presents figures for crop production over a five-year period between 2015 and 2019.

In comparison to the other case studies in this paper, the agricultural relationship between Tanzania and China is underdeveloped. This introductory passage to Tanzania's agricultural sector therefore goes into more detail in order to communicate the potential for a more developed agricultural relationship, especially in the case of soybeans, which have received political attention in the context of China-US trade tensions.

Crops

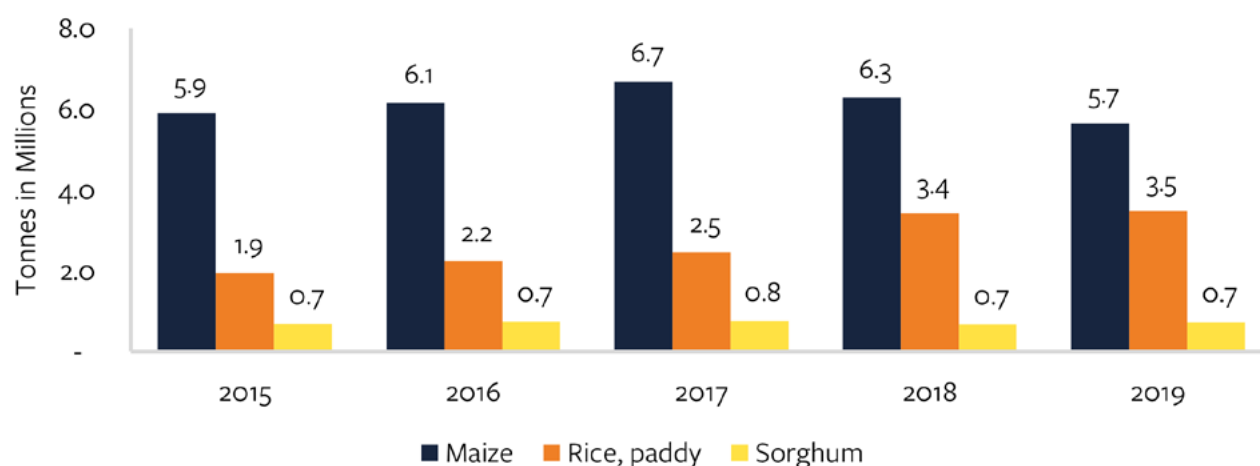
Maize, paddy and sorghum production

Data shows that 47.7 million tonnes of main food cereal crops (maize, paddy and sorghum) were produced between 2015 and 2019. For the same period, maize had the highest production at over 30.5 million tonnes, equivalent to 64% of all cereal production, followed by paddy, at 13.5 million tonnes (28%), and sorghum, at 3.5 million tonnes. According to the Agriculture Census, between

¹⁸³ Key Findings on The National Sample Census of Agriculture, Livestock and Fisheries for Agricultural Year 2019/20. Released Dec 2020: https://www.nbs.go.tz/nbs/takwimu/Agriculture/2019-20_Agri_Census_Key_Findings.pdf

2015 and 2019 maize production decreased by 4%, paddy production increased by 79%, while sorghum production decreased by 8%.

Figure 4 Production of food cereal crops, 2015–2019



Source: Authors' calculation and representation based on <https://www.fao.org/faostat/en/> (2020).

Figure 4 shows that maize outperformed paddy and sorghum for the period under review. The highest production of maize was in 2017, with 6.6 million tonnes, and the lowest in 2019, with 5.6 million tonnes. The highest production of rice and paddy was in 2019, with 6.6 million tonnes, and was at its lowest in 2015, at 1.9 million tonnes. Sorghum production was highest in 2017 with 755,041 tonnes and at its lowest in 2015, with 676,772 tonnes. Both maize and sorghum production rates saw small changes over the years, while rice and paddy production saw an upward trend in the period under review.

Although maize production accounts for more than three-quarters of the cereal produced in Tanzania, it does not meet the required international quality standards.¹⁸⁴ While there is demand for maize from neighbouring East African countries such as Kenya, which experience annual deficits of maize,¹⁸⁵ over 70% of arable land is not cultivated.¹⁸⁶

Population growth also determines Tanzania's demand for food. Over 80% of Tanzania's population, about 50 million people, eat corn.¹⁸⁷ In 2019, however, annual population growth was 2.9%,¹⁸⁸ while in the same year maize production decreased by 10%. On top of that, between 2015

¹⁸⁴ www.matchmakergroup.com/news/maize-sector-in-tanzania-challenges-and-opportunities.aspx#.YGCaGa8zY2w

¹⁸⁵ <http://ansaf.or.tz/cereals/>

¹⁸⁶ www.researchgate.net/publication/281631569_Land_for_Agriculture_in_Tanzania_Challenges_and_Opportunities/link/55f1526108aedecb68ffe96c/download

¹⁸⁷ <http://ansaf.or.tz/cereals/>

¹⁸⁸ <https://data.worldbank.org/indicator/SP.POP.GROW?locations=TZ>

and 2019 maize production fell 1% annually, while the population grew by 2.9%. This is a sign that demand for maize will likely soon exceed supply, which will lead to food insecurity not just for Tanzanians, but also for nearby countries.

In comparison, production growth of rice and paddy outperformed maize and sorghum, at a growth rate of 17% in the same period.

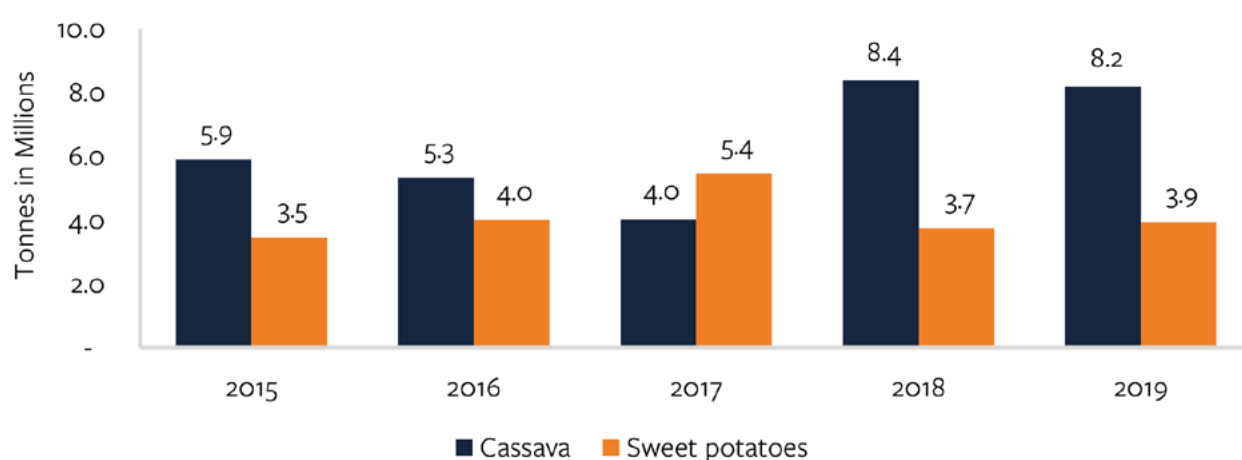
Nonetheless, supply of rice in Tanzania is relatively small compared to maize. Rice is largely produced in lowland rain-fed regions, which

are characterised by lack of technology such as water control (both drought and flood), weed management and low soil fertility.¹⁸⁹

Major root crops

Major root crops in Tanzania are cassava and sweet potato. FAO estimates show that about 58.6 million tonnes of cassava and sweet potato were produced between 2015 and 2019. Cassava production was highest in 2019 and lowest in 2017, while sweet potato production was highest in 2017 and lowest in 2019. Overall, cassava was a highly produced root crop compared to sweet potatoes between 2015 and 2019. The following figure shows tonnes produced for the period under review.

Figure 5 Production of major root crops, 2015–2019



Source: Authors' calculation and representation based on <https://www.fao.org/faostat/en/> (2020).

Figure 5 shows that cassava outperformed sweet potatoes for the period under review. The highest production of cassava was in 2018, with at least 8.4 million tonnes, and the lowest production was in 2017, with 4 million tonnes. The highest production of sweet potatoes was in 2019, with 5.4 million tonnes, and the lowest in

2015, with 3.4 million tonnes. Comparing 2015 to 2019, cassava production increased by 39%. Sweet potatoes increased by 14% in the same period.

¹⁸⁹ www.fao.org/fileadmin/user_upload/ivc/PDF/SFVC/Tanzania_rice.pdf

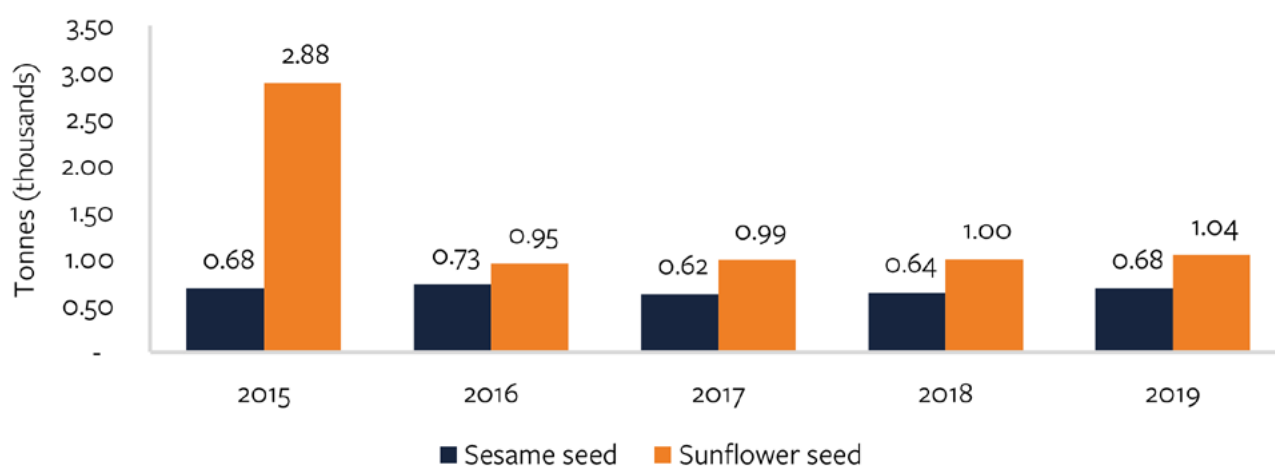
According to Tanzania Investment, cassava demand in Tanzania ranges between 530,000 tonnes and 640,000 tonnes per year.¹⁹⁰ Based on analysis of cassava production between 2015 and 2019, supply exceeded local demand for the crop. However, global demand was not met because supply was insufficient to meet these demand levels, and the product did not meet required international standards,

including producing crops that are free from contamination, pesticide residues and heavy metals, as well as packaging.

Oilseeds and legumes

Sesame and sunflower are the major oil seeds produced in Tanzania. About 10.2 million tonnes of sesame and sunflower seed were produced between 2015 and 2019. Figure 6 shows tonnes of oil seeds produced between 2015 and 2019.

Figure 6 Production of oil seeds from 2015 to 2019



Source: Authors' calculation based on FAO (2020).

Sunflower seeds outperformed sesame seeds between 2015 and 2019. The highest production of sunflower seeds was in 2015, with at least 28 million tonnes, and the lowest was in 2016, with 730,000 tonnes. The highest production of sesame seeds was in 2016 with 1 million tonnes and the lowest in 2017 with 620,000 tonnes. Comparing 2015 to 2019, the data shows that sunflower seed production decreased by 63.9%, while sesame seed production did not change over the period.

There is no publicly available data about demand for free edible cooking oil produced from sunflower and sesame seeds. It is estimated that Tanzania's minimum national demand for edible oil is about 219,000 tonnes per year. In comparison to data calculated from FAO (2020), the estimates of local demand for oil seeds is below supply levels. This further suggests there is over-production of sunflower and sesame seeds for the period under review. It is therefore important for the government to increase efforts to find markets for cooking oil produced from sunflower and sesame

¹⁹⁰ www.tanzaniainvest.com/cassava

seeds. China would be a good target market since it is interested in increasing investment in and exports from Tanzania.

Production of beans

The annual agriculture sample survey for the year 2016/2017 shows the area planted with beans in Tanzania was 732,531 hectares (ha), of which 732,495 ha (99.9%) were in mainland Tanzania and 37 ha (0.1%) in Zanzibar.¹⁹¹ The report shows that, in the Tanzanian mainland, Kagera Region had the largest area planted with beans (124,142 ha; 16.9%), followed by Kigoma (99,753 ha; 13.6%) and Manyara (97,567 ha; 13.3%). In Zanzibar, two regions were growing beans, Kaskazini Unguja Region (30 ha; 72.0%) and Kusini Pemba (7 ha; 28.0%).

The harvested area for beans was 605,751 ha of which 605,722 ha (99.9%) were in mainland Tanzania and 30 ha (less than 1%) in Zanzibar. In mainland Tanzania, Manyara Region (93,030 ha; 15.4%) had the largest harvested area of beans, followed by Kagera (88,672 ha; 14.6%) and Kigoma (87,589 ha; 14.5%). In Zanzibar, Kaskazini Unguja Region had a harvested area of 30 ha for beans.

The survey shows that total production of beans in Tanzania was 378,893 tonnes, of which 378,890 tonnes (99.9%) were in mainland Tanzania and three tonnes in Zanzibar. The average yield of beans was 0.6 tonnes/ha in mainland Tanzania and 0.1 tonnes/ha in Zanzibar. In mainland Tanzania, Kigoma Region had the highest bean production, with 71,812 tonnes (19.0%) and yield of 0.8 tonnes/ha, followed

by Kagera (58,068 tonnes; 15.3%) with a yield of 0.6 tonnes/ha and Manyara (52,647 tonnes; 12.8%) with yield of 0.6 tonnes/ha. In Zanzibar only 3 tonnes of beans were produced at an average yield of 0.1 tonnes/ha.

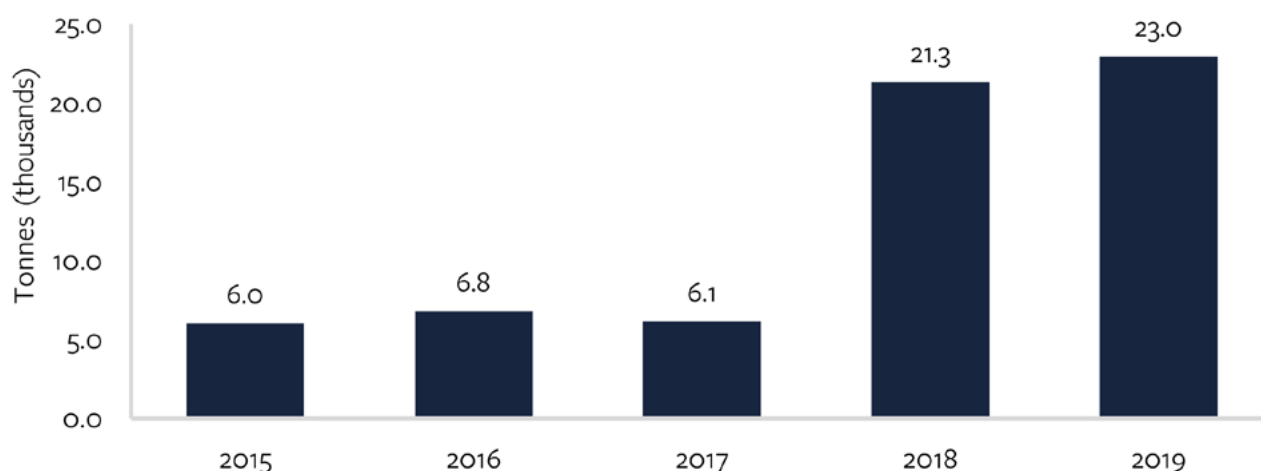
Therefore, this implies that Kagera, Kigoma, Manyara, Kaskazini Unguja and Kusini Pemba hold more potential for Chinese investment in bean production. However, some regions like Mbeya, Ruvuma, Rukwa and Iringa also hold potential for bean production, but are still under-utilised.¹⁹² In collaboration with local and international investors, the Tanzanian government needs to facilitate local farmers and agricultural cooperatives, enterprises and groups. Facilitation would be in the form of subsidises in cash or kind, such as agro-technological support to local farmers. As stated by Weil (2005), if a developing country suffers from a lack of technologies, then technology can be transferred from another country without making that country worse off. Equally, Chinese investment in bean production is likely to attract agro-technology, especially in potential areas that are still under-utilised.

Soybeans

Overall, Tanzania had an upward trend of soybean production between 2015 and 2019. High levels of production occurred in 2019 while low production levels were experienced in 2015.

191 www.nbs.go.tz/index.php/en/census-surveys/agriculture-statistics/57-2016-17-annual-agriculture-sample-survey-crop-and-livestock-final-report

192 Match Maker Associates, 2010, cited in R. Trevor Wilson J. Lewis (2015). The Maize Value Chain in Tanzania: A report from the Southern Highlands Food Systems Programme. Food and Agricultural Organization, Rome. https://www.fao.org/fileadmin/user_upload/ivc/PDF/SFVC/Tanzania_maize.pdf

Figure 7 Production of soybeans, 2015–2019

Source: Authors' calculation and representation based on FAO (2020)

Figure 7 shows approximately 23,000 tonnes of soybeans were produced (highest) in 2019 while low production was observed in 2015 with 6,000 tonnes. Comparing 2015 to 2019, the results show that soybean production increased more than two times the 2015 production rate. However, although soybean production showed an upward trend for the period under review, the highest production rate of 23,000 tonnes is still insufficient to meet local and global demand.

While there is no clear statistical record of local demand for soybeans, over 75% of rural households in Tanzania depend on beans for daily subsistence.¹⁹³ There is also high demand for soybeans in the global market. For instance, China's soybean demand in 2020–2021 is estimated at 100 million tonnes.¹⁹⁴ Thus, there is a significant demand and supply gap for soybeans in Tanzania. There is a potential market opportunity for this commodity if the government of Tanzania increases efforts to utilise it.

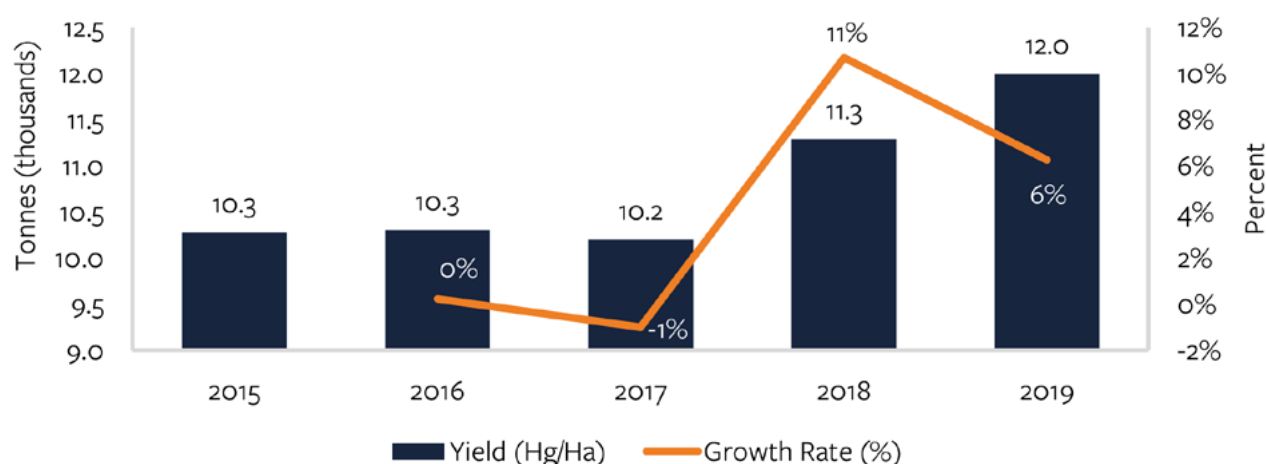
193 www.sweetpotatoknowledge.org/wp-content/uploads/2016/07/Annex-14.-Seed-Systems-for-CIAT-Iron-Rich-Beans.pdf

194 www.spglobal.com/platts/en/market-insights/latest-news/agriculture/122820-commodities-2021-chinas-soybean-demand-set-to-remain-strong-in-2021-on-swine-herd-recovery-from-asf

Figure 8 shows that, throughout the five years under review, soybean productivity showed an upward trend. The average growth rate of productivity in Tanzania in terms of soybean yield in hectogram per hectare in 2015–2019 was 4%. The highest growth

rate of soybeans was 10.7% in 2018 and lowest in 2017, when it decreased by 1% compared to 2016. This suggests that demand for soybeans from China will motivate farmers (if well-coordinated) to increase production to meet market demand.

Figure 8 Yield of soybeans (hectogram per hectare (Hg/Ha))



Source: Authors' calculation and representation based on FAO (2020)

Table 5 shows actual and potential production of soybeans by region. Based on available MMA¹⁹⁵ data, actual production of these regions has varied over the selected years. Besides, all the selected regions have not reached their optimal level of production. This is evidenced by high potential areas (ha) and expected tonnes that would be produced if fully utilised. For instance,

the highest actual production of soybeans in Iringa in 2006 was 940 tonnes compared to 200,000 tonnes per 130,000 ha. Equally, in Ruvuma, the highest level of production for the period under review was 800 tonnes in 2010. Mbeya appears to have more potential compared to Rukwa, Ruvuma and Iringa, with potential area estimated at 200,000 ha and yielding potential at 300,000 tonnes.

¹⁹⁵ Match Maker Associates, a business consultancy invested in agricultural entrepreneurship projects in Tanzania and other countries in Africa.

Table 5 Production of soybeans by region

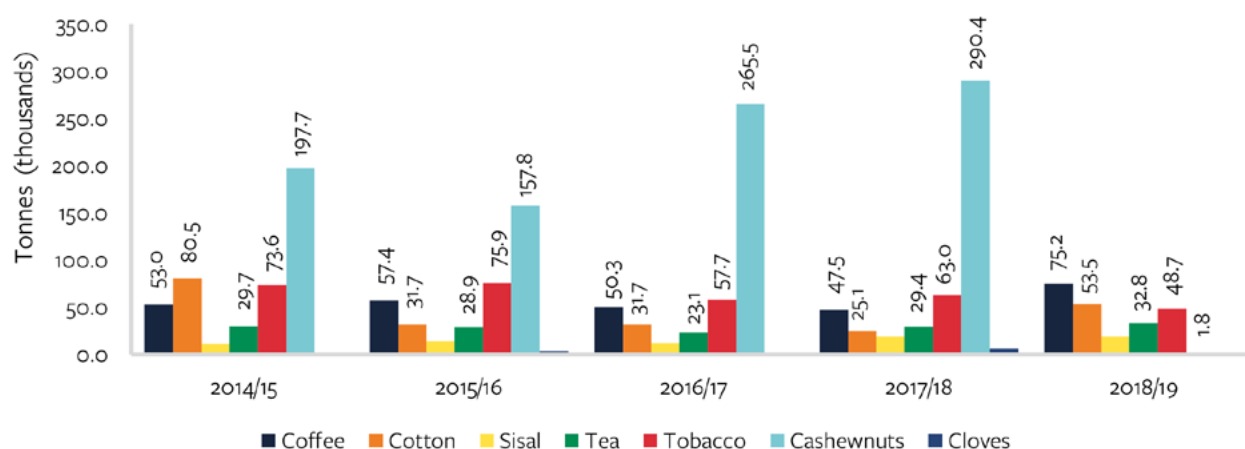
Region	Actual production		Potential	
	Year	Output (tonnes)	Area (ha)	Output (tonnes)
Mbeya	2005	533	200,000	300,000
Rukwa	2005	11	150,000	225,000
Ruvuma	2005	499	150,000	225,000
	2009	332		
	2010	800		
Iringa	2005	105	130,000	200,000
	2006	940		
	2010	120		

Source: MMA, 2010 (cited in FAO, 2015)

In addition to the southern regions described in Table 5, other regions with favourable conditions include Morogoro, Lindi and Mtwara, and the northern regions of Arusha, Kilimanjaro and Manyara.

Cash crops

Coffee, cotton, sisal, tobacco, cashew nuts and cloves are the major cash crops produced in Tanzania. The Bank of Tanzania has reported volumes of cash crops produced between the financial years 2014/2015 and 2018/2019. Overall, cashew nuts have been the dominant cash crop despite a sharp decline for the year 2018/2019. Cloves and sisal are the lowest performers among cash crops in Tanzania. Figure 9 shows production of cash crops for five years.

Figure 9 Volume of cash crops exported in tonnes, 2014/16–2018/19

Source: Authors' calculation and representation based on FAO (2020)

Figure 9 shows the highest exports of cashew nuts was in 2017/18, with 290.4 million tonnes, and the lowest in 2018/20, with 1.8 million tonnes. Comparing the 2014/15 and 2018/19 data, cashew nut exports decreased by 99% in 2018/19 compared to 2014/15.

Similarly, the highest export of tobacco was in 2015/16, with 75.9 million tonnes, and the lowest in 2018/19, with 48.7 million tonnes. In comparison, exports of cashew nuts declined by 33.8% in 2018/2019 compared to 2014/15.

Exports of cotton have also fluctuated over the period under review. The highest export of cotton was in 2014/15, with 80.5 million tonnes, and the lowest in 2017/18, with 25.1 million tonnes being exported. Exports of cotton declined by 53.5% in 2018/2019 compared to 2014/15.

The highest exports of cloves was in 2017/18 with 6.2 million tonnes and the lowest in 2018/19 with 0.2 million tonnes. In comparison, production of cloves decreased by 58.3% (from 0.6 to 0.2 million tonnes) in 2018/2019 compared to the year 2014/15.

Coffee is another major cash crop. In the five-year period, the highest tonnes exported was 75.2 million tonnes for the year ending 2018/19. The lowest export was 47.5 million tonnes in the year ended 2017/18. By the end of 2018/19, exportation increased from 53.0 to 75.2, equivalent to an 41.95% increase.

Tea exportation experienced its highest rate in 32.8 tonnes for the year 2018/19 and lowest in 2016/17, with 23.1 million tonnes. In terms of change, exportation of tea increased from 29.7 million tonnes for the year ended 2014/15 to 32.8 million tonnes for the period ended 2018/19, equivalent to approximately 10.3% increase for the period under review.

Sisal exportation has also varied throughout the period under review, experiencing an upward trend. The highest exportation was in 2018/19 with 19 million tonnes and lowest in 2016/17 with 12 million tonnes. Exportation of sisal increased from 11.4 to 19 million tonnes between 2014/15 to 2018/19, an increase of 65.78%.

The global market for cash crops includes Europe, Asia and America. India is the major importer of cashew nuts from Tanzania, with about 80% of cashews exported to India.¹⁹⁶ Germany, Russia and Poland are the top export destinations for Tanzanian tobacco. Between 2017 and 2018, China imported about 622 tonnes and 256 tonnes were exported to China.¹⁹⁷ In the same period, China imported 86 tonnes in 2017 and 33 tonnes in 2018.¹⁹⁸ This shows that China does not import a large volume of cash crops from Tanzania, as evidenced by the small quantity (less than 1,000 tonnes) of coffee and tea annually. The same applies to cashew nuts; China is

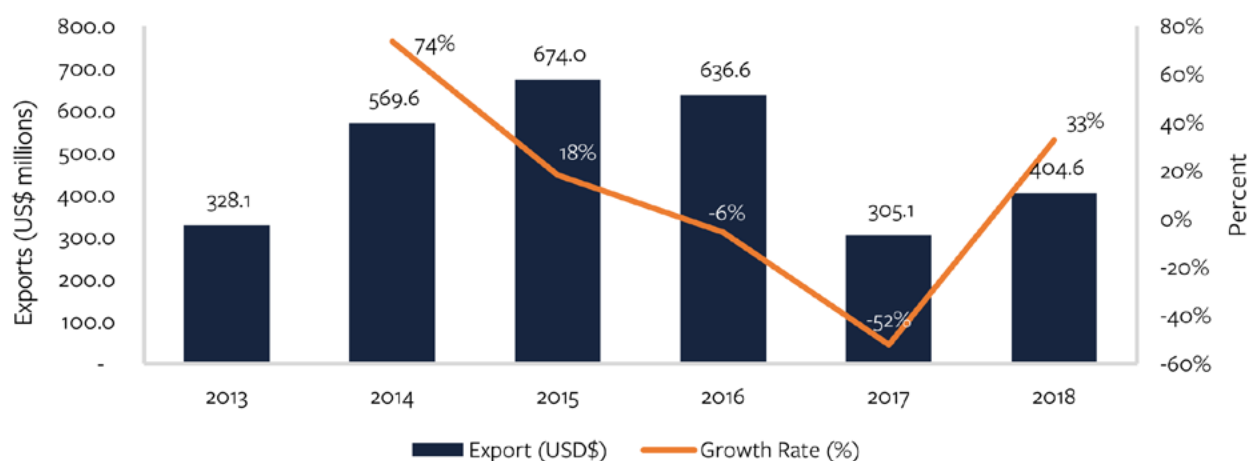
not among the major importers of cashew nuts from Tanzania. However, in mid-2020 Tanzania exported about 1,000 tonnes of cashews to China.¹⁹⁹

Agricultural exports

Export food products

Tanzania's food products exports show variation within the period under review. There was an upward trend of food exports from 2013 to 2015 and a decline in the following years, from 2015 to 2018, as shown in Figure 10.

Figure 10 Tanzania food exports, 2013–2018



Source: Authors' calculation and representation based on WITS (2020)

As indicated in figure 10, the average export growth rate of food products between 2013 and

2018 increased by 18%. The growth rate of export of food products was high (74%) in 2015 and decreased by 52% two years later (in 2017).

¹⁹⁶ www.tanzaniainvest.com/crops

¹⁹⁷ www.trademap.org/Bilateral_TS.aspx?nvpm=1%7c834%7c%7c156%7c%7c09%7c%7c%7c4%7c1%7c1%7c2%7c2%7c1%7c1%7c2%7c1%7c1

¹⁹⁸ www.trademap.org/Bilateral_TS.aspx?nvpm=1%7c834%7c%7c156%7c%7c09%7c%7c%7c4%7c1%7c1%7c2%7c2%7c1%7c1%7c2%7c1%7c1

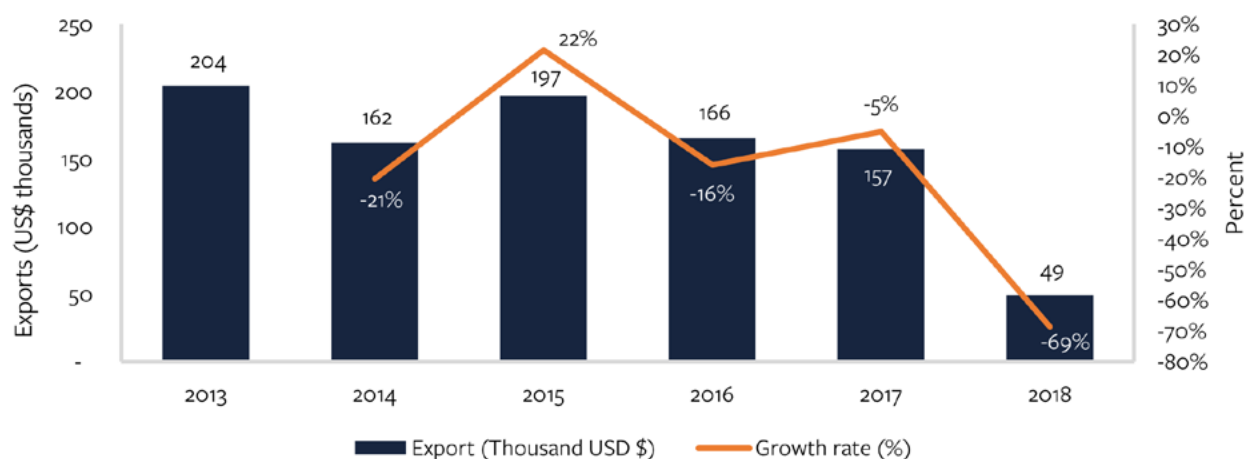
¹⁹⁹ <https://allafrica.com/stories/202010120067.html>

This implies that exports of food products fluctuated significantly over the period under review.

Export of agricultural raw materials

WITS shows fluctuations in the export of agricultural raw materials between 2013 and 2018. The highest exports were recorded in 2013 (\$204 million) compared with 2018, which experienced the lowest exports, estimated at \$49.4 million. Figure 11 shows the annual export performance of agricultural raw materials.

Figure 11 Tanzania agricultural raw materials exports from 2013 to 2018



Source: Authors' calculation and representation based on WITS (2020)

Figure 11 highlights the export growth rate of agricultural materials between 2013 and 2018, which on average decreased by 18%. The growth rate of export of agricultural materials was high in 2015 (at 22%) and decreased by 69% in 2018. Since net exports are negative, China's interest in and move to buy soybeans from Tanzania will likely improve trade by increasing exports of agricultural materials to this new market.

Export of soybeans

Soybeans contribute to foreign currency. Between 2014 and 2018, exports of soybeans demonstrated an upward trend that made this an important strategic crop for the development of both farmers and the wider economy. Table 6 shows exports of soybeans between 2014 and 2018.

Table 6 Tanzania soybeans exports

Year	Value (\$)
2014	192,611
2015	n.a.
2016	395,009
2017	1,608,976
2018	9,357,695

Source: Annual International Trade Statistics | trendEconomy@2020. n.a.: data not available.

As Table 6 indicates, Tanzania exported soybeans worth \$9.35 million in 2018.²⁰⁰ Export from Tanzania increased over five times (equivalent to 482%) compared to the previous year, 2017. Furthermore, within the five years under review, export of soybeans increased 48 times in 2018 compared to 2014. In 2018, the report shows Tanzania exported these soybeans to the following countries:

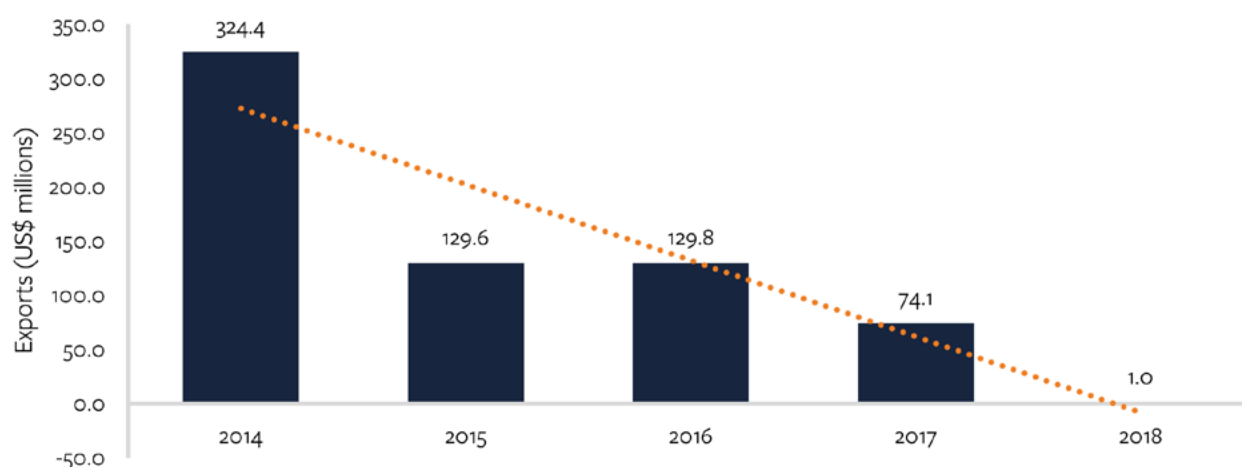
- Italy with a share of 56% (\$5.32 million)
- South Africa with a share of 9.29% (\$869,000)
- Netherlands with a share of 8.09% (\$757,000)
- Turkey with a share of 4.31% (\$403,000)
- India with a share of 4.3% (\$403,000)
- Kenya with a share of 4.17% (\$390,000)
- USA with a share of 4.08% (\$382,000)
- Belgium with a share of 3.39% (\$317,000)
- Spain with a share of 3.38% (\$317,000)
- Zambia with a share of 2.06% (\$192,000)

This further implies that a trade agreement between China and Tanzania will significantly increase the market for soybeans and eventually increase foreign currency to the economy. On the other hand, China's entry will stimulate local production and completion among the recipient countries mentioned above.

Export of sesame

Annual international trade statistics show the export of sesame between 2014 and 2018 experienced a downward trend. The year 2014 recorded the highest exports, while 2018 experienced the lowest exports. Figure 12 shows annual export performance of sesame.

200 <https://trendeconomy.com/data/h2/Tanzania/1201>

Figure 12 The value of Tanzanian sesame exports, 2014–2018

Source: Annual International Trade Statistics | trendEconomy@2020

As shown in Figure 12, in 2014 sesame export was highest, estimated at \$324.4 million, while the lowest export was in 2018, estimated at \$1 million. In comparison, sesame exports decreased by 99.7% in 2018 compared to the export realised in 2014.

Main constraints

As evidenced from the FAO and WITS data, Tanzania's farming system is characterised by inadequate supply, attributed to low and fluctuating production. FAO (2015) has shown that a smallholder in Tanzania, farming on average 0.9 hectares, produces food worth \$780 per hectare, as compared to \$281 per hectare generated by a larger farmer.²⁰¹ Oxford Business Group notes that smallholder farmers struggle to access economically viable technology, adequate storage facilities, markets and credit.²⁰²

The Oxford report also highlights the inverse relationship between farm size and output, which

is still a heated debate in Tanzania. Two factors resulted in this inverse relationship: land cultivated by smallholder farmers is usually high in quality; and by employing more inputs per hectare, farmers engage more workers per hectare and smaller farm size allows for easier supervision. Besides, these workers, being family, are motivated to work and this gives them a productivity advantage over larger farms. The area warrants further research and may also vary across different crops.

5.2 Political and economic ties

Tanzania's adoption of a socialist model following independence in 1961 made China a fitting development partner given its ideological affinity. 'Tanzania, a frontline state in the liberation of Africa, naturally linked itself with China, the leader in the Third World and supporter of anticolonial movements. Numerous bilateral agreements were reached between the two countries, with Tanzania

201 <http://www.fao.org/3/i5251e/i5251e.pdf>

202 <https://oxfordbusinessgroup.com/overview/growth-ground-already-largest-economic-sector-agriculture-continues-see-positive-trends-many-areas>

becoming one of the biggest recipients of Chinese aid in Africa', wrote Chinese-educated Tanzanian scholar Muhidin Shangwe in 2017.²⁰³

In general, trends suggest that China sees Tanzania as a strategic launchpad for a larger regional, even continental, agenda of South–South cooperation, including in agriculture.²⁰⁴ Tanzania was one of

five African countries visited by Chinese Minister of Foreign Affairs Wang Yi in January 2021. During the visit, Yi announced a seven-point plan for upgrading China–Africa cooperation in health, industrialisation, regional connectivity, agriculture, digitisation, the environment, and military and security matters. Box 3 presents an overview of recent official visits between China and Tanzania.

Box 4 Recent official contacts between China and Tanzania

1. 24–25 March 2013: President Xi visits Tanzania on his inaugural visit to Africa as head of state
2. 2 September 2018: Tanzanian Prime Minister Kassim Majaliwa visits Beijing to take part in the Forum on China-Africa Cooperation (FOAC)
3. 4 February 2020: Chinese Foreign Minister Wang Yi and Tanzanian Foreign Minister Palamagamba Kabudi speak by phone, amid the Covid-19 outbreak in China
4. 15 December 2020: Chinese President Xi and re-elected Tanzanian President Magufuli speak by phone
5. 8–9 January 2021: Chinese Foreign Minister Wang Yi visits Tanzania on 2021 new year visit to the continent

With regard to agriculture specifically, China pledged to 'step up agricultural cooperation with Africa, including on food production, storage and transportation. China is prepared to help Africa enhance food security, in a joint effort to build a bumper African harvest'.²⁰⁵ In the context of the visit, China's Ambassador to Tanzania, Wang Ke, stated that 'Tanzania is a good partner of China in agricultural cooperation. We have seen an increase in Chinese investment in Tanzania's agricultural sector and more Tanzanian agricultural products are entering the Chinese market'.²⁰⁶

For its part, Tanzania is seeking to increase productivity and exports, potentially presenting an opportunity for China to export its model of development given China's recent success therein. Shortly after Yi's visit, Chinese Ambassador Wang Ke delivered an online speech noting that 'As a country of 1.4 billion people, China has accumulated rich experience in agriculture and rural development and has made great progress in poverty reduction. China is ready to share with Tanzania its experience in agricultural development, food security and poverty alleviation'.

203 Shangwe, M. J. (2017). China's Soft Power in Tanzania: Opportunities and Challenges. *China Quarterly of International Strategic Studies*, 3(01), 79–100 (p.82).

204 <https://news.cgtn.com/news/2021-01-08/Wang-Yi-hails-the-four-important-consensuses-reached-with-Tanzania-WTlqxkNmhO/index.html>

205 www.focac.org/eng/ttxsy/t1845467.htm

206 www.chinadaily.com.cn/a/202101/14/WS60003900a31024adobaa2boa.html

The formal institutional foundations of Sino–Tanzania economic relations are relatively broad (Table 7). A bilateral investment treaty is in place for disagreements between local and international investors, though it has not

been put to the test. The absence of a double-taxation treaty may hinder long-run investment growth if this substantially increases the cost of doing business.

Table 7 Bilateral economic agreements signed between China and Tanzania

Agreement	Status
Bilateral Investment Treaty	Signed on 24/03/2013, and in force since 17/04/14.
Currency Swap Agreement	Signed a currency swap agreement; one of 14 African countries in September 2018 meeting as central bank reps to discuss greater RMB use.
Double Taxation Agreement	No.
Least Developed Country (LDC) Trade Preferences	Yes.
Phytosanitary Agreement	Under discussion for selective agricultural crops.

Sources: <https://investmentpolicy.unctad.org/international-investment-agreements>; <http://www.chinatax.gov.cn/>; <https://unctad.org/topic/least-developed-countries/list>; <http://www.moa.gov.cn/>;

As an LDC Tanzania has qualified to utilise China’s related trade preferences since 2015, with adjustments to expand the scope of application.²⁰⁷ The material value of these trade preferences for Tanzania has not been identified.

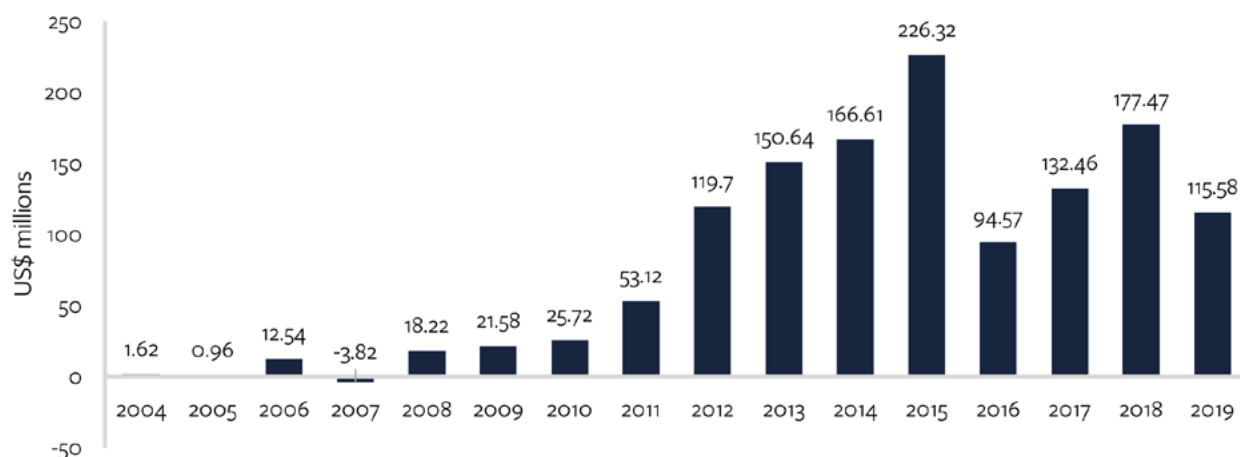
Institutionally, Tanzania is also geographically uniquely placed. It is the only country in East and Southern Africa that is a member of both the East African Community (EAC) and the Southern African Development Community (SADC). The EAC has its headquarters in Arusha in north-east Tanzania. China has a representative to the EAC, via its embassy in Tanzania’s capital, Dodoma, and in October 2019 signed a framework agreement with the SADC on ‘Economy, Trade, Investment and Technical Cooperation’.

Investment, trade and aid

Investment: China has a long history of investing in Tanzania and is currently, in terms of annual flow, Tanzania’s largest foreign investor. China’s FDI in Tanzania has trended upwards for the past 15 years, with a peak of \$226 million in 2015 – the final year of the Kikwete presidency, a regime that enjoyed close relations with China (Figure 13).²⁰⁸

²⁰⁷ www.un.org/ldcportal/preferential-market-access-chinas-dfqf-scheme-for-ldc-products/

²⁰⁸ <https://allafrica.com/stories/202010120067.html>

Figure 13 China–Tanzania foreign direct investment, 2004–2019

Source: The Statistical Bulletin of China's Outward Foreign Direct Investment, published by China's MOFCOM

Tanzania's wealth of resources means that China's relative interest in the agricultural sector has been modest compared to other sectors like manufacturing, mining and construction. Of 940 projects executed (supported) by China in Tanzania over the last three decades (1990–2020), to the value of \$7.5 billion, just 26 were in the agricultural sector, in aggregate worth \$359.58 million.

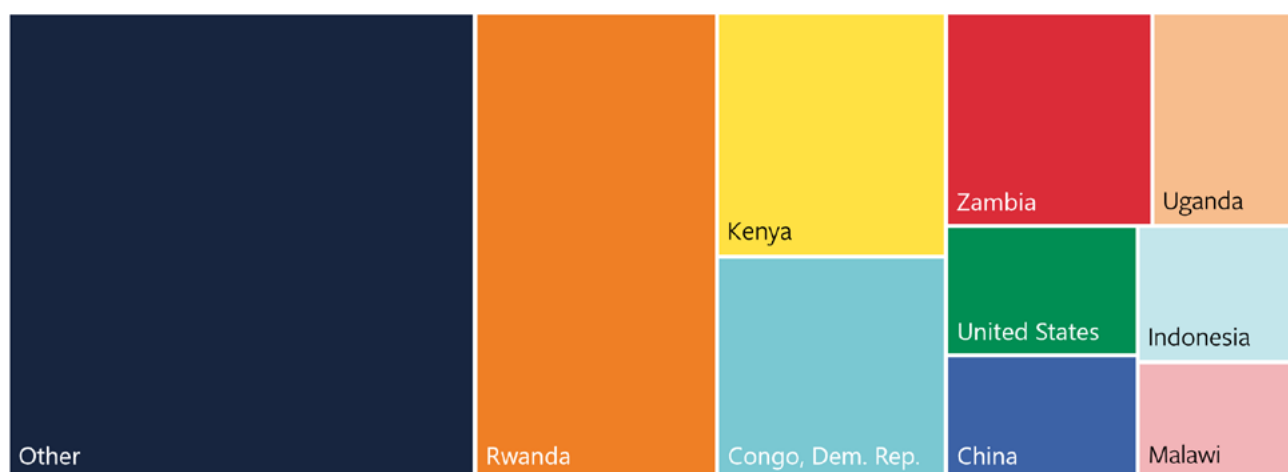
Trade: In 2019 total import and export trade between China and Tanzania was \$4.179 billion, up 5.1% year-on-year, according to Chinese data. Chinese exports totalled \$3.811 billion, up by 6.4% year-on-year. Imports totalled \$367 million, down 6.1% year-on-year. Since 2014, products that have been added to Tanzania's list of exports to China include cassava, fish and soybeans, to the value of some \$145 million.²⁰⁹

Currently, China buys some 4% of Tanzania's exports, comprising mostly mineral products, sesame, cashew, cotton and other agricultural products, fishery products, spices and spice products and raw hides and skins (Figure 14).²¹⁰ Some 80% of Tanzania's sesame crop is exported to China, earning \$164.5 million in 2019.²¹¹ Chinese exports comprise mostly mobile phones, domestic appliances, mechanical appliances and parts, auto parts, building materials, footwear and clothing.

209 Tesha Gloria (2021). China has invested in Projects worth 7.5 billion USD in Tanzania, The Daily News, March 7. Swahili: Tesha Gloria (2021). China yawekez Tanzania Miradi ya Dola bil 7.5/-. The Daily News, March 7.

210 <https://allafrica.com/stories/202010120067.html>

211 <https://allafrica.com/stories/202009080742.html#:~:text=China%20is%20still%20the%20world's,of%20the%20world's%20sesame%20imports.&text=For%20instance%2C%20in%20July%202019,sold%20to%20the%20same%20market.>

Figure 14 Destination of Tanzanian exports , 2018

Source: WITS (2021)

Tanzania seeks a more favourable trade balance and structure in trade with China. As Tanzania's ambassador to China put it in late 2020: 'For Tanzania, for every \$1 of goods we export to China, we usually import \$10 of goods from China. That compares to a trade balance of about 1: 1.8 globally. To address this challenge, we are shifting the composition of our trade towards more added value products – less raw materials than processed industrial and consumer goods'.²¹²

Aid: The late President Magufuli indicated a relatively favourable opinion of Chinese aid, at least relative to aid from Western countries:

'The thing that makes you happy about their [China] aid is that it is not tied to any conditions. When they decide to give you, they just give you', Magufuli is credited with saying.²¹³

China does not release official bilateral aid data. It seems, however, that a sizeable share of China's aid to Tanzania is focused on elevating agricultural potential. For example, in March 2018 an MoU was signed between China Agricultural University (CAU) and Morogoro's Sokoine University of Agriculture (SUA) on joint agricultural research and development, including scholarships for staff and students.²¹⁴ The aim is 'big harvest from small technologies' – to support Tanzanians to benefit from Chinese agricultural technology so as to improve their own grain production and food security (see Table 1 for related Tanzanian socioeconomic indicators).

We have come to launch a new program that will help young farmers to increase and double their productivity and this is a Chinese government program to support agricultural development in Tanzania but also SUA will benefit from training and research ...
– Prof. Sun Qixin.

²¹² <https://allafrica.com/stories/202010120067.html>

²¹³ www.bbc.com/news/world-europe-46364342

²¹⁴ www.sua.ac.tz/news/sokoine-university-agriculture-signs-mou-china-agricultural-university%C2%A0

The agreement between SUA and the China Agricultural University will help to improve training for our students and smallholder farmers through the establishment of a centre which will be used to teach agricultural technology to our students and farmers around the university – Prof. Chibunda²¹⁵

Morogoro Province has a longer standing maize production cooperation project with China also. This has helped improve agricultural productivity and output, including lowering production costs for corn, improving agricultural productivity and increasing farm income, according to the Governor of Morogoro Province, Roata Sanare.²¹⁶

In a second example, the Tanzanian Ministry of Agriculture is working with Tanzania agricultural institutes in Morogoro, Mebya, Arusha, Tanga, Mwanza, Tabora, Bukoba and Kibaha with a focus on seed and crop varieties.²¹⁷ These crop varieties include cereals, roots and tubers, grain legumes, oil seed, banana, cotton, coffee, tobacco, sisal, cashew, sugarcane and horticultural crops. However, especially where modified and patented, these are an ongoing area of contention. One African media piece even argued that China has learned the hard way not become dependent on foreign seeds – with the implication that Tanzania should learn too, and hence not become dependent on China. Hence, the long-run net impact of this type of cooperation is difficult to assess.²¹⁸

5.3 Opportunities

During Yi's visit in January 2021, late Tanzanian President John Magufuli was reported in the Chinese media as saying that Tanzania is ready to deepen cooperation with China, including expanding exports, attracting more investment and positioning itself as a gateway for Chinese enterprises to Eastern and Southern African markets.²¹⁹ Situated on the Indian Ocean, Tanzania shares borders with Mozambique, Malawi, Zambia, the DRC, Rwanda, Burundi, Uganda (Lake Victoria and Mutukula) and Kenya. Of these, only Mozambique and Kenya are not landlocked. As such, Tanzania is an important geographic location in terms of facilitating trade and broader investment growth – a point that is understood by China.

Following Yi's visit China specifically promised the following to further agro-processing capacities in Tanzania: 1) China will support accelerated negotiations with relevant authorities on inspection and quarantine requirements regarding access to China for higher-quality Tanzanian agricultural products; 2) China will use its own international platforms to actively promote high-quality Tanzanian products and tourism services to Chinese consumers; 3) China will encourage more Chinese enterprises to invest in agro- and mineral processing in Tanzania and develop Tanzania as a springboard for China into Eastern and Southern Africa. China also promises to encourage cooperation on e-commerce, mobile payments and another new and innovative areas.²²⁰

215 www.sua.ac.tz/news/sokoine-university-agriculture-signs-mou-china-agricultural-university%C2%A0

216 People-to-people ties is one of the five connectivities of the Belt and Road Initiative.

217 See www.tari.go.tz.

218 <https://allafrica.com/stories/202101190142.html>

219 <https://news.cgtn.com/news/2021-01-08/Wang-Yi-hails-the-four-important-consensuses-reached-with-Tanzania-WTlqxkNmhO/index.html>

220 <https://www.ippmedia.com/en/news%20china-widening-local-agro-export-volumes>

In late 2020, China and Tanzania signed an MoU toward developing economic ties, which has not been published. The contents of the MoU may include details of areas of intended collaboration. It is not known how Magufuli's death in March 2021 will impact these directions, although that his deputy assumes the leadership may imply an element of consistency across leaders.

Crops

Crops with potential for increased exports to China include the following:

Cassava: In 2019 Tanzanian media reported that cassava farmers in Tanga Region had secured a contract with Chinese buyers for some 2 million tonnes annually (against total annual Chinese demand of 20 million tonnes). The deal followed an agreement between regional and district leaders and the Tanzania Agricultural Export Processing Zone (TAEPPZ) company.

In the past there have been issues with Tanzania's cassava reaching the required quality standards. This latest Chinese deal apparently commits the investors to purchasing the promised quantities over the next five years. TAEPPZ has also undertaken to assist Tanzanian farmers in developing cassava production, including helping with access to inputs.²²¹

Cassava is an important subsistence crop in Tanzania, and even considered a 'famine reserve' when staple cereals fail. In addition to human consumption cassava is used for animal feed and alcohol brewing.²²² Exporting cassava to China could thus be politically sensitive.

Soybeans: In light of the China–USA trade dispute, there has been media attention brought to China's interest in diversifying its soybean source markets. For Tanzania a baseline corresponding issue is which seeds will be used for such crops, and what would be the cost of ensuring access to them over time. Otherwise, recent discussions in parliament point to rapid evolution of potential for greater soybean trade.

Specifically, in the 3rd meeting of the 12th Parliament (2nd seat) that was held on 31 March, 2021 in Dodoma an issue of soybeans demand and supply was raised through a question-and-answer session. The following are quotations from Hon. Pole Pole Hamphrey, a member of Parliament, and Hussein Mohammed Bashe, the Deputy Minister, Ministry for Agriculture:²²³

Soybeans is one the most imported crop, and in a year, China use \$ 40 billion dollar to import Soybeans. So far China imports soybeans from 12 countries. Very recently, Tanzania is the 12th country that has been allowed to export Soybean to China. And China has very close relationship compared to other 11 Countries. Unfortunately, local production of Soybean is very small, with average of 14 tonnes a year while we have already signed a contract of exporting 400,000 tonnes. How has the government planned to utilize this big market that will likely increase productivity to local farmers? – Hamphrey Pole Pole

221 <https://allafrica.com/stories/201902260759.html>

222 <https://allafrica.com/stories/201902260759.html>

223 Pole Pole, H. and Bashe M.H. Soybeans' supply to meet China's demand [Video]. YouTube, 31 March ([/www.youtube.com/watch?v=oh_hp2YukM](https://www.youtube.com/watch?v=oh_hp2YukM))

It is true that recently we have signed a contract of supplying soybeans to China. I would also like to inform the public that, the first consignment of exporting 140 tonnes has been exported this March (2019). The first initiative we have made is to task TARI (Tanzania Agricultural Research Institute) and ASA (ASA Microfinance Tanzania Limited) to increase availability of seeds. In the next financial year, we will set budget for support 13 ASA's farms and set irrigation systems to produce adequate seeds that will be supplied to other farmers. The second initiative, we have eliminated export bureaucratic procedures for farmer. Besides, because both the market and businesspeople are available, then farmers will be motivated to increase productivity by themselves after receiving improved seeds. Third Initiative, we have opened the door for re-export. In this first year, when we build capacity and increase availability of improved seeds, we have allowed local businesspeople to import soybeans from neighbouring countries and re-export them to China. If re-export will not be arranged, then we will lose the market. We have planned well from next year; we will produce sufficient seeds and make contractual arrangement between local farmers and businesspeople without any cost to the farmers through our ministries: Ministry of Industries and Ministry of Agriculture. – Hon. Hussein Mohammed Bashe

As indicated from the above quotes, productivity of soybeans in Tanzania is still low. This is also evidenced by the number of tonnes (140) exported in March 2021, which was also small. This further attracts investment and agrotechnology support that will maximise local production to farmers

in the country. On one hand, trade agreement between China and Tanzania will likely significantly increase the market for soybeans and eventually increase foreign currency to the economy. On the other hand, China's entry will instigate secondary effects, including stimulating local production and competition among the recipient countries mentioned above. These net impacts may best be forecast ahead of time and considered in related decision-making and policy-planning.

Cashew nuts: Tanzania has stepped up promotion of cashew nuts to the Chinese market, since 2018 especially. Over the first half of 2020 Tanzania exported some 1,000 tonnes of cashews to China.²²⁴ Comtrade reports total sales of some 157,726 kilograms (kg) in 2018, valued at \$377,549.²²⁵ Tanzanian authorities are working with the China Chamber of Commerce and Export of Foodstuffs, Native Produce and Animal By-Products to link Chinese buyers with Tanzanian suppliers of cashew nuts. The Chamber was set up in 1988 as a trade organisation by enterprises with the right to import and export related business activities of agricultural, forest, aquatic products, foodstuffs, native produce and animal by-produce according to the Foreign Trade Law.²²⁶ Otherwise, central authorities in China have mandated Hunan province to spearhead a China Africa Trade Initiative, and the province is also permanent host of the China Africa Economic and Trade Expo.

Coffee: In 2020 an Africa Coffee Street and African Cocoa Marketing Centre was launched in Hunan Gaoqiao Grand Market. Tanzania hopes to promote more coffee sales via these

224 <https://allafrica.com/stories/202010120067.html>

225 <https://comtrade.un.org/data/>

226 www.virtualmarket.fruitlogistica.de/en/China-Chamber-of-Commerce-for-I-E-of-Foodstuffs-Native-Produce-and-Animal-By-Products,c43713#

mechanisms, and those mentioned under ‘cashew nuts’ – the marketing approach to some extent has been bundled.²²⁷

Aquaculture: Global species database FishBase suggests that Tanzania is home to some of the world’s richest fishing grounds: more than 1,700 species are recorded as being present in the country’s waters. Tanzania’s fishing industry is reported to be worth \$4 billion, but demand outstrips catch, in part due to inadequate fishing methods.²²⁸ Tanzania is hence also an importer of fish, including from China.

Increasing the productivity of the fish catch is politically sensitive. There have, for example, been recent calls to ban imports of seafood from China (and other East Asian countries) to provide space for the local – less industrialised – industry to develop. Moreover, of the thousands of local fish species, only 17 are commercially important, 69 are found only in deep water and 171 are threatened.²²⁹ Chinese fishing fleets are known to have fished illegally in Tanzanian waters, diminishing their political appeal.²³⁰

Chinese marketing platforms (e-commerce)

As recently as January 2021 China promised to utilise its marketing platforms to facilitate trade between the two countries, especially exports from Tanzania to China. More specifically, it is interested to ‘encourage cooperation on e-commerce and mobile payments’.²³¹ Relative to Tanzania, China already has close e-commerce links with other countries in the region, Rwanda, Kenya and Ethiopia especially.

While local suppliers have been encouraged to shift from traditional marketing mechanisms, like physical and in-person marketing, to online marketing (e.g. Dr Abbas Said, daily news of January 6, 2021), there are barriers therein. For example, the huge gap between the level of adoption and familiarity with e-commerce in China and that of Tanzania. Most Tanzanian agricultural traders still rely on and are hence only familiar with physical-based sales.

There may need to be training and familiarisation of the opportunities and means of e-commerce. Perhaps Tanzania could even learn first instead from Rwandan and Kenyan farmers therein, where e-commerce platforms are helping their farmers to increase sales vis-à-vis China. In any case, intensive training may be required to optimise use of Chinese marketing platforms.

227 <https://allafrica.com/stories/202010120067.html>

228 www.theeastafrican.co.ke/tea/business/tanzania-plans-to-ban-fish-imports-from-china-1412182

229 www.theguardian.com/world/2018/sep/15/tanzania-dar-es-salaam-illegal-fishers-coral-reef-eco-system-at-risk

230 <https://news.cision.com/sea-shepherd-global/r/tanzanian-authorities-issue-over-6-million-in-fines-to-foreign-fishing-vessels-evading-inspections,c2461847>

231 www.ippmedia.com/en/news%20china-widening-local-agro-export-volumes

5.4 Barriers and risks

Production constraints

The main barrier to China–Tanzania trade is adequate supply and quality of supply. This is because the majority of the farmers practice small scale farming that is characterised by small land size (average of 0.9 ha), lack of access to economically viable technology and inadequate storage facilities.²³² Therefore, there is a potential risk of a supply-demand gap. Meeting demand from China requires an extensive investment in the local farms, which are currently characterised by low production and low production efficiency.

For example, in recent years there have been a few calls for large purchases of cassava by China, but farmers have not been positioned to respond either in time or in terms of expected quality standards.

Tanzania has also recently faced a severe shortage of quality seeds.²³³ According to reports in the Chinese media: ‘In 2019, only 71,000 tonnes of quality seeds for various key crops were produced in the country against a required demand of 186,500 tonnes of seeds annually’.²³⁴ Despite this shortage, and Tanzania’s interest in exploring new and higher-productivity seeds, and an offer from China to supply new seed alternatives, Tanzania does not wish to become dependent on foreign seeds – whether Chinese or Western.^{235 236}

Foreign investment climate

Under the late Magufuli the political climate was less accommodating to foreign investment, and tougher on issues such as tax payments and the use of local labour. The USA State Department notes: ‘Investors and potential investors note the biggest challenges to investment include difficulty in hiring foreign workers, reduced profits due to unfriendly and opaque tax policies, increased local content requirements, regulatory/policy instability, lack of trust between the Government of Tanzania and the private sector’.²³⁷ It is not yet known how the new administration will approach foreign investment.

Reputational challenges

Although China–Tanzania political ties are strong, China has also been in that firing line. Shortly after taking office in 2015 for example, Magufuli halted, or at least put on hold indefinitely for renegotiation, a major port and industrial zone project agreed under Kikwete for the coastal town of Bagamoyo, which would have been a flagship of China’s BRI. Magufuli reportedly described the terms of a related \$10 billion loan from China as something ‘only a drunkard will accept’.²³⁸ In October 2019, meantime, four Chinese nationals overseeing construction of a canal and road in Dar es Salaam were arrested and held at a police station on the grounds that the project was proceeding too

232 <http://www.fao.org/3/i5251e/i5251e.pdf>

233 http://www.china.org.cn/world/Off_the_Wire/2020-09/02/content_76660171.htm

234 http://www.china.org.cn/world/Off_the_Wire/2020-09/02/content_76660171.htm

235 <https://allafrica.com/stories/202101190142.html>

236 http://usa.chinadaily.com.cn/2013-03/26/content_16347474.htm

237 <https://www.state.gov/reports/2020-investment-climate-statements/tanzania/>

238 <https://hwnnews.in/international/drunkard-accept-terms-tanzania-president-rejects-chinas-10-bln-loan/134707>

slowly.²³⁹ It is not known how his recent passing will impact Tanzania's approach to foreign investors.

Very recently, China was praised in Tanzania for its rapid delivery of medical items after the Covid-19 outbreak turned into a pandemic. However, there has been criticism that some of these items were poor quality, and even unusable. Thus, while Tanzanians were grateful that lower-cost Chinese goods are available to them, China advanced its reputation for lower quality. One Chinese-educated Tanzanian scholar, Shangwe, writes that 'China will be compelled to address issues that tarnish its image in Tanzania, mainly illegal activities committed by Chinese nationals.'²⁴⁰

239 <https://worldview.stratfor.com/article/tanzania-takes-another-swipe-chinese-investment-foriegn-business-africa>

240 Shangwe, M. J. (2017). China's Soft Power in Tanzania: Opportunities and Challenges. *China Quarterly of International Strategic Studies*, 3(01), 79-100. (p. 100).

6 Summary

Covid-19 shocked China's agricultural supply chain at a time of rising food security fears around other factors outlined herein, including political and environmental shocks. China is taking steps to reduce food demand via a food waste minimisation campaign, and also where possible to ensure domestic agricultural production, including by establishing an enlarged seed bank and related research.

In parallel, and for reasons relating to a larger long-term economic and political agenda, China's interest to support agricultural productivity and output in poor countries is likely to have been elevated. Not only will this support respective local poverty reduction goals and meet the demands of countries confronting rapid population growth, but it is also likely to provide China with greater choice in terms of external sources of agricultural goods, as well as potential long-run investor returns.

The three countries studied here are very different, including in their ties with China in agriculture. All have potential to foster deeper agricultural ties with China for domestic consumption and for export, and with selective movement in that direction too. A number of unique barriers, however, need to be overcome in each case to push that potential forward. Let alone for reasons of economic development, but in the face of growing populations in some poor countries and in context of more unstable climatic patterns internationally, this would be particularly timely.

For each country case study, crops and products of probable unmet demand in China have been identified. In the case of Tanzania,

these include cassava, cashew nuts and coffee, alongside emerging new potential to export soybeans. For Kyrgyzstan, underlying agricultural potential is much lower. Selective fruits and products such as honey, and efforts to tap into the potential to capture niche markets in China for organic produce, appear to be areas of great potential for facilitating trade. In the first instance, however, trade-enabling institutional agreements are needed. Relations between Myanmar and China are far more intense than with the other two case study countries. The relationship also attracts far more international attention. To this point, issues in the agricultural relationship focus more on the need to improve management of existing ties than to foster the promotion of new markets.

For China, the stakeholders involved in any deepening of agricultural ties are diverse. At the government level the central government sets the tone and priorities, as well as budgets. For Myanmar and Kyrgyzstan, Myanmar in particular, the policies of the neighbouring provincial government are also important. In Tanzania's case, the central government has nominated Henan province to lead the charge in fostering growth in trade with African countries. Alongside companies that directly import agricultural produce and related outbound Chinese investors, a number of trade promotion-related organisations, including the China Chamber of Commerce and Export of Foodstuffs, Native Produce and Animal By-Products, are also important. Increasingly, e-commerce platforms will also be fundamental to fostering trade.

7 Recommendations

This study has explored China's agricultural relations with three developing countries, Myanmar, Kyrgyzstan and Tanzania. To that end, it has not, for example, studied the relative benefits of deepening ties with China over other trade partners. In the case of Myanmar

and Kyrgyzstan, a shared border suggests high levels of trade, especially agricultural trade. For Tanzania, it make more sense for local and Chinese investors to focus on advancing agricultural productivity for domestic and more proximate market exports.

7.1 General recommendations

Issue	Recommendation
Phytosanitary standards	<p>Fund an analysis of the gap between China's standards and average quality, for selective crops or generally.</p> <p>Ensure that phytosanitary requirements are available in local languages and in a format that is accessible to farmers.</p> <p>Identify red-line crops for China, both in terms of market protection and supply risk.</p>
Deepen understanding of trade promotion agencies in China	<p>For each major crop or product, in each country case, where expanding exports to China is the goal, it may be worth a more detailed report on importing and trade promotion agencies. In Tanzania the China Chamber of Commerce and Export of Foodstuffs, Native Produce and Animal By-Products is working with the agricultural sector to identify opportunities. The same organisation could be tapped by international organisations and others to enhance national agricultural trade strategies elsewhere, alongside other trade-related institutions.</p> <p>The Hangzhou-based eWTP (electronic World Trade Platform) fosters an Alibaba-centric e-commerce-based trade network. Rwandan coffee growers export coffee via this platform direct to buyers in China.</p>
Reputational risks	<p>In Myanmar it may make sense to develop a strategy for communicating reputational risks to companies, industry organisations and government. In China, cases of poor company performance, in particular in food and agriculture – such as toxicity of water-related products and milk powder quality questions – have led to negative consumer responses and high expectations of government that action will be taken.</p>
Dependence risks	<p>In this sample, Myanmar's agricultural interests are highly dependent on China, the other two countries much less so, if at all. In the case of Myanmar, dependence may be less risky were trade more formalised and regulated. This would also reduce irregular enforcement patterns on the Chinese side of the border. A study of trade complementarity and potential for Myanmar's agricultural produce may identify additional markets and products, and trade promotion agencies that can help to build new markets alongside China.</p>

Issue	Recommendation
Sub-regional marketing and development strategies for trade with China	For Kyrgyzstan and Myanmar, it may make sense to advance a regional marketing strategy within China. In the case of Kyrgyzstan, its organic produce may be better marketed to high-income consumers along China's coast. For Myanmar, agricultural relations are largely determined by what happens across the border in Yunnan. Yunnan has a Myanmar strategy, and so a deeper study into Yunnan's agricultural sector and how it might better complement Myanmar's could be useful. Trade promotion and research that explores the potential of increasing exports to other provinces might also be useful, especially if this forges new trade links.
E-commerce	Stay abreast of China's e-commerce efforts and how these can be utilised to foster international trade, for rural farmers near China's borders with Myanmar and Kyrgyzstan especially, but also for Tanzania.
Environmental risks	Development in China over recent decades has led to widespread pollution of air, water and soil. China is now pursuing a more sustainable approach to agriculture and the environment, and also seeking to reduce the use of chemicals, including fertilisers and pesticides. In the case of Myanmar, and Tanzania as a representative country in Africa, it may be useful to undertake an intensive 'lessons from' report of China's agricultural production successes and failures. In this way it may be possible to avoid many of China's mistakes. Such a report could be targeted to a particular country, and/or have sections applying to policy-makers, farmer interest groups and/or Chinese investor companies.

7.2 Country-specific recommendations

Issue	Recommendation	
Kyrgyzstan	Targeted regional strategy	Yunnan has a relatively evolved agricultural strategy for cooperation across the border with Myanmar. This is more challenging for Kyrgyzstan owing to challenges in Xinjiang, highlighting the potential importance of advancing digital platforms to shift trade beyond the border.
	Targeted product strategy	Several crops are under-developed in terms of their export potential to China, such as fruit and nuts, organic produce and honey. It may be worth focusing on particular crops and finding buyers in China to match these markets.
	E-commerce	There are many constraints to e-commerce in Kyrgyzstan, including shopping preferences and uncertainty over how to use e-commerce. Alongside this, however, there is an emerging e-commerce sector, including in the food industry. It could be possible to tap into e-commerce potential to trade some products with China, for instance by connecting honey producers to suppliers in China.
	Implement quarantine and inspection certification processes	The absence of a bilateral agreement on inspection and quarantine and mutual recognition of commercial inspection certificates is a major barrier to increased agricultural links between China and Kyrgyzstan. Although the two countries agreed an MoU on Cooperation in the Field of Conformity in 2018, no progress on implementation has been made.
Myanmar	CMEC/Belt and Road	There are potentially many spillovers to agriculture from China's infrastructure investments. Work with Chinese and Myanmar interests to ensure these are not wasted. However, if infrastructure advances ahead of policy and Myanmar's capacity to negotiate and respond, it is possible that infrastructure may undermine poorer rural interests in Myanmar rather than support them. Work to ensure that infrastructure advances help the rural poor.
	Market access	Engage with Myanmar's ASEAN neighbours and other LDCs to explore coordination on negotiating with China for expanded agricultural product access. Continue to pursue additional SPS agreements around crops currently not authorised for formal trade.

Issue	Recommendation
Tanzania	Sesame seeds are an established crop for Tanzania in terms of sale to China.
	Sesame seeds as a trailblazer
	It may be possible to utilise the same channels for other products, and to work with sesame seed suppliers to capture economies of sale. Sesame seed interests may also foster a next phase of trade, including through digital commerce.
	Pharmaceuticals
	China has expressed interest in helping to advance a pharmaceutical industry in Africa, and in Tanzania in particular. China has also invested in the African Centre for Disease Control and has promised to work on a Health Silk Road. It may be possible to link this into the agricultural sector, with a focus on investing in crops that feed into medicinal and health-related products.

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