

# China-Africa development cooperation for the agricultural value chain: Drives and approaches after COVID-19





## Abstract

This report is an outcome of the Partnership for Enhancing Export Capacity of Africa to China (PEECAC) project.<sup>1</sup>

The COVID-19 pandemic seriously disrupted global supply chains and affected movement and trade. Despite these challenges, agricultural cooperation between China and Africa has been progressing during the past few years and has developed new characteristics in the post-COVID-19 period.

This report aims to identify bilateral efforts to promote agricultural development along the value chain and to analyse trends therein. Africa's agricultural sector demonstrates huge potential, but faces numerous obstacles that require action and aid from various stakeholders, and Chinese enterprises with decades of experience operating in Africa are ready to upgrade their investments and increase collaboration.

Through surveys and interviews, we find that recent China-Africa agricultural cooperation has significantly increased the use of advanced technologies such as remote sensing, drones, gene sequencing, and renewable energy in addition to pragmatic technical improvements.

Another notable trend is that China has become a rapidly growing market for high-quality agricultural products from Africa thanks to e-commerce and an evolving culinary culture.

While this report finds a strong market momentum for further China-Africa cooperation in the agricultural sector, it also shows that specialization and coordination along the agroproduct value chain should be enhanced.

PEECAC is implemented by the International Trade Centre (ITC) in cooperation with the Department of Commerce of Hunan Province of China, the China Africa Development Fund, and Hunan Overseas Home Information Science and Technology Co. Ltd. The project aims to create jobs and reduce poverty in the eight countries, contributing to the achievement of the UN Sustainable Development Goals.

---

<sup>1</sup> The views expressed in the report are those of the project expert and the project team. It does not represent the position or views of ITC.

## Acknowledgements

I would like to thank the members of Tsinghua University Nexgen Forum, including WU Shangrun, AUSTIN Graham, CHEN Weize, CHERCHIA Elizabeth, FANG An, HAN Jia, HAN Yixiao, LU Yanjun, TANG Jiepu, WANG Shihao, WANG Xinning, XU Can, YU Kehan and ZENG Kailai.

ITC organized many online interviews and seminars with the support from the Ministry of Commerce of the People's Republic of China, the China Africa Development Fund, the Foreign Economic Cooperation Center of the Ministry of Agriculture and Rural Affairs and the Economic and commercial offices at the embassies of the People's Republic of China in African countries. Mr. Lei Ting and Ms. Hu Duanmei contributed a lot during the questionnaire development and interviews.

In addition, eight experts reviewed the first draft of the report and gave insightful suggestions for improvement. I would like to extend my gratitude to all of them, including CHEN Ying, CHENG Cheng, GENG Jianzhong, HAO Rui, MAO Xiaojing, NIE Fengying, TANG Lixia and ZHANG Haisen. I also appreciate Griffin Shea's help editing and proofreading this report.

## About the author

TANG Xiaoyang is the chair and a professor of the Department of International Relations at Tsinghua University. His research interests include political philosophy, China's engagement in developing countries and global modernization processes. He is the author of *Coevolutionary Pragmatism: Approaches and Impacts of China-Africa Economic Cooperation* (Cambridge University Press, 2020) and has published extensively on international development. He completed his PhD in the philosophy department at the New School for Social Research in New York. He earned his MA in philosophy from Freiburg University in Germany and his BA in business management from Fudan University in Shanghai. He has also worked as a consultant for the World Bank, UNDP, USAID and various research institutes and consulting companies. Before he came to Tsinghua, he worked at the International Food Policy Research Institute (IFPRI) in Washington DC.

# Contents

Abstract.....	i
Acknowledgements .....	ii
Acronyms.....	vii
Introduction .....	1
Chapter 1: Challenges and constraints in Africa’s agricultural value chain.....	3
1.1 Value chain actors .....	4
1.1.1 Seed suppliers .....	4
1.1.2 Farmers.....	4
1.1.3 Traders.....	5
1.1.4 Processors .....	5
1.2 Enabling environment .....	6
1.2.1 Infrastructure .....	6
1.2.2 Policies.....	7
1.3 Service providers .....	8
1.3.1 Chemical inputs.....	8
1.3.2 Machinery.....	8
1.3.3 Storage and logistics .....	9
1.3.4 Marketing .....	9
1.3.5 Barriers to free trade .....	10

1.3.6 Financial services.....	10
Chapter 2: Main aspects of China-Africa agricultural cooperation .....	12
2.1 Trade .....	12
2.2 Investment .....	14
2.3 Aid .....	15
Chapter 3: Changed framework for agricultural cooperation in post-COVID-19 recovery .....	18
3.1 Political context.....	18
3.2 Macroeconomic downturn and fiscal stress.....	19
3.3 Priority of agricultural development .....	20
Chapter 4: Joint efforts along the agricultural value chain .....	23
4.1 Seed innovation .....	23
4.2 Remote sensing and drones for farming .....	24
4.3 Technology training and transfer.....	25
4.4 Climate change and new energy.....	26
4.5 Food processing and preservation .....	27
4.6 Sanitary and phytosanitary issues.....	27
4.7 Trade and logistic experiments .....	29
4.8 Culinary culture and trends of Chinese consumers .....	30
4.9 Expanding e-commerce .....	31
Chapter 5: Survey of Chinese enterprises in Africa's agricultural sector .....	33

5.1 Enterprise information.....	33
5.1.1 Company ownership.....	33
5.1.2 Company size .....	33
5.1.3 Years of operation in Africa .....	34
5.1.4 Country distribution .....	34
5.1.5 Number of employees .....	35
5.2 Business operation .....	36
5.2.1 Agricultural subsector .....	36
5.2.2 Modality of engagement .....	36
5.2.3 Value chain involvement.....	37
5.2.4 Target Markets .....	38
5.2.5 Challenges in Production.....	38
5.2.6 Transportation Challenges .....	39
5.2.7 Warehousing challenges .....	40
5.2.8 Challenges in processing .....	40
5.2.9 Challenges facing trade.....	41
5.2.10 Technology application.....	42
5.2.11 Local staff training .....	42
5.3 Views on future and challenges .....	43
5.3.1 Key challenges and concerns.....	43

5.3.2 Challenges during the COVID-19 pandemic .....	44
5.3.3 Challenges posed by the Russia-Ukraine Conflict .....	45
5.3.4 Reasons for Investing in Africa .....	45
5.3.5 Key issues for strengthening China-Africa agricultural cooperation .....	46
5.3.6 Actions to be taken .....	47
5.3.7 Future expansion.....	49
Chapter 6: Conclusion and policy suggestions .....	51



## **Acronyms**

ATDC – Agricultural Technology Demonstration Centre

AfCFTA – African Continental and Free Trade Area

eWTP – Electronic World Trade Platform

FAO – Food and Agricultural Organization

FOCAC – Forum on China-Africa Cooperation

GACC – General Administration of Customs of China

GDI – Global Development Initiative

IPCC – Intergovernmental Panel on Climate Change

RMB – Renminbi

SDG – Sustainable Development Goal

SPS – Sanitary and phytosanitary

UAV – Unmanned aerial vehicle

# Introduction

Africa has great potential for agricultural development thanks to its many advantages in the agricultural sector. The continent has the youngest labour force in the world, and 11 million more young people enter the labour market every year.<sup>2</sup> The continent's arable land, relative to its population, is higher than the global average. Nearly 70% of the population live in rural areas and work in the agricultural sector in sub-Saharan Africa. However, productivity in the sector still needs to improve; it makes up only about 15% of the continent's GDP and is not sufficient to feed the population.

Attracted by the potential in Africa and driven by China's own demand for growth, Chinese enterprises have been increasing their engagement in Africa's agricultural sector during the last two decades. However, the COVID-19 pandemic seriously interrupted the cooperation between China and Africa, hindering personnel and logistics as well as causing macroeconomic downturn. How will China-Africa agriculture cooperation continue in the post-pandemic era? Can both sides reprise the strong ties of the past? Will they find new approaches and modalities according to political, economic and technological changes? This report investigates the recent development of China-Africa agriculture cooperation through surveys and interviews, and presents the latest data so that stakeholders can understand evolving trends and adjust efforts to facilitate growth.

This report analyses the challenges and opportunities along the agricultural value chain, as the development obstacles in Africa's agriculture are often systemic and interrelated. From deficiency of transport infrastructure and lack of storage to shortage of funds, limited information channels, scale-related barriers and other problems, Africa's agriculture can be improved in various ways. Due to comprehensive and intertwined challenges, many previous investment projects in this sector could not be sustained or had little impact. Chinese enterprises have a unique strength in overcoming these kinds of difficulties – not only because China has successfully boosted its domestic agriculture sector during the last four decades, but also because the number of Chinese firms working in the African market is notable. Various Chinese firms cooperate and interact with each other and African partners, contributing to solutions in different parts of the value chain.

Between October 2022 and March 2023, the research team surveyed 40 Chinese agricultural companies with operations in Africa and further interviewed a dozen of them. The study aims

---

<sup>2</sup> Alexander Ayertey Odonkor, "The Truth about Unemployment in Africa", Modern Ghana, 2021  
<https://www.modernghana.com/news/1074214/the-truth-about-unemployment-in-africa.html>

to reflect the latest development trends in agricultural cooperation, with a particular focus on value cooperation, and analyse these dynamics in depth. By identifying the emerging characteristics and remaining challenges, this report can help stakeholders and policymakers further strengthen coordination and take more targeted measures to improve collaboration.

Chapter 1 summarises the challenges along the value chain in Africa's agricultural sector. Chapter 2 briefly reviews the status of China-Africa agricultural cooperation regarding trade, investment and aid. Chapter 3 elaborates on general changes in bilateral cooperation in the agricultural sector after three years of the COVID-19 pandemic, with particular focus on geopolitical and macroeconomic contexts and policy direction. Chapter 4 addresses concrete experiments and actions taken by enterprises and government agencies along the agricultural value chain. Chapter 5 presents the results of a survey among Chinese agricultural enterprises with operations in Africa and examines their implications, followed by the concluding chapter.

# Chapter 1: Challenges and constraints in Africa's agricultural value chain

In this chapter, we use a framework for agricultural value chain analysis developed by the Food and Agriculture Organization of the United Nations (FAO). We will examine the challenges and constraints that some actors and stages are currently facing. A simplified agricultural value chain is presented in Figure 1 below:

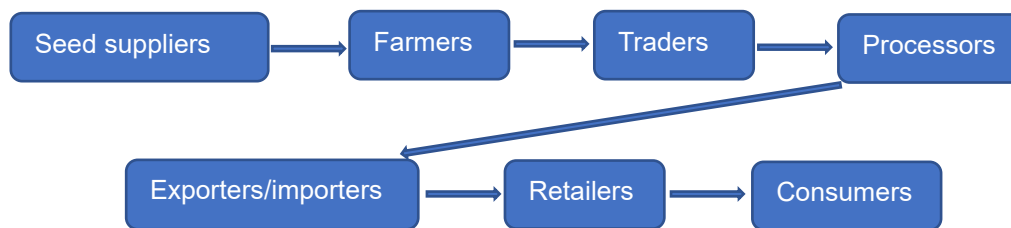


Figure 1: Simplified Value Chain. (Source: FAO)

The FAO agricultural value chain analysis uses a tool called Market Map, which breaks down the agricultural value chain according to three components:<sup>3</sup>

- Value chain actors: any stakeholder along the value chain that transacts with the product, including farmers, suppliers, warehouses, transporters, purchasers, importers, exporters, etc. This section focuses on actors within Africa, from seed suppliers to processors
- Enabling environment: the infrastructure, policies, institutions, and processes that comprise and shape the market environment
- Service providers: businesses or extension services that support the operation of the value chain

---

<sup>3</sup> Jon Hellin and Madelon Meijer, Guidelines for value chain analysis, Food and Agriculture Organization of the United Nations, November 2006, <https://www.fao.org/3/bq787e/bq787e.pdf>

## 1.1 Value chain actors

### 1.1.1 Seed suppliers

African farmers' challenges start with access to high-quality seeds. This lack of access can be attributed to market underdevelopment. Many small farmers are either unwilling to purchase or incapable of purchasing commercialized seeds due to limited monetary resources, fear of potential risks, or unfamiliarity with modern business models. Only a small number of specialized and large-scale commercial farmers invest in high-quality seeds. Due to the small size of the seed market, foreign firms are also reluctant to develop seed varieties targeting the African market. Chinese seed companies are not yet major players in sub-Saharan Africa like international conglomerates Bayer, Advanta, and Premier seeds.<sup>4</sup> However, in 2017 China National Chemical Corporation (ChemChina) acquired Switzerland's Syngenta AG, which ranks among the top 10 seed companies in Africa.

### 1.1.2 Farmers

Smallholders in Africa face several constraints, which increase risk and uncertainty and disincentivize increased production, consequently preventing them from accessing larger agricultural markets. According to FAO, gross agriculture production value in Africa in 2020 accounts for only 9.31% of global production.<sup>5</sup> Internally, farmers in Africa face liquidity issues – labour shortages, lack of skills and education, and a range of cultural factors that, in some instances, prevent more effective management of resources. External constraints include natural risks to agricultural activity, limited availability of input, credit, mechanization, and marketing services, poor institutional and infrastructural support, inappropriate policies and legislation, restrictive administrative and social structures, and problems associated with land tenure and the acquisition of agricultural resources.

With about 800 million livestock keepers,<sup>6</sup> livestock production accounts for a large part of the agrifood economy and intraregional trade in Africa. The livestock sector contributes around 30–

---

<sup>4</sup> Access to seed Index 2021, <https://www.worldbenchmarkingalliance.org/publication/access-to-seeds-index/wca/rankings/>

<sup>5</sup> FAO Statistics, <https://www.fao.org/faostat/en/#data/QV>

<sup>6</sup> Climate change threatens livestock, the foundation of rural Africa, <https://allianceforscience.cornell.edu/blog/2022/05/climate-change-threatens-livestock-the-foundation-of-rural-africa/#:~:text=Africa%20has%20an%20estimated%20800,or%20about%20350%20million%20people.>

50% to Africa's agricultural GDP and supports the food security and livelihoods of about one-third of Africa's population, or about 350 million people. Pastoralists and agropastoralists are the major suppliers of livestock, but many obstacles stand between them and rapidly evolving downstream markets. These obstacles include high costs of moving livestock across borders and the risks associated with this trade. Low levels of organization in the value chain have hindered investments in logistical capacities (market, transport and cold chain infrastructure) and processing activities, as well as incurring further financial consequences. Rapid growth in livestock herds, along with the expansion of farmland and urbanized areas, has put increasing pressure on natural resources upon which pastoral and agropastoral systems rely, creating tensions between farmers and herders and often resulting in conflicts between communities.

### **1.1.3 Traders**

Cross-border production and trading systems rest upon a complex web of farmers and herders, traders, transporters, brokers, and distributors, many of them operating in the informal market. This system is increasingly confronted with a set of challenges. For example, the regional supply of animals and meat has failed to keep up with a dynamic demand driven by household income growth and urbanization.

Aggarwal et al. investigated the relationship between market access and agricultural productivity in rural areas of the United Republic of Tanzania and found that one additional standard deviation of travel time is associated with 20–25% lower input adoption and output sales.<sup>7</sup> Trade costs in sub-Saharan Africa tend to remain high due to poor transportation infrastructure and contribute to obstacles to agricultural potential. Both transport costs and access to markets are good indicators of rural poverty in this region.<sup>8</sup>

### **1.1.4 Processors**

Africa has a low proportion of agricultural products being processed regionally. Most exported products are at an early stage in processing and have little added value. The declining contribution of the manufacturing sector to GDP limits the potential of food processing – there

---

<sup>7</sup> Shilpa Aggarwal et al., "Market Access, Trade Costs, and Technology Adoption: Evidence from Northern Tanzania" (Cambridge, MA: National Bureau of Economic Research, November 2018), <https://doi.org/10.3386/w25253>.

<sup>8</sup> Wantchekon, Léonard and Piero Stanig. "THE CURSE OF GOOD SOIL? LAND FERTILITY, ROADS, AND RURAL POVERTY IN AFRICA." (2015).

was a decline from 16% in 2000 to 12% in 2019.<sup>9</sup> The World Bank cites the weakness of the agricultural processing industry as a ‘major concern’ at regional and sub-regional levels. For example, in West Africa, exports include primarily unprocessed agricultural products whose prices depend on world prices.<sup>10</sup> This is one reason that disruptions in global supply chains caused by the COVID-19 pandemic were particularly damaging in Africa.

Another ongoing issue related to agricultural processing and storage in sub-Saharan Africa is aflatoxins. Proper drying can reduce the growth of aflatoxins in grains, and proper storage can also reduce spread and contamination. This remains a major issue that contributes to post-harvest losses for farmers.

## **1.2 Enabling environment**

### **1.2.1 Infrastructure**

Adequate and well-functioning infrastructure of all types is essential for lowering costs and thereby increasing the competitiveness of African agriculture. Transport infrastructures impact the cost of delivering inputs to farmers and taking products to market. Inadequate storage infrastructure also contributes to increased costs and waste. Energy infrastructure is critical for the development of agricultural industries, but power generation capacity per capita in Africa is less than half of that in either Asia or Latin America. The energy supply is insufficient and too unreliable to support the processing of some agricultural products. Reaching sub-Saharan Africa’s agricultural potential will require up to \$65 billion investment in water infrastructure for improved irrigation – from 5% to 15% of the total cultivated area.<sup>11</sup> Finally, information infrastructure that allows for the sharing of pricing and technological information between farmers and agro-industrialists as well as producers and markets is lacking.

The geography and vastness of Africa contribute to the issue of high transport costs. One-fifth of Africa's population is landlocked. Less than one-third of Africans live within 100km of the sea, compared to over 40% of people in other developing regions. Africa has the most landlocked countries of any continent, and the majority of rural areas of production are cut off by inadequate

---

<sup>9</sup> World Development Indicators, World Bank 2020.

<sup>10</sup> "Integrating Value Chains in West Africa" from AUC/OECD (2022), Africa's Development Dynamics 2022: Regional Value Chains for a Sustainable Recovery, OECD Publishing, Paris, <https://doi.org/10.1787/2e3b97fd-en>.

<sup>11</sup> Lutz Goedde, Gillian Pais, and Amandla Ooko-Ombaka, "Winning in African Agriculture | McKinsey," February 15, 2019, <https://www.mckinsey.com/industries/agriculture/our-insights/winning-in-africas-agricultural-market>.

transportation or information infrastructure. Transit deficit includes roads and a lack of railways, making it difficult to optimize costs and transport times. Africa has 11% of the world's marine freight capacity, but under 2% of the world's total of rail freight and less than 1% of air freight.<sup>12</sup>

Low road density in sub-Saharan Africa contributes significantly to farmers' lack of access to markets – the region has the lowest density of paved roads in the world. The mean local road density is 0.86km per thousand people, while the density in Tunisia is 2.6km per thousand people, and 1.8km per thousand people in South Asia. For middle-income countries, the average road density is 8.5km per thousand people. Investment in physical infrastructure could significantly reduce travel costs, increase competition in local markets, and even possibly induce a change from subsistence production to market production. Transport costs may be so high that it is not worthwhile for farmers to produce above the subsistence level.<sup>13</sup>

### **1.2.2 Policies**

Africa's agricultural development is highly politicized because of the importance of agriculture in national economies and societies. State interventions are common in a broad range of issues from land ownership and seed distribution to food pricing as well as input and credit subsidies.<sup>14</sup> The fragile status of small farmers calls for protection from the government, but politically motivated measures – such as land policy and fixed pricing – deviate from market dynamism and do not aid in the elevation of productivity. In the long run, excessive political influences in agriculture often contribute to the sector's underdevelopment and make farmers more dependent on state protection rather than on competitiveness. Politicization, underdevelopment, and intervention form a vicious circle to further impede transformation toward a modern market economy in Africa's agricultural sector.

---

<sup>12</sup> New Partnership for Africa's Development (NEPAD) Comprehensive Africa Agriculture Development Programme, Chapter 3.2.1 Rural Infrastructure, November 2002, <https://www.fao.org/3/Y6831E/y6831e00.htm#TopOfPage>

<sup>13</sup> Krishna, Kala, and Yelena Sheveleva. 2017. "Wheat or Strawberries? Intermediated Trade with Limited Contracting." *American Economic Journal: Microeconomics*, 9 (3): 28-62.

<sup>14</sup> Ruth Hall, *Land Grabbing in Southern Africa: The Many Faces of the Investor Rush*, *Review of African Political Economy* (June 2011) 38.128), 193–214; Jane Harrigan, *U-Turns and Full Circles: Two Decades of Agricultural Reform in Malawi 1981–2000*, *World Development* (2003) 31.5, 847–863.



## 1.3 Service providers

### 1.3.1 Chemical inputs

Chemical input use in Africa has grown in the past decade, but is still far below international average. Africa's total fertilizer imports were \$5,538,094 in 2021, accounting for only 5.7% of world fertilizer imports.<sup>15</sup> Africa's total agriculture fertilizer production capacity in 2021 accounts for 7% of the world's total fertilizer production capacity.<sup>16</sup> Farmers face numerous challenges that limit demand for chemical input – most smallholders have little to no experience with fertilizers and their potential to enhance crop yields. Of the farmers who may be aware of this, the majority do not know the right types and rates of fertilizers that they should use for their soils and crops. Furthermore, these farmers have limited access to capital, which further affects their demand for fertilizer and other chemical inputs.

### 1.3.2 Machinery

African farm systems are the least mechanized across all continents. Mechanization levels on farms across Africa are very low, with the number of tractors in sub-Saharan Africa ranging from 1.3 per square kilometre in Rwanda to 43 per square kilometre in South Africa, compared to 128 per square kilometre in India and 116 per square kilometre in Brazil.<sup>17</sup> Constraints attributed to the low level of mechanization range from market failures that limit access to machinery and supplies of spare parts, lack of institutional services – especially those that would be required to ensure adequate technicians and skilled personnel to operate and repair farm machinery – to governance challenges such as political interest, elite capture, and corruption that constrain the government and hinder the private sector's involvement in machinery importation.

---

<sup>15</sup> FAO Statistics, <https://www.fao.org/faostat/en/#data/QV>

<sup>16</sup> Distribution of agricultural fertilizer production capacity worldwide in 2021, by region, <https://www.statista.com/statistics/1265915/share-global-fertilizer-capacity-by-region/>

<sup>17</sup> Busani Bafana, "Mechanizing agriculture is key to food security", Africa Renewal, 9 April 2019, <https://www.un.org/africarenewal/magazine/april-2019-july-2019/mechanizing-agriculture-key-food-security>

### 1.3.3 Storage and logistics

Warehouses and logistics services are also lacking in sub-Saharan Africa. An estimated \$8 billion is needed in investment in warehousing to ensure that 70% of grain production in sub-Saharan Africa has access to local warehousing.<sup>18</sup> Food storage in the region can be categorized into household, community, and regional storage. Value can be added to the agricultural value chain through improved organized storage at the community and regional levels.

As storage becomes more organized and moves beyond individual farm level, ownership of crops can be traded rather than crops themselves. This introduces the possibility of adding value through the creation of additional markets. For this reason, it may be more efficient to invest in regional forms of storage rather than private. Improved storage and access to warehousing for small-scale farmers would allow them to use warehouse receipts as collateral.

Because staple crop production is typically rain-fed (because sub-Saharan Africa lacks adequate irrigation infrastructure), there are times when staples are abundant (right after harvest) and times when they are scarce. This leads to product price fluctuations, but farmers in the region tend not to store excess products to sell when the price is high. They may face credit or liquidity constraints and thus do not have the ability to borrow against their production. Alternatively, they may lack access to adequate storage, so the risk of post-harvest losses from pests or rot may be high.

In sub-Saharan Africa, very little food moves through cold chains. Electricity is often not available or reliable enough to facilitate cold chains. As demand remains relatively low, cold chain infrastructure will remain scarce, and prices will remain high. Research suggests that post-harvest losses of fruits and vegetables are substantial, and there could be returns from developing more widespread cold chains.

### 1.3.4 Marketing

Smallholder farmers in Africa face significant challenges in marketing their products. These challenges include inadequate market information, as well as collusion and price determination among middlemen. In Ghana, farmers' marketing associations were found to be beneficial in combatting price-setting and in promoting the marketing of smallholder products.

---

<sup>18</sup> Lutz Goedde, Gillian Pais, and Amandla Ooko-Ombaka, "Winning in African Agriculture | McKinsey," February 15, 2019, <https://www.mckinsey.com/industries/agriculture/our-insights/winning-in-african-agricultural-market>.

Agricultural producers in high-income and upper-middle-income economies commonly use branding in marketing their products to increase competitiveness, but this practice is uncommon in Africa. There are several structural reasons for this. First, relatively few multinational corporations dominate the market, and thus growers are forced to take the prices offered by buyers. For example, only four companies dominate the coffee market in sub-Saharan Africa: the Starbucks Corporation, Nestlé, The J.M. Smucker Company, and the Kraft Heinz Company.<sup>19</sup> Agricultural products are often seen as homogenous and marketed as commodities, even if they have distinctive features that might command a higher price in the international market. Increased awareness and the promotion of branding of African agricultural products could contribute to increased competitiveness for African producers.

### **1.3.5 Barriers to free trade**

Non-tariff barriers inhibit the development of value chains at the regional level in sub-Saharan Africa. The African Continental Free Trade Area (AfCFTA), launched in 2021, provides a framework for facilitating trade and accelerating the development of regional agricultural value chains, but its implementation is inhibited by significant existing barriers to free trade.

There are many formal and informal barriers to free trade, including formal and informal tariffs, as well as continued adherence to outdated or even abolished regulations – for example, lengthy and cumbersome bureaucratic requirements for ‘country of origin’ certificates for agricultural products. Furthermore, lack of coordination between regulatory frameworks places the burden of compliance on traders and is a significant barrier to trade.

### **1.3.6 Financial services**

Farmers and agribusinesses have been finding it more challenging to access capital after COVID-19, with many financial institutions becoming risk-averse and hesitant to lend to businesses in the agricultural sector. The pandemic has led to reduced liquidity in financial markets, making it more difficult for farmers and agribusinesses to access credit and other financial services. Disruptions in agricultural supply chains have led to reduced production, lower prices, and increased market volatility, making it harder for farmers and agribusinesses to generate income and repay loans. Reduced demand for agricultural products has also led to lower prices and reduced income for farmers and agribusinesses. Additionally, many farmers

---

<sup>19</sup> Getachew Mengistie Alemu, “Strategic Use of Branding for Competitiveness: The Rationale for Branding and Marketing Agricultural Products of African Countries,” *Journal of Fair Trade*, October 1, 2019, <https://doi.org/10.13169/jfairtrade.1.2.0006>.

and agribusinesses in Africa lack access to digital technology, making it more difficult for them to access financial services remotely. Limited government support for the agricultural sector during the pandemic has also made it harder for farmers and agribusinesses to access financial support.

## Chapter 2: Main aspects of China-Africa agricultural cooperation

China-Africa agricultural cooperation began in the late 1950s. At first, China mainly provided traditional development aid to African countries, including the construction of agricultural infrastructure and the dispatch of agricultural experts.<sup>20</sup> Since 2000, with the establishment of the Forum on China-Africa Cooperation (FOCAC), cooperation between China and Africa has entered new stages in all three aspects: trade, investment, and aid, with projects of diverse forms. Advanced cooperation under the Belt and Road Initiative marked a new milestone in China-Africa relations.<sup>21</sup>

### 2.1 Trade

China has been Africa's largest trading partner since 2009.<sup>22</sup> Since 2021, China has become the second largest export destination for African agricultural products. The trade volume of agricultural products between China and Africa increased from about \$5.7 billion in 2015 to more than \$8.8 billion in 2022 (see Figure 2). The average annual growth rate of the trade volume is about 6.4%. In 2020, due to the COVID-19 pandemic, the total trade volume of agricultural products between China and Africa decreased, with China's exports of agricultural products falling by 7.7%, while imports from Africa increased by 4.6%. The Chinese government has dedicated itself to increasing imports and constructing a partnership of equals in the new era – China implements a zero-tariff policy for most African products.<sup>23</sup> At present, 14 African countries have been approved to export a total of 25 kinds of agricultural products to China.<sup>24</sup>

---

<sup>20</sup> Konings P. China and Africa[J/OL]. *Journal of developing societies*, 2007, 23(3): 341-367.

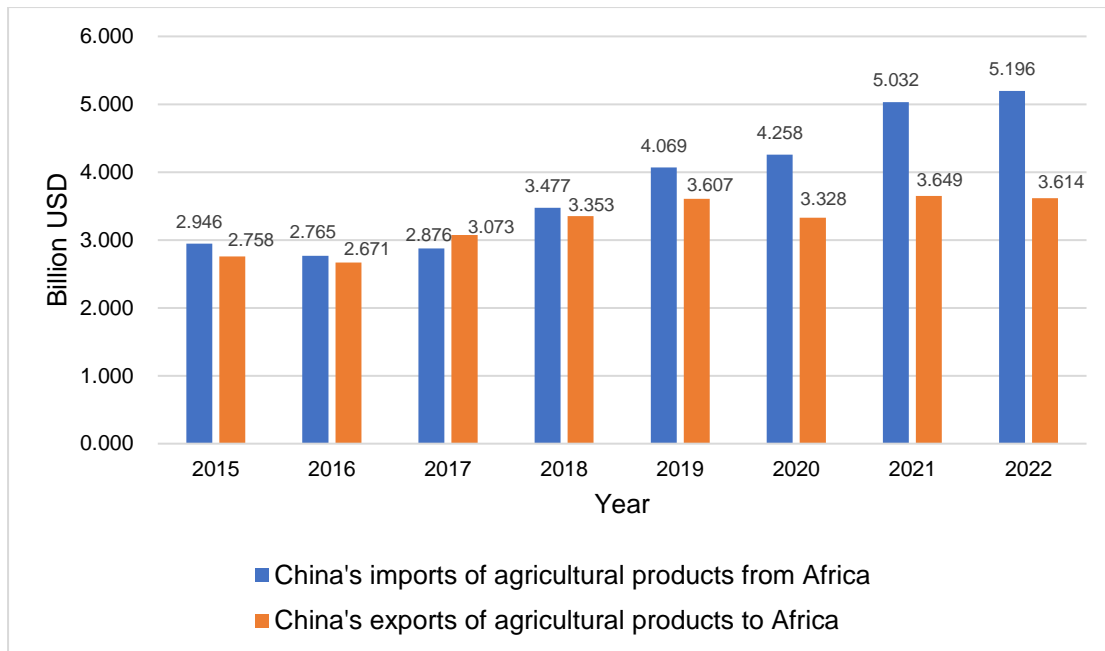
[DOI:10.1177/0169796X0702300303](https://doi.org/10.1177/0169796X0702300303).

<sup>21</sup> The State Council Information Office of the People's Republic of China. China and Africa in the New Era: A Partnership of Equals[EB]. (2021-11-26)[2022-11-21].

<sup>22</sup> Xinhua. China is Africa's largest trading partner since 2009: white paper[EB]. (2021-11-26)[2022-11-21]. [http://www.xinhuanet.com/english/africa/2021-11/26/c\\_1310334003.htm](http://www.xinhuanet.com/english/africa/2021-11/26/c_1310334003.htm).

<sup>23</sup> Xinhua. China, Africa to strengthen agriculture cooperation[EB]. (2013-8-29)[2022-11-21]. [http://www.china.org.cn/china/Off\\_the\\_Wire/2013-08/29/content\\_29861146.htm](http://www.china.org.cn/china/Off_the_Wire/2013-08/29/content_29861146.htm).

<sup>24</sup> Global Times. African farm exports to China up 18% in 2021: Chinese FM spokesperson[EB]. (2022-8-16)[2022-11-21]. <https://peoplesdaily.pdnews.cn/business/african-farm-exports-to-china-up-18-in-2021-chinese-fm-spokesperson-273752.html>.



**Figure 2: China-Africa Agricultural Trade, 2015–2022.** (Note: The agricultural product coverage refers to the Agreement on Agriculture published by the World Trade Organization; Source: Customs statistics from General Administration of Customs of the People's Republic of China)

The market structure of China-Africa agricultural trade is characterized by high concentration, with the top 10 African countries dominating more than 70% volume of trade. Togo, Senegal, and South Africa are all in the top 10 countries in terms of China's exports and imports of agricultural products.<sup>25</sup>

As for product structure, China and Africa have highly complementary resource endowments in agriculture. China mainly imports sesame, soybean, tea, spices, vegetables, fruits, nuts, and marine and aquatic products from Africa. 90% of China's sesame imports come from African countries such as Mali, Togo and Mozambique.<sup>26</sup> In 2021, China imported a total of 263,000 tons of soybeans from Africa, increasing more than five times year-on-year. 232,000 tons were imported from Benin alone, attaining a year-on-year growth of 14 times. Soybean imports from Ethiopia and the United Republic of Tanzania have also grown steadily.<sup>27</sup> In the context of the

<sup>25</sup> *Ibid.*

<sup>26</sup> South China Morning Post. China's Africa ties: why food is the new focus[EB/OL]. (2023-03-19)[2023-05-09]. [https://www.scmp.com/news/china/diplomacy/article/3214001/chinas-africa-ties-why-food-new-focus?module=perpetual\\_scroll\\_0&pgtype=article&campaign=3214001](https://www.scmp.com/news/china/diplomacy/article/3214001/chinas-africa-ties-why-food-new-focus?module=perpetual_scroll_0&pgtype=article&campaign=3214001)

<sup>27</sup> Embassy of the People's Republic of China in the Republic of Benin. Benin participated in online roundtable on China-Africa soybean trade[EB/OL]. (2022-07-28)[2023-05-09]. [https://mp.weixin.qq.com/s?\\_biz=MzUxMzgzNzQyMA==&mid=2247497500&idx=1&sn=c6e0642ccb366850785ed00](https://mp.weixin.qq.com/s?_biz=MzUxMzgzNzQyMA==&mid=2247497500&idx=1&sn=c6e0642ccb366850785ed00)

trade war between China and the United States of America, China rapidly increases its sourcing of agricultural products from Africa as an alternative to the United States of America.

## 2.2 Investment

China's direct investment stock in Africa has continuously expanded in the 21<sup>st</sup> century, rising from \$750 million in 2003 to \$44.19 billion in 2021.<sup>28</sup> China has become the developing country with the biggest investment stock in Africa and is predicted to become the largest foreign direct investment (FDI) source in Africa.<sup>29</sup> In the last seven years, China's FDI stock has generally continued to rise though decreases during the pandemic (see Figure 3).

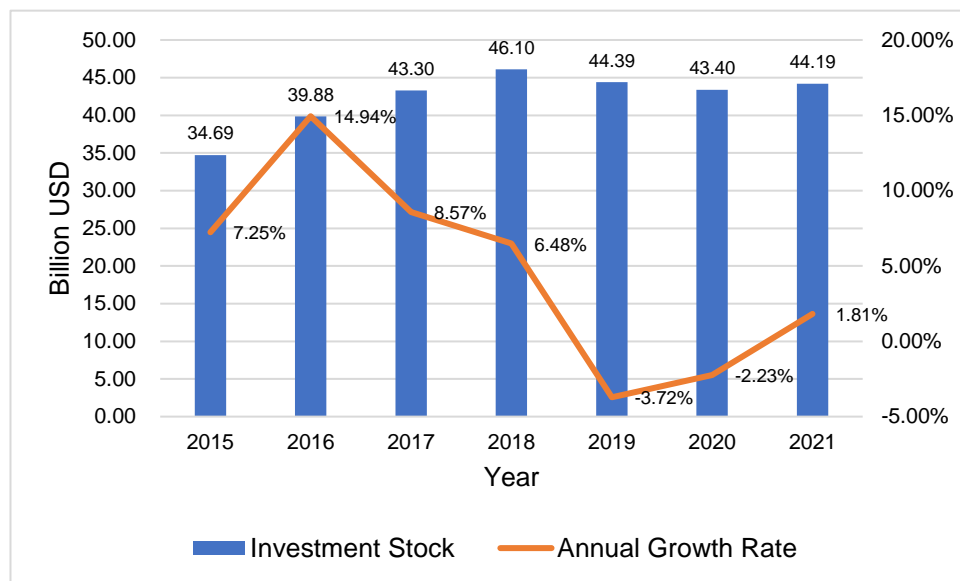


Figure 3: China's FDI in Africa, 2015–2021. (Source: National Bureau of Statistics)

China's agricultural investment in Africa is rapidly rising. China's investment stock in the agricultural field increased from \$1.03 billion in 2015 to \$1.39 billion in 2019.<sup>30</sup> By the end of

[1af74cb24&chksm=f94da71fce3a2e092323f86ed4486320642bc59ac732005bce967406e4cbfd96d3b6a936f855&scene=27](https://www.scio.gov.cn/ztk/dtzt/44689/47462/47470/Document/1716827/1716827.htm)

<sup>28</sup> The State Council Information Office of the People's Republic of China. China and Africa in the New Era: A Partnership of Equals[EB]. (2021-11-26)[2022-11-21]. <http://www.scio.gov.cn/ztk/dtzt/44689/47462/47470/Document/1716827/1716827.htm>.

<sup>29</sup> McKinsey & Company. Dance of the lions and dragons [R/OL]. (2017-06) [2022-11-21].

<sup>30</sup> Geng Jianzhong. Historical logic, realistic logic and path selection for agricultural investment in Africa[J]. China Investment, 2022, No. 539(Z2): 66-68.

2020, more than 200 Chinese companies had a total investment stock of \$1.11 billion in the agricultural sector in 35 African countries. Their investments cover areas such as planting, breeding, and processing.<sup>31</sup>

China's investment in agriculture in Africa comprises several features. Firstly, though China's direct investment in the agricultural sector grows quickly, it is relatively small compared with the top five sectors of investment: mining, construction, manufacturing, the financial sector, and scientific research and support services. These sectors made \$28.56 billion in FDI stock in 2015, accounting for 82.3% for the total.<sup>32</sup> Secondly, Chinese investment focuses primarily on low-value-added and low-tech industries like fishery, farming, and service industries relevant to agriculture. Thirdly, the investment flows to a few target countries such as Mauritania, Uganda, Egypt, Zambia, Madagascar, Zimbabwe, the United Republic of Tanzania, and South Africa.<sup>33</sup> Finally, investors are diverse, with state-owned enterprises as the pioneers and more and more private enterprises as well as individuals involved.

## 2.3 Aid

Official development aid continues to play an important role in China-Africa agricultural cooperation. Development aid has come to comprise new forms, such as the introduction and development of hybrid rice in African countries, the construction and operation of Agricultural Technology Demonstration Centres (ATDCs), and Overseas Agricultural Cooperation Zones in addition to traditional projects and personnel assistance.

China actively promotes hybrid rice in Africa, aiming to increase grain yields and thus solve food security problems. Hybrid rice gains high-level political attention because it is an important solution to China's own food security issues and represents the best of Chinese agrotechnology. Since 2010, experts from Hunan Province have been assisting Madagascar with localizing hybrid rice. The country has planted 20,000 hectares of hybrid rice fields so far, with an average yield of seven tons per hectare. As of 2019, Hunan Province had hybrid rice pilot fields in 16 African countries, including Egypt, Liberia and others. The experiments have achieved promising results. The average yields per hectare of hybrid rice in Africa are two tons higher

---

<sup>31</sup> The State Council Information Office of the People's Republic of China. China and Africa in the New Era: A Partnership of Equals[EB]. (2021-11-26)[2022-11-21].

<sup>32</sup> YAO Guimei. China-Africa direct investment and cooperation [M]. Beijing: China Social Sciences Press, 2018.

<sup>33</sup> Chinese Academy of International Trade and Economic Cooperation (CAITEC). China-Africa Economic and Trade Relationship Annual Report 2021 [R/OL]. (2021-11-17) [2023-04-14]. [https://www.caitec.org.cn/n5/sy\\_qzdt\\_xshd/json/5954.html](https://www.caitec.org.cn/n5/sy_qzdt_xshd/json/5954.html).



than those of local rice production.<sup>34</sup> However, there has not yet been large-scale commercialization of hybrid rice plantation in Africa due to various political, economic and social constraints.

Agricultural Technology Demonstration Centres are a flagship project of Chinese aid efforts in Africa's agricultural sector, and were introduced in 2006 when the Chinese government announced that they would construct 10 ATDCs in various African nations during the third FOCAC. Today, at least 25 Chinese-funded ATDCs have been planned, constructed or put into operation in Africa.<sup>35</sup> ATDCs combine various aid programming models that have previously been used (such as farms, agrotechnology demonstration, and expert dispatch), with some of the mechanisms being purposefully created to avoid issues encountered in the past. Each chosen province has a strong incentive to encourage its leading enterprises to pioneer their businesses overseas, in addition to committing to training, demonstration, and extension of aid services required by the ATDCs, with the expectation of building an overseas platform for greater cooperation.<sup>36</sup>

The Chinese government selected 10 Overseas Agricultural Cooperation and Demonstration Zones in 2017, five of which are located in Africa. With political support from China, the Zones in Sudan, Mozambique, the United Republic of Tanzania, Zambia and Uganda are intended to

stick to the concept of shared development... optimize the planning and design of the demonstration area, strengthen the construction of the whole industrial chain, promote the integration of primary, secondary and tertiary industries, establish and improve the operation management and service mechanism, risk prevention and control system.<sup>37</sup>

In short, China-Africa agricultural cooperation has undergone a long period of evolution and has contributed to Africa's efforts against hunger and rural poverty. In 2015, during the Johannesburg Summit of FOCAC, President Xi Jinping stated that China-Africa cooperation

---

34 Hunangov. (2019). "Chinese Hybrid Rice Technology Helps Africans Eliminate Hunger and Poverty" [http://www.enghunan.gov.cn/News/Localnews/201906/t20190621\\_5364403.html](http://www.enghunan.gov.cn/News/Localnews/201906/t20190621_5364403.html)

35 Tang, Xiaoyang, *Coevolutionary Pragmatism: Approaches and Impacts of China-Africa Economic Cooperation*, Cambridge University Press, 2020, pp. 117-8.

36 Xu, Xiuli & Li, Xiaoyun & Qi, Gubo & Tang, Lixia & Mukwereza, Langton. (2016). Science, Technology, and the Politics of Knowledge: The Case of China's Agricultural Technology Demonstration Centers in Africa. *World Development*. 81. [10.1016/j.worlddev.2016.01.003](https://doi.org/10.1016/j.worlddev.2016.01.003).

37 China's Ministry of Agriculture "关于认定首批境外农业合作示范区和农业对外开放合作试验区的通知", 2017/8/4, [https://www.moa.gov.cn/gk/tzqg\\_1/tz/201708/t20170804\\_5769832.htm](https://www.moa.gov.cn/gk/tzqg_1/tz/201708/t20170804_5769832.htm)

aims to accelerate the industrialization and modernization of agriculture in Africa.<sup>38</sup> This indicates that China views agricultural cooperation with Africa as a comprehensive strategy. Facilitation of commercial engagements, promotion of investments and transfer of agrotechnology are set to work together to aid Africa's transformation and development.

---

38 China Daily Africa. (2015). "FOCAC 2015 Johannesburg Declaration"  
<https://www.chinadaily.com.cn/a/201512/11/WS5a2b56f1a310eefe3e99feb1.html>

## **Chapter 3: Changed framework for agricultural cooperation in post-COVID-19 recovery**

### **3.1 Political context**

Although China and Africa enjoy positive intergovernmental relations overall, intensifying geopolitical rivalry is also affecting the African continent in recent years. The 'US Strategy Towards sub-Saharan Africa', published by the Biden administration in August 2022, explicitly criticized Chinese and Russian presence in Africa and demonstrated intention of all-round commercial, value and geopolitical competition. There is also growing interest in investing in Africa from other global players such as Japan, India, and Gulf States. In this context, most African countries have expressed their openness to work with diverse international partners as well as their refusal to 'pick sides' in the geopolitical contest. African leaders remember the Cold War and resent the sort of rivalry that had been brought to their homes. Macky Sall, the African Union chairperson and president of Senegal, said in the United Nations General Assembly in September 2022 that Africa 'does not want to be the breeding ground of a new Cold War, but rather a pole of stability and opportunity open to all its partners, on a mutually beneficial basis.'

Meanwhile, China's own development over four decades impresses many Africans. The unique Chinese experiences and approaches are increasingly seen as an alternative to the dominance of neo-liberalist models, which have had limited effects on poverty reduction and structural transformation in Africa. Therefore, dialogue and cooperation via the mechanism of FOCAC continues to grow.

The eighth FOCAC ministerial meeting took place in Dakar, Senegal, in November 2021. One of the main issues addressed in the meeting was agricultural development and trade. The Dakar Action Plan (2022–2024) articulates that both sides will 'convene the first meeting of the China-AU Joint Committee on Agricultural Cooperation,' and China will expand agricultural imports from Africa, along with knowledge sharing and market-based investment in Africa's agricultural sector. Furthermore, China will send 500 agricultural experts to African countries for consultation and capacity building, 'undertake 10 poverty reduction and agricultural assistance projects for Africa,' and 'set up a number of China-Africa joint centers for modern agrotechnology exchange, demonstration and training in China'. On the other hand, the China-Africa Cooperation Vision 2035 notes that China supports Africa in developing a modern agricultural sector to 'enhance food security capabilities of African countries.'

The Global Development Initiative (GDI), which was unveiled by President Xi Jinping at the United Nations General Assembly in September 2021, will shape China's policies towards Africa in the coming years as well. It outlines China's vision to be a leader in global development efforts. The initiative aims to support developing countries in poverty alleviation, public health, and other issues. The GDI, in tandem with the Belt and Road Initiative, represents Chinese perspective on global development challenges. It is a roadmap with the goal of narrowing the North-South gap. In post-COVID-19 recovery, the GDI encourages both China and Africa to enhance cooperation in many key areas, particularly in promoting sustainable development and building a community with a shared future for humankind. The GDI is highly compatible with the African Union's Agenda 2063. Both initiatives advocate multilateralism and promote bilateral collaboration in economy, finance, infrastructure, investment, financing and poverty reduction.

### **3.2 Macroeconomic downturn and fiscal stress**

In 2019, the global economy was already in the mire of stretched trade disputes and unsustainable policymaking, and the growth rate (2.9%) dropped to its nadir within the last 10 years.<sup>39</sup> But the outbreak of the COVID-19 pandemic brought a more shocking hit to the world economy. The enduring and disastrous pandemic worsened the economic situation, causing a 'great disruption'.<sup>40</sup> Self-developing new variants, imperfect vaccination and low vaccination coverage in middle- and low-income countries made it impossible for nations and international organizations to win against the pandemic and prepare to boost their economies. The Russia-Ukraine conflict further loomed over the potential of economic recovery.

Although it was the initial epicenter of the COVID-19 outbreak, China quickly contained the spread of virus through early and accurate lockdowns, enabling a quick rebound in economic growth. Growth was also supported by an increase in infrastructure investment as well as a modest revival of private consumption. China has introduced targeted fiscal policies, offering tax reliefs and fee cuts to companies participating in the fight against COVID-19, increasing government investment to infrastructure building through special bonds.

In comparison, Africa suffered a devastating economic blow at a much higher price. Lower external demand, higher commodity prices, the collapse of tourism, and lower remittances – exacerbated domestic lockdowns and other measures required to control the spread of COVID-19 – were all contributing factors to the deteriorated economic situation. The real GDP of Africa

---

<sup>39</sup> United Nations. World Economic Situation Prospects 2020[R]. New York: the UN, 2020.

<sup>40</sup> United Nations. World Economic Situation Prospects 2021[R]. New York: the UN, 2021.

contracted by 2.1% in 2020 before rebounding the following year, reaching 6.9%.<sup>41</sup> The Ukraine crisis took another heavy toll on Africa, making the economic recovery bumpier. The soaring prices of oil, gas and other commodities, coupled with blocked trade channels, have broadened the negative trade balance of African countries, dragged down their economic growth, and posed threats to the poverty alleviation journey. Compared to the pre-COVID-19 period, 28.7 million more Africans were trapped in extreme poverty in 2021.<sup>42</sup>

To mitigate the pandemic's economic and social impacts, African countries generally implemented expansionary fiscal policies, including increased healthcare spending, unemployment benefits, targeted wage subsidies, direct transfers and tax cuts. The pandemic control measures reduced domestic economic activities, and led to a downturn in international trade and a decline in government tax and non-tax revenues. Fiscal revenue as a share of GDP in African countries declined from about 20% in 2019 to about 18% in 2020, especially in oil-exporting countries.<sup>43</sup> As a result of the decline in fiscal revenues and increase in fiscal expenditures, Africa's fiscal deficit was sharply aggravated.

### **3.3 Priority of agricultural development**

Affected by the COVID-19 pandemic, regional conflicts and geopolitical tension, the crises of food, energy and debt are emerging simultaneously. In terms of the impact of COVID-19 on Africa's agriculture, the pandemic has disrupted global supply chains, causing a decline in demand for agricultural products, leading to reduced prices for farmers. Furthermore, restrictions on movement and trade made it challenging for farmers to access inputs, markets, and labor. This has led to a decline in agricultural productivity and income for farmers in Africa, exacerbating poverty and food insecurity.

The pandemic has had a ripple effect on Africa's economy, affecting both formal and informal sectors. Many African countries rely heavily on imports for their food supply, and disruptions in trade have led to food shortages and price spikes. This has had a devastating impact on the most vulnerable populations, such as those living in extreme poverty or those who depend on daily wages.

---

<sup>41</sup> African Development Bank Group. African Economic Outlook 2022 Highlights: Supporting Climate Resilience and a Just Energy Transition in Africa [R]. Côte d'Ivoire: ADB, 2022.

<sup>42</sup> *Ibid.*

<sup>43</sup> United Nations. World Economic Situation Prospects 2021[R]. New York: the UN, 2021.

The world economy is struggling to recover, and developing countries face daunting challenges in attaining 2030 SDGs, of which 'achieving food security, improving nutrition and promoting sustainable agriculture' ranks number two. As GDI focuses on implementing 2030 SDGs, China has been working with African countries to develop cooperation networks in agriculture and climate issues to counteract the negative impacts of COVID-19 and other factors.

First, China released a list of projects in the GDI project pool, which includes 50 practical cooperation projects in poverty reduction, food security, industrialization and other fields. Second, China works with related United Nations institutions to advance the Food Production Enhancement Action, especially in digital and innovative agricultural financing, animal and plant disease prevention and control, and sustainable soil and water resource management. Third, China announced that it would move forward with the Global Clean Energy Cooperation Partnership and deepen practical cooperation with the International Renewable Energy Agency and other countries to advance a transition to clean energy and realize sustainable energy security.

In terms of development in agriculture, China and Africa have broad common interests. In 2022, China entered a zero-tariff agreement with 12 African countries for 98% of their export items to China. China has provided emergency food assistance to Djibouti, Ethiopia, Somalia, and Eritrea. More African agricultural produce has reached the Chinese market through 'green lanes'. Demonstrations and trainings were launched at the first four China-Africa joint centres for modern agrotechnology exchange. Chinese businesses are increasing their investment in Africa's agricultural sector, growing more grains through the initiative of 100 companies in 1,000 villages, helping create jobs, reduce poverty and improve the living standards of rural households in Africa.<sup>44</sup>

China also provides pesticides, medical instruments, irrigation facilities and technical assistance to African countries suffering from locust plagues and drought. China also sponsors the Young Agricultural Scientists Leadership Programme and provides training and education opportunities for African agricultural technicians in China. Training, research and technology dissemination has been a primary focus of Chinese agriculture commitments, with hundreds of Chinese agriculture experts dispatched to African countries and ATDCs established across the continent. China itself boasts the world's largest public agricultural technology extension system, which employs half a million extension workers to provide advisory services to farmers and

---

<sup>44</sup> "China and Africa: Strengthening Friendship, Solidarity and Cooperation for a New Era of Common Development", Remarks by State Councilor Wang Yi, 2022-08-19, [https://www.fmprc.gov.cn/eng/zxxx\\_662805/202208/t20220819\\_10745617.html](https://www.fmprc.gov.cn/eng/zxxx_662805/202208/t20220819_10745617.html).

promote agricultural inputs such as seeds and chemicals. Technical assistance to Africa also strives to build up and merge with local agrotechnology extension teams.

## Chapter 4: Joint efforts along the agricultural value chain

### 4.1 Seed innovation

Though Chinese firms are not leaders in Africa's seed market, many institutions have been actively trying to innovate and introduce seed varieties that are well suited to African environments. As noted previously, hybrid rice is a focus of Chinese aid. In the United Republic of Tanzania, Burundi, Madagascar, Liberia and other countries, ATDCs and experiment farms have tried to localize hybrid rice in Africa, with adapted strains that can withstand local insects and diseases as well as demonstrate great yield potential.<sup>45</sup> However, the reluctance of African farmers to purchase hybrid rice seeds poses a significant hurdle to commercialization.

BGI Group (Huada Gene), a cutting-edge Chinese biotech company based in Shenzhen, explores a different path. Partnered with Yunnan University, the company successfully developed perennial rice varieties in Africa in 2022, which incorporate African wild rice genes through the company's technology. Currently, trial plantations of the new rice varieties have been conducted in China, Uganda, Ethiopia and many other countries worldwide. Once approved by authorities and scaled up for farming, perennial rice is expected to halve current production costs, increase yields and reduce soil deterioration. Perennial rice can produce high yields with less intensive field management. This indicates that perennial rice has the potential to be scaled up in Africa. BGI Group also assists the African Orphan Crops Consortium with initial gene sequencing to increase the nutritional content of 100 traditional African food crops.<sup>46</sup>

Conventional farming enterprises also promote seed improvement through their operations. For instance, a Chinese farm growing grapes and honeydew melons in the United Republic of Tanzania impressed its neighboring farms with its fruit varieties. Consequently, local farmers have begun to plant new seeds.<sup>47</sup> China-Africa Cotton, which operates in Zambia and Malawi, has imported seed-delinting machines to the region. The firm not only delints its own cotton

---

45 " 'The Seeds' - The China-Africa Friendship on Madagascar's 'New Banknote' ", China Daily, 2021-09-10  
<https://www.chinadaily.com.cn/a/202109/10/WS615e6779a310cdd39bc6d500.html>

46 " 五种孤生作物基因组被破解 华大助力非洲提高粮食质量", 华大 BGI, 2018-12-11,  
[https://www.genomics.cn/news/info\\_itemid\\_451.html](https://www.genomics.cn/news/info_itemid_451.html)

47 Interview, Yang, farm owner, via online meeting, Feb 2023.



seeds, but also provides this service to other companies and farmers, significantly increasing the seed germination rate.<sup>48</sup>

## 4.2 Remote sensing and drones for farming

The use of drones and remote sensing technologies in production settings that require monitoring and coordinating complex, large-scale processes has become increasingly popular, and the agricultural sector is no exception. Modern digital technologies facilitate the management of agricultural production in order to reduce costs, increase crop performance and yield, mitigate negative environmental impacts, reduce the need for human labor, and augment both precision and efficiency in virtually all aspects.<sup>49</sup> Remote sensing technologies are especially helpful in managing spatial and temporal variability in soil, crop, and yield, which, when properly done, can help farmers increase the quality and amount of their production while cutting expenses considerably.<sup>50</sup> Drones, besides functioning as a mobile base for sensors, are also used to accomplish tasks such as seed planting and field spraying. Owing to these advantages, the employment of drones in agricultural settings has become more prevalent in more advanced countries. Recent experiments in African countries demonstrate that the transfer and use of such technologies have the potential to dramatically upgrade production and help climb the value chain in developing economies as well.

China, as a leading manufacturer and user of drone technologies, has long been at the forefront of drone-related collaborations with African governments, enterprises, and experts based on capacity-building, technology transfer, and experience-sharing. For example, on a farm 200 kilometres from Cape Town, South Africa, agricultural drones have been used extensively to conduct spraying operations. These drones are manufactured by a South African company with technical support from Chinese counterparts.<sup>51</sup> At China-Africa Development Fund's Xai-Xai farm in Mozambique, drones are all-round champions, conducting land surveys, seed sowing, pesticide spraying, and plant protection, all guided by Beidou's GPS. They are born out of

---

<sup>48</sup> Tang, Xiaoyang: "Adaptation, innovation, and industrialization: the impact of Chinese investments on skill development in the Zambian and Malawian cotton sectors" *Journal of Chinese Economic and Business Studies* Year:2021.10 Volume:19 Issue:4 SpecialIssue:SI Page:295-313,

<sup>49</sup> Singh, A.P.; Yerudkar, A.; Mariani, V.; Iannelli, L.; Glielmo, L. A Bibliometric Review of the Use of Unmanned Aerial Vehicles in Precision Agriculture and Precision Viticulture for Sensing Applications. *RemoteSens.* 2022, 14, 1604. <https://doi.org/10.3390/rs14071604>

<sup>50</sup> *Ibid.*

<sup>51</sup> "北斗技术推动中非合作提质升级", 人民日报, 2022-02-11, [http://ydyj.china.com.cn/2022-02/11/content\\_78041642.htm](http://ydyj.china.com.cn/2022-02/11/content_78041642.htm)

technological collaborations between Chinese and Mozambican government agencies and companies.<sup>52</sup> Such collaborations have made key contributions to food security in Mozambique and other African countries. The application of similar technologies in farming will see increased collaborative efforts between China and Africa.

### 4.3 Technology training and transfer

Biological and chemical technology strengthen modern advances in agricultural production and processing. As such, the sharing of technologies and experience in the biochemical domain has featured prominently in China's efforts to collaborate with African countries in building a technologically advanced agricultural system.

In Rwanda, a Chinese-funded agricultural centre has helped train over 5,000 technical personnel in its fungi programme alone. The centre has received global attention, with over 16,000 agricultural experts from different countries and international organizations having visited the centre since its establishment in 2011.<sup>53</sup> The centre, which exemplifies China's provision of technological agricultural support to African countries, received high praise from the chairman of the Rwandan government's agricultural commission and from international experts for helping promote local employment, raise income, and propel African countries like Rwanda to reduce and eliminate poverty.

Investments facilitate technology transfer as well. Chenguang Biotech Group is a world leader in the natural pigment industry and an important supplier of plant extracts, mainly producing red pigment (capsicum oleoresin) and lutein. Plant extracts are also widely used for health foods, food additives, and animal nutrition. The firm started operations in Zambia in 2018 and has been continuously expanding the plantation of peppers and marigold flowers for the extraction of red pigment and lutein. COVID-19 hardly affected business there. The firm translated planting manuals from Chinese into English, instructed local employees, then had them teach other local contracted farmers about field preparation, seedlings, transplanting, field management, spraying, picking, drying and sorting. The company has also built an extraction factory in Zambia and exports processed plant extracts to Europe.<sup>54</sup>

---

<sup>52</sup> “中非合作，交流农业‘致富经’”，人民日报 2021-2-1, [http://www.gov.cn/xinwen/2021-02/01/content\\_5584056.htm](http://www.gov.cn/xinwen/2021-02/01/content_5584056.htm)

<sup>53</sup> “期待非中农业合作取得更大成果”，直通非洲 2022-01-13  
[http://www.focac.org/zfzs/202201/t20220113\\_10495219.htm](http://www.focac.org/zfzs/202201/t20220113_10495219.htm)

<sup>54</sup> “冲破疫情难关 晨光生物战略布局非洲赞比亚”，科技日报, 2021-12-13  
<https://ln.chinadaily.com.cn/a/202112/13/WS61b708f6a3107be4979f6ce7.html>

## 4.4 Climate change and new energy

Climate change poses significant challenges to Africa's agriculture sector due to its direct effects on temperature and precipitation patterns. Its impacts can lead to reduced crop yields, threats to food security, and increased vulnerability for millions of people. According to the Intergovernmental Panel on Climate Change (IPCC), temperature increases of 2°C to 4°C are expected in Africa by the end of the 21st century and precipitation is expected to decrease in North Africa and the northern Sahara significantly. This will lead to an estimated decrease in agricultural production of 15% to 30% by 2050.

As agriculture and underdeveloped rural areas are most vulnerable to climate change, both China and Africa are devoted to environmental preservation. China, along with 53 African countries and the African Union Commission proclaimed the Declaration on China-Africa Cooperation on Combating Climate Change in December 2021, promising to fight for environmental protection together through strategic partnership. One of the key areas of the partnership is to share green technologies and build new power stations with African countries. Globally, there are 760 million people living in areas without access to electricity in 2021, with 75% in sub-Saharan Africa and 84% in rural areas. To manage electricity shortage problems in rural Africa without increasing carbon emissions, China and African countries jointly develop power stations that use renewable energy such as solar, wind, hydro, and biomass.

In 2019, the Garissa Power Station in Kenya, which was undertaken by China Jiangxi Corporation for International Economic and Technical Co-operation (CJIC) as the general contractor, was officially put into operation. The power station can reduce annual carbon emissions by 64,000 tons, satisfying the energy demands of 350,000 people in north-eastern Kenya. In South Africa, the De Aar wind power projects (operated by China Longyuan South Africa) has two wind farms and 163 wind turbines with a total capacity of 244,500 kilowatts. The annual power generation of the project exceeds 750 million kilowatts, which is equivalent to saving more than 200,000 tons of standard coal and reducing carbon emissions by more than 700,000 tons.

China attaches great importance to clean energy cooperation with Africa and has become one of Africa's main partners in clean energy development. As the world's largest producer and exporter of wind energy and solar energy equipment, China is using its technological advantages in clean energy to help African countries increase energy supplies in rural areas and ameliorate the structure of power generation at the same time.

## **4.5 Food processing and preservation**

Although African countries possess comparative advantages in raw material costs and labor costs, they face severe food losses, waste, and contamination because of the lack of food processing and preservation technologies. Thus, there is a great need in Africa for advanced packaging solutions to extend the shelf life of food. There is also a need for post-harvest technologies to reduce food losses and waste without constructing costly cold chains. China has committed to both building food processing plants in Africa and providing food processing technical workshops to African countries. For example, Hunan signed a series of contracts with Côte d'Ivoire in February 2022, which included 11 primary processing factories in Africa for palm oil and other products. The processing factories are expected to promote local employment, increase the added value of agricultural products and drive the development of African industrialization.

In 2019, funded by the Ministry of Agriculture and Rural Affairs of China, the World Food Programme launched five South-South and Triangular Cooperation pilot projects in specific countries. Two of the pilot projects, which were launched in the Republic of Congo and Madagascar, focused on improving cassava and banana processing techniques to reduce post-harvest losses. For cassava, China shared its mechanized planting and harvesting techniques, preservation technology, as well as knowledge and experience in processing cassava products. For bananas, China shared physical, chemical, and biological preservation technologies, as well as processing techniques and their applications for banana products.

In another case, Greechain, which has logistics operations in over a dozen African countries, introduced fumigation technology from the Netherlands to Kenya so that Kenyan avocados could meet the standards of the Chinese customs and inspection authority. Greechain worked with experts to design the entire fumigation process, introduce the standard to Kenya, and successfully helped Kenyan avocados get exported to China for the first time. Now it has become the main partner of the Kenyan government's avocado project and continues to promote the African fruit to the immense Chinese market. Working on more food processing and preservation technologies, the president of Greechain hopes to bring orange, mango and other fruits to China.

## **4.6 Sanitary and phytosanitary issues**

Sanitary and phytosanitary (SPS) measures are a prerequisite for agricultural products to export to China. African agricultural outputs need to go through inspection, testing, quarantine, registration and supervision in line with China's requirements, and obtain the relevant

certification to enter the Chinese market. Due to limited resources and capacity of inspection and testing in African countries, SPS issues have posed great challenges for the export of African agricultural products. In this context, both sides are committed to tackle the hurdles through collaboration.

The first China-Africa Agricultural Cooperation Forum was held in Sanya in December 2019, during which China's Ministry of Agriculture, the African Union and African Green Revolution Alliance agreed to harmonize import & export standards between China and African countries. South Africa, Sudan, Morocco, Ethiopia, Senegal, Zimbabwe and Ghana were selected as the pilot partners to facilitate trade of agricultural products.

During the eighth Ministerial Conference of FOCAC in November 2021, China and Africa jointly formulated the Vision for China-Africa Cooperation 2035. In the section on trade promotion projects, China promised to open 'green lanes' for African agricultural exports. The General Administration of Customs of China (GACC) has actively followed up on this and implemented specific and practical measures to facilitate easier access to the Chinese market. The GACC is now considering African countries' market access applications for agricultural products on a priority basis. Once the technical materials are received, the GACC will immediately start risk assessment and proceed with work on quarantine access expeditiously. The second measure is to combine the risk assessments for certain agricultural products from the same country with similar processing techniques, and for the same type of agricultural products originating in different countries, provided that risk is under control. The third measure is to make registration easier for African companies whose agricultural products have gained market access, using flexible methods like virtual inspection or document review to speed up assessment and registration.

Under general policy support to facilitate easy access of more unique and high-quality African food and agricultural products to the Chinese market, some concrete improvements of quarantine procedures include:

- a. Authorizing the final examination of the local customs:

The GACC has decided to delegate the power of final examination and approval for quarantine inspection of some imported animals and plants to the customs directly under the GACC. The authorized customs have the power of final examination and approval for the entry of authorized animal and plant products in the customs area.

- b. Shortening product clearance time:

In view of the increasing number of imported batches of African agricultural products, Chinese customs has adopted measures such as giving priority to the examination of certificates, inspection and release, so that imported goods can be inspected on arrival, further improving the efficiency of customs clearance at ports.

c. Ensuring product quality:

Cold chain monitoring sites have been set up for fresh and perishable agricultural products such as fruits and live lobsters, and an online platform for animal and plant epidemic disease information monitoring has been set up, as well as an early warning mechanism for biosecurity risks. These efforts have played vital roles to enable coffee, cashew nuts, avocados and numerous other products from Africa to reach Chinese consumers during recent years.

## **4.7 Trade and logistic experiments**

Logistics have been hugely impacted by the COVID-19 pandemic. In 2020 and 2021, due to the labor shortage and rising oil prices, logistics costs surged due to greater demand for goods in the United States of America and Europe. As a result, expenses related to shipping have concurrently risen. Border closures and travel restrictions were adopted regionally and internationally to contain the spread of COVID-19. Poorly developed logistics and transport infrastructures reduce opportunities for integration and adversely affect trade costs. The majority of rural areas of production are still cut off as a result of a dearth of information or inadequate transport infrastructure. Despite these hurdles, the trade of agricultural products between China and Africa has witnessed growth in volume and variety.<sup>55</sup>

Some experiments have been carried out via the platform of the China-Africa Economic and Trade Expo (CAETE), which was established in Hunan Province in 2019. After becoming a hub for bilateral economic exchange and trade, Hunan has taken substantial measures to build a more efficient and resilient logistic network between China and Africa in response to the challenges of COVID-19.

The first China-Africa rail-sea express train began operation in September 2021. It departed from Zhuzhou in Hunan Province for Guangdong Province, where containers on the train would be transferred onto a ship to Mombasa, Kenya. The train marked the launch of a new sea-rail logistics route linking cities in and around Hunan Province with African countries, effectively

---

<sup>55</sup> Nyabiage, J. (2022). Why Chinese demand for African imports might defy Covid lockdowns, supply chain snarls. South China Morning Post.

shortening shipping times and lowering logistics costs. The new sea-rail logistics model shortens the shipping time from China to East Africa by 10 days, and to West Africa by 9 days, saving 3% of transport costs.

Soon afterwards, the first direct cargo flight to Africa from Hunan began operating in July 2022. This is a cargo flight route linking Changsha, Hunan and Addis Ababa, Ethiopia. The first flight was loaded with 95 tons of goods, including e-commerce products and high-tech medical and other value-added products. The opening of the Changsha-Addis Ababa route will greatly improve the efficiency of transportation between Hunan and Africa, providing easier access to Hunan products for people in Africa and vice versa.

## **4.8 Culinary culture and trends of Chinese consumers**

Chinese people have a distinctive food tradition and taste preferences, but their culinary culture has also witnessed remarkable changes through interaction with other countries. Chinese consumers with increased buying power are more concerned with the nutrition of food and diversity of food choices now than before. Chinese consumers prefer more balanced and organic healthy diets, preferring quality food even if prices are higher. This shift in Chinese consumers' behavior has led to a growing demand for African agricultural products and created trade opportunities for products growing in favorable natural environments.

As Chinese consumers have become more exposed to international trends, they have also developed a taste for coffee, with the beverage now widely available in cafés and restaurants across the country. China's coffee market has grown by 31% and 'is projected to increase at a compound annual growth rate of 9.63% between 2022 and 2025.'<sup>56</sup> One of the key drivers of growing coffee consumption in China has been the rise of a young urban middle class with disposable income. These consumers have been drawn to the perceived sophistication of coffee culture, with many seeing it as a way to signal their cosmopolitan tastes and international outlook.

Another trend that has taken hold in China in recent years is the consumption of herbal teas from Africa. Made from a variety of herbs and plants, these teas have a reputation for being healthy and medicinal, with many Chinese consumers attracted to their antioxidant properties and potential to improve digestion. One popular type of African herbal tea in China is Rooibos

---

<sup>56</sup> Giulia Interesse, "China's Coffee Market: Production, Consumption, and Investor Prospects", China Briefing News, 13 December 2022, <https://www.china-briefing.com/news/chinas-coffee-market-production-consumption-and-investor-prospects/>

tea, which is often marketed in China as a caffeine-free alternative to traditional green and black tea. In addition to primary products like coffee and tea, enterprises are striving to introduce higher quality and distinctive African agricultural products to the Chinese market.

The general manager of Greechain demonstrated his confidence in Africa's raw materials, saying, 'the dried mango from Uganda, which is being imported by us, is the best of its kind in the Chinese market', and, 'the avocados from East Africa have more nutrition and fat than those from Latin America, the pineapples there have better taste than the Asian variety.'<sup>57</sup> In his view, Chinese consumers will become more aware of and comfortable with African food products if they are branded correctly. Greechain now sells Kenyan avocados through a well-known fruit tea franchise and Alibaba's offline grocery stores, building up a trendy and reliable reputation. African countries are using tactics like influencer marketing to increase trust and interest among Chinese consumers as well. With this growing engagement from both sides, many Chinese consumers have responded positively to more African products. The Chinese government has encouraged such exchanges by promising to open 'green lanes' for African food products, and many countries on the continent have seen similar outcomes to Kenya. This policy focus has seen a growth in market share for items such as Tanzanian sesame, South African pears and citrus, and Rwandan chilis. Because of seasonal differences affecting growing times, such trade can benefit both sides. Though currently relatively small, both sides hope to continue robust growth and more developed supply chains.

## 4.9 Expanding e-commerce

While the outbreak of COVID-19 impeded traditional people-to-people trade, it promoted the boom of e-commerce in Africa. E-commerce revenue in Africa reached 27.97 billion dollars in 2021 and is still rising rapidly.<sup>58</sup> China not only fosters African e-commerce development by being a powerful e-trading partner, but also boosts African e-commerce expansion technologically in two ways. First, China helped several African countries to establish e-commerce platforms including Kilimall, Chinabuy, and Amanbo, which all own a considerable market share. These e-commerce platforms provide African countries with a digital economy system and e-commerce ecology, allowing African companies to participate more easily in global trade. Secondly, China helped construct mobile payment systems and apps to

---

<sup>57</sup> Interview, Ji Dongping, Greechain General Manager, Shanghai February 2023

<sup>58</sup> Statista. E-commerce revenue in Africa in 2017 to 2025, 2022[2022-10-18]. <https://www.statista.com/statistics/1190541/e-commerce-revenue-in-africa/>



strengthen mobile payment cooperation with Africa, and in turn improved the China-Africa cross-border payment system which is the impetus of the boom of e-commerce in Africa.

China also brought the Electronic World Trade Platform (eWTP) into Africa. Some African countries have used eWTP to bring their products closer to Chinese consumers. In November 2018, the Rwandan government and Alibaba Group launched eWTP in Kigali, becoming the first African country to launch the platform. The two sides pledged to cooperate in e-commerce, electronic payment and tourism. Sales of Rwandan coffee in the Chinese market have increased by 40% since the signing of agreement.<sup>59</sup> In 2019, relying on the eWTP cooperation framework, Hema, Alibaba's grocery retail branch, brought Rwandan habanero peppers to China. This increase in demand led to the foundation of the first Hema Village. Prior to massive planting of the habanero peppers, Hema carefully studied the taste of this kind of chili and made biotechnological adjustments to better suit the taste preferences of Chinese people. This improvement ensured that the peppers could win the market share in the Chinese market. Indeed, in January 2020 alone, Hema ordered more than 60 tons of habanero peppers from Rwanda, increasing the income of Hema Village farmers by five to six times.<sup>60</sup>

---

<sup>59</sup> ChinaDaily. 卢旺达咖啡商：eWTP 要帮助卢旺达从受害者走向胜利者，所以我来到杭州，2019[2019-1-25]. [http://caijing.chinadaily.com.cn/2019-01/25/content\\_37431735.htm](http://caijing.chinadaily.com.cn/2019-01/25/content_37431735.htm)

<sup>60</sup> Global Times. 中国数字农业惠及非洲卢旺达“盒马村”逆袭，2020[2020-6-17]. <https://tech.huangiu.com/article/3yqITOIbI5W>

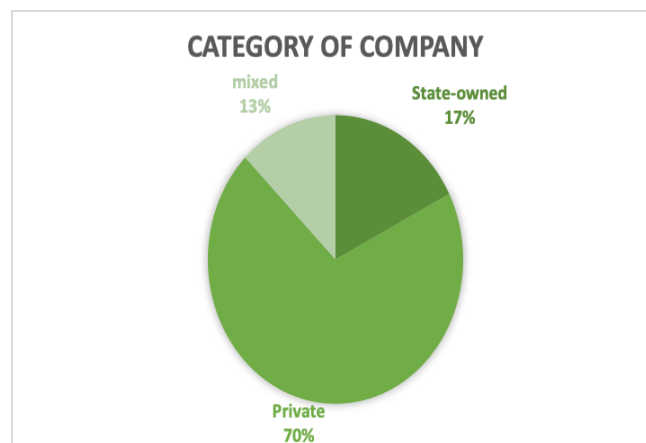
## Chapter 5: Survey of Chinese enterprises in Africa's agricultural sector

Through an online platform, we have conducted 40 surveys on Chinese enterprises that operate in Africa's agricultural sector between October 2022 and March 2023. The enterprises were selected at random, mainly through the assistance of the International Trade Centre, Hunan Overseas Home Co. and the researchers' own connections. Having 27 questions in total, the questionnaires are divided into three categories: enterprise information, business operation, and views on future and challenges. The outcome of the surveys, as presented below, can help readers better understand the current situation of Chinese agricultural engagements as well as grasp the development dynamics.

### 5.1 Enterprise information

#### 5.1.1 Company ownership

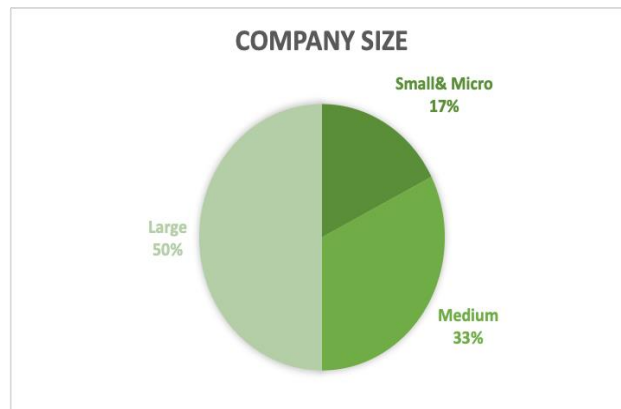
Among participating companies, state-owned enterprises and private enterprises account for 17% and 70% respectively. The remaining 13% of the companies are mixed enterprises, namely with public-private partnership or joint-venture.



#### 5.1.2 Company size

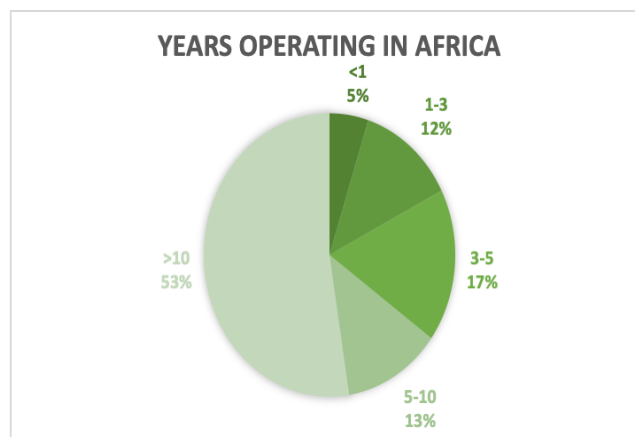
The companies surveyed are predominantly large and medium-sized enterprises, accounting for 50% and 33% respectively, with only 17% being small and micro enterprises. Large enterprises are defined as those with annual revenue over 20 million RMB, medium-sized

enterprises as those with annual revenue of 5–20 million RMB, and small enterprises have annual revenue of less than 5 million RMB.



### 5.1.3 Years of operation in Africa

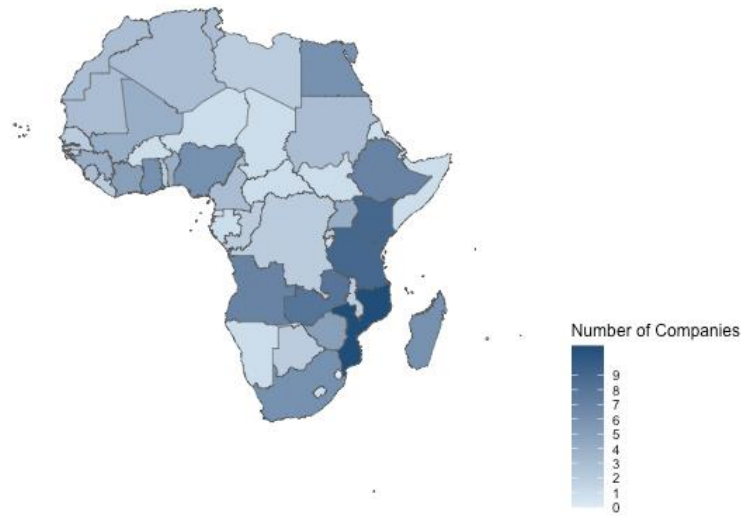
Most of the surveyed companies have been operating in Africa for significant periods of time, with 53% working in Africa for over 10 years and 13% for 5–10 years, suggesting that Chinese agricultural companies have now established their bases in Africa.



### 5.1.4 Country distribution

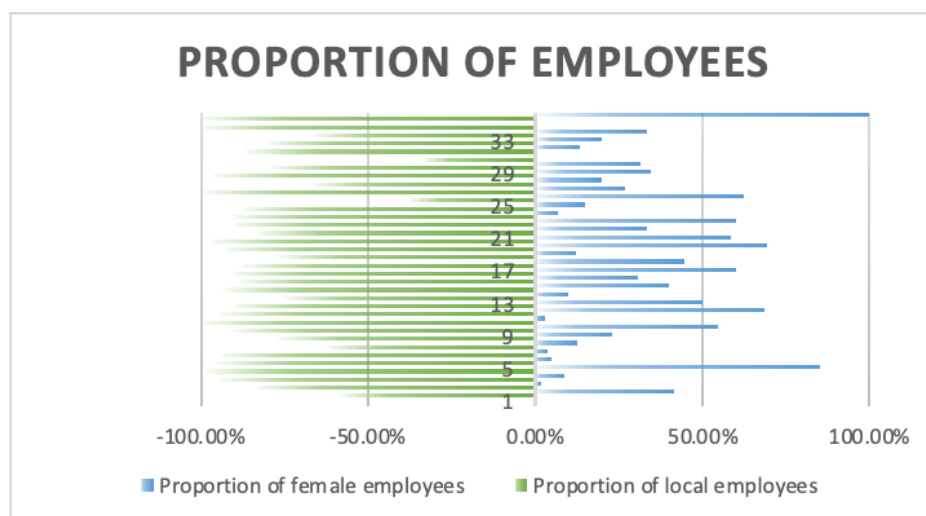
The companies surveyed have their footprints in 51 African countries. The only three countries which are not covered are Comoros, Sao Tome and Principe, and Eswatini. More than half of the companies do not limit their operations to one country. Countries in East Africa and along the Gulf of Guinea are the most preferred destinations for these companies. Mozambique, with

11 companies in operation, is the most popular country, followed by Kenya and the United Republic of Tanzania, which have 9 companies invested.



### 5.1.5 Number of employees

The surveyed companies report to have employed 21,390 workers in total, with four enterprises employing more than 1,000 people. The firms report to have employed 17,273 local workers, accounting for 81% of the entire work force. The proportion of female employees is generally low. The companies employ 5,513 African female employees, which is equivalent to 32% of total local employees.

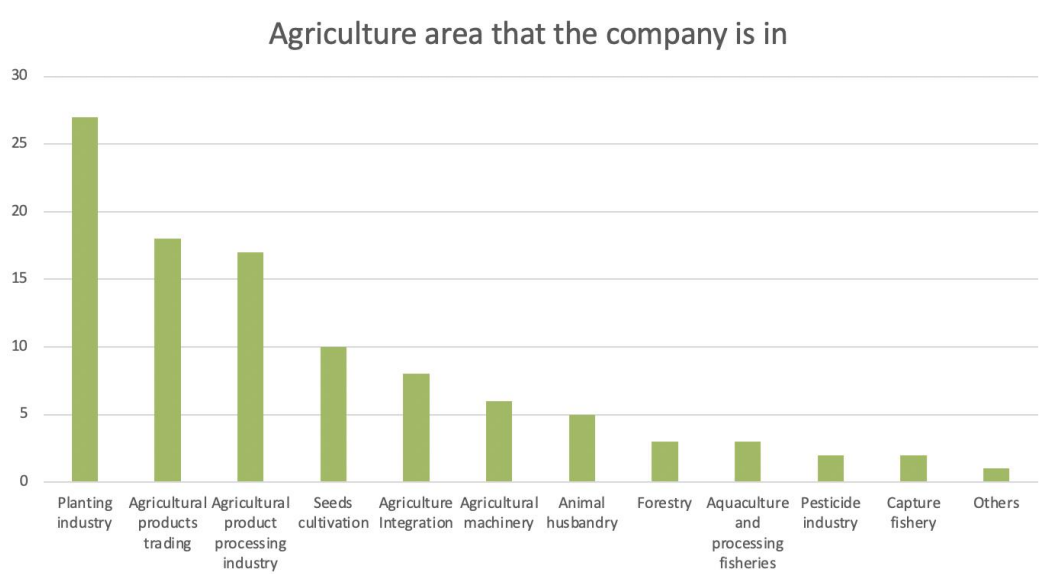


Note: Only 34 samples were included in the analysis due to data anomalies.

## 5.2 Business operation

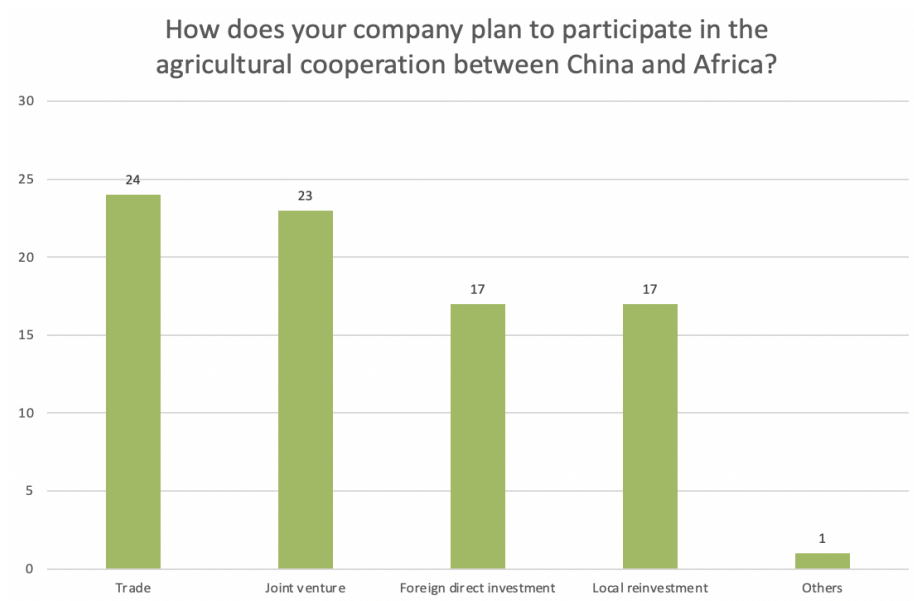
### 5.2.1 Agricultural subsector

The questionnaire asked the companies in which agricultural subsector they are operating. Many companies chose 2–4 subsectors, with the maximum number of areas being 6, signifying that agricultural investors prefer to work in multiple areas rather than concentrating on one area. Most companies are in the fields of planting, agricultural product trading, and agricultural product processing.



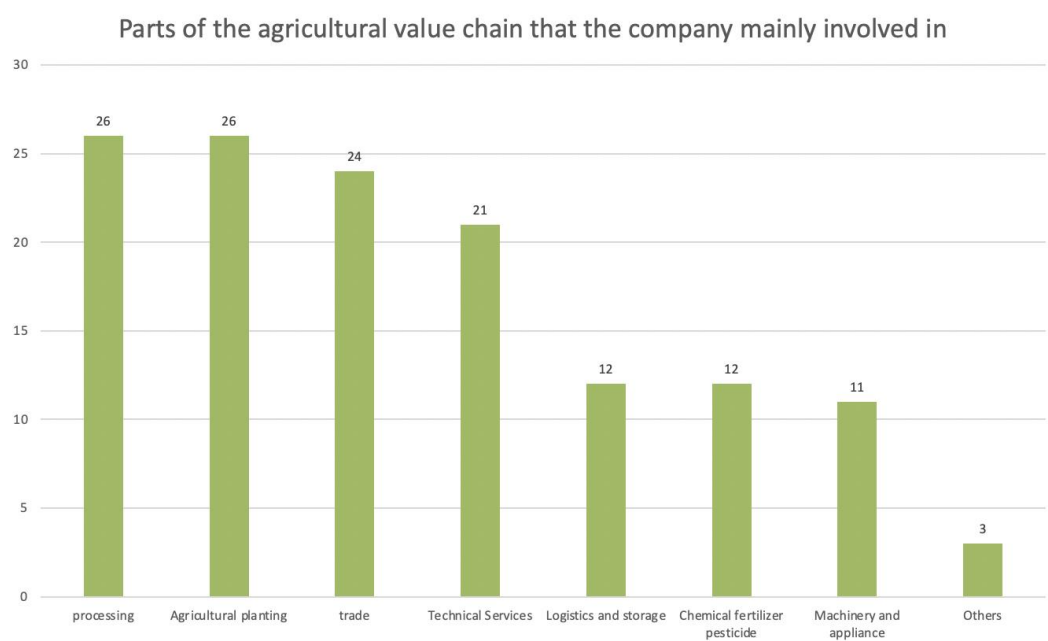
### 5.2.2 Modality of engagement

Most companies have two or three forms of operation. The top two answers were trade and joint venture, followed by foreign direct investment and local reinvestment. Only one company indicated that it is engaging with Africa's agriculture through finance cooperation.



### 5.2.3 Value chain involvement

Most companies reported that they were involved in three or four sections of the agricultural value chain. The top three sections that were chosen were processing, agricultural planting and trade. This result confirms that Chinese agricultural investments tend to be multifaceted rather than specialized in one field.



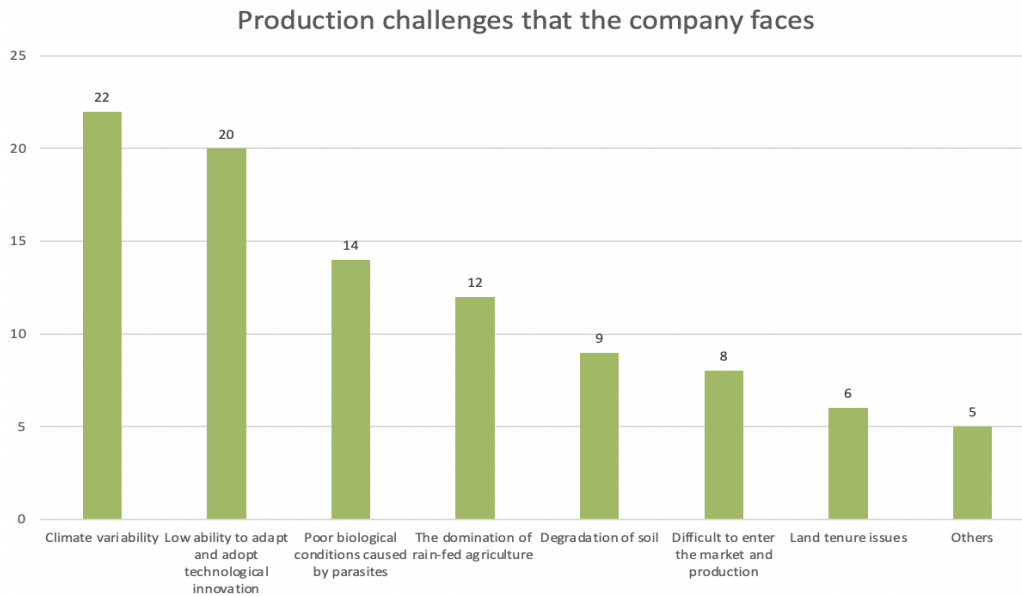
## 5.2.4 Target Markets

More than half of the surveyed companies sell in African domestic or regional markets. For the companies that chose 'others', their target market is either the Middle East or they do not have a market, since they are aid projects.



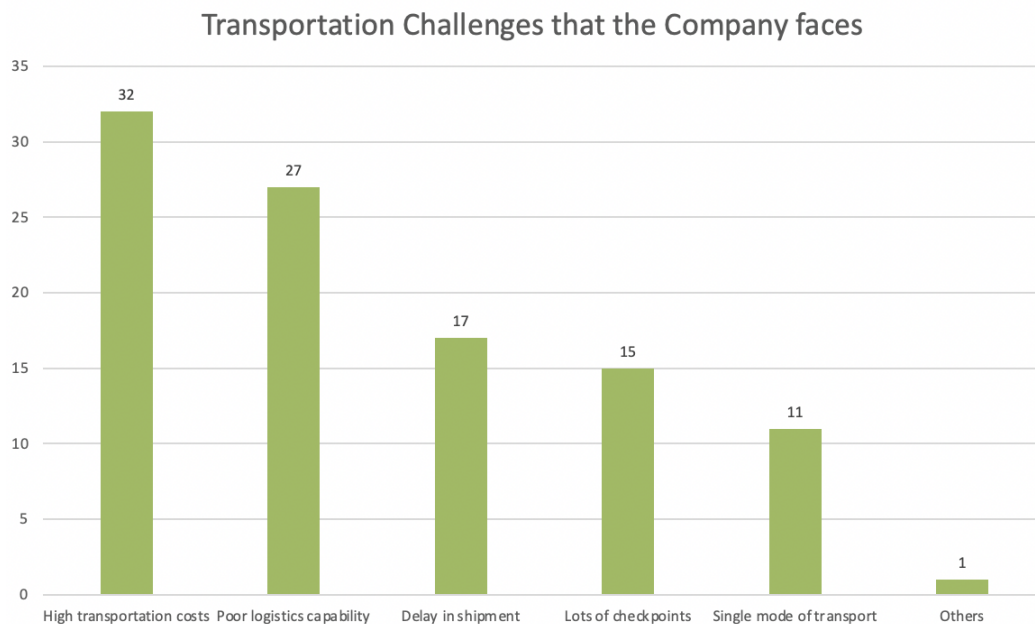
## 5.2.5 Challenges in Production

The top three answers to the question of challenges in production were climate variability, low ability to adapt to and adopt technological innovation, and poor biological conditions caused by parasites. Different natural and social environments pose the biggest challenges to the agricultural production of Chinese enterprises in Africa. Land ownership was not a central issue, perhaps because most Chinese investors do not directly acquire land to farm. Among the other options, the interviewees mention the rising price of raw materials, resource degradation and the lack of proper equipment maintenance service as significant challenges.



## 5.2.6 Transportation Challenges

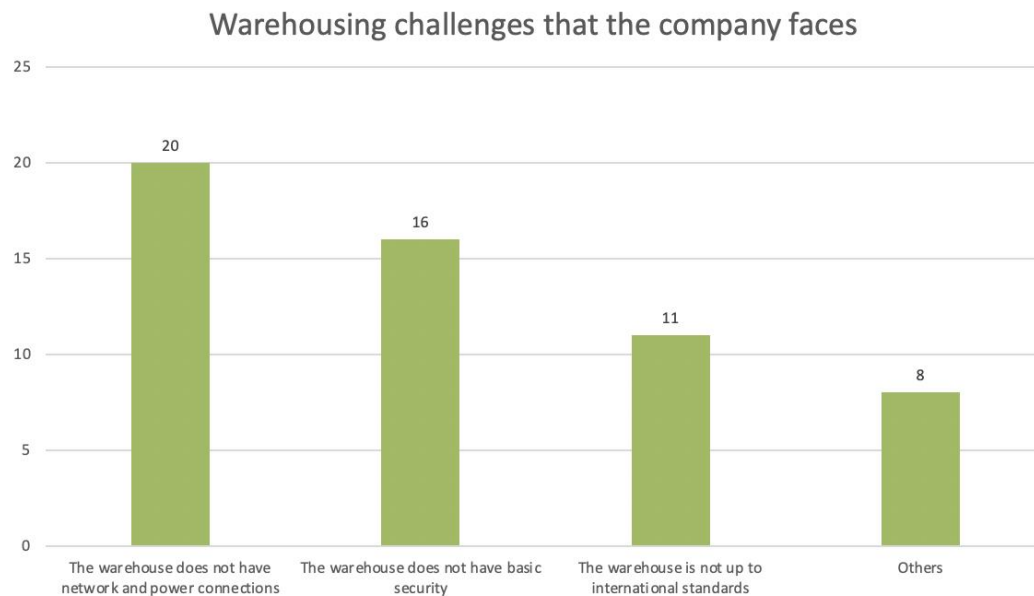
We asked in particular about difficulties related to transportation, as this is a common bottleneck in Africa. The top two answers were high transportation costs and poor logistics capability, indicating deficient infrastructure and underdeveloped logistic suppliers. Apart from the listed choices, one firm mentioned challenges in quality control of goods in transit.





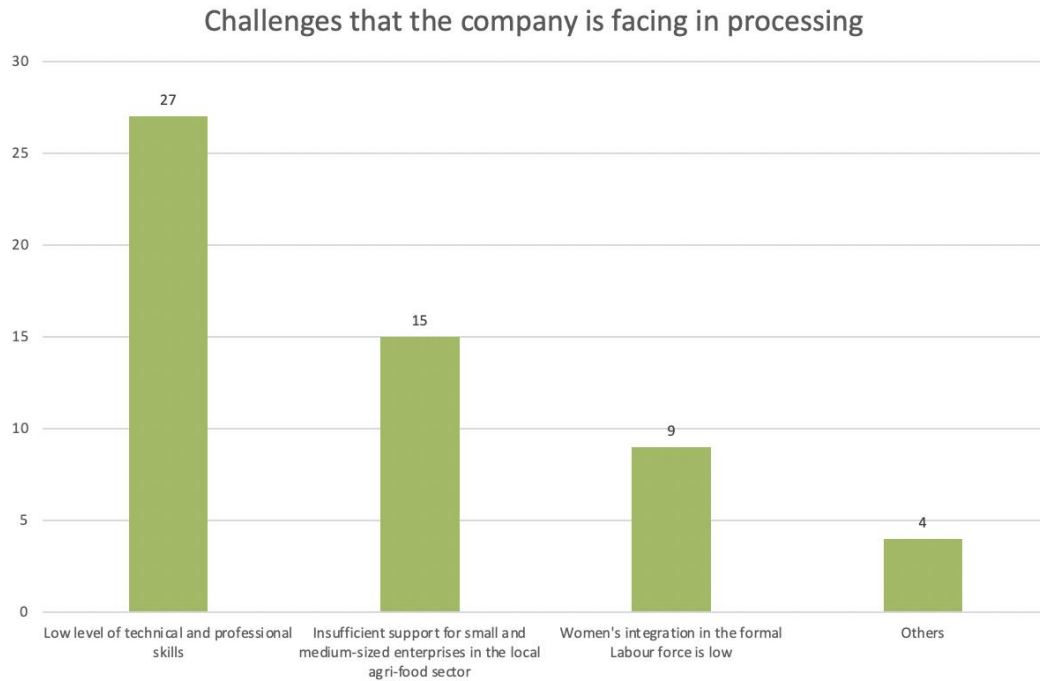
### 5.2.7 Warehousing challenges

We asked about difficulties related to warehousing, as this may affect storage and further processing of agricultural products. The most frequently selected answers were the lack of power connections and the lack of basic security of warehouses, suggesting that the warehouses cannot preserve goods for extended periods. One company also mentioned the high costs of warehousing as an obstacle.



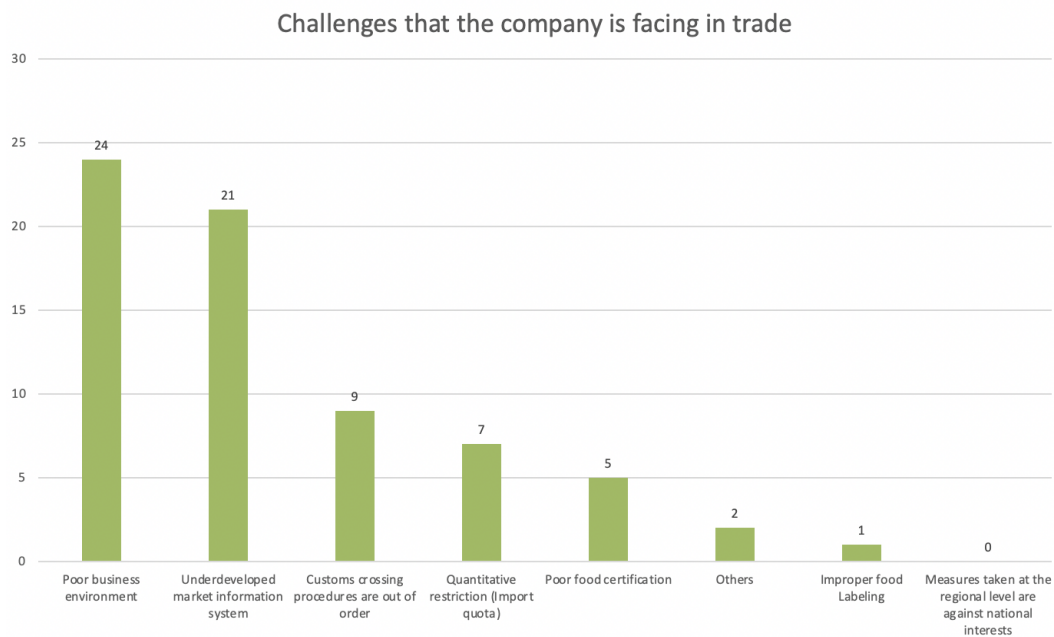
### 5.2.8 Challenges in processing

We asked about difficulties related to processing agricultural products to identify the barriers for adding value to agriculture. The top challenge selected by the companies was the low level of technical and professional skills. Another challenge is insufficient support for small and medium-sized enterprises in the local agrifood sector, suggesting that government policy neglects this aspect of the sector.



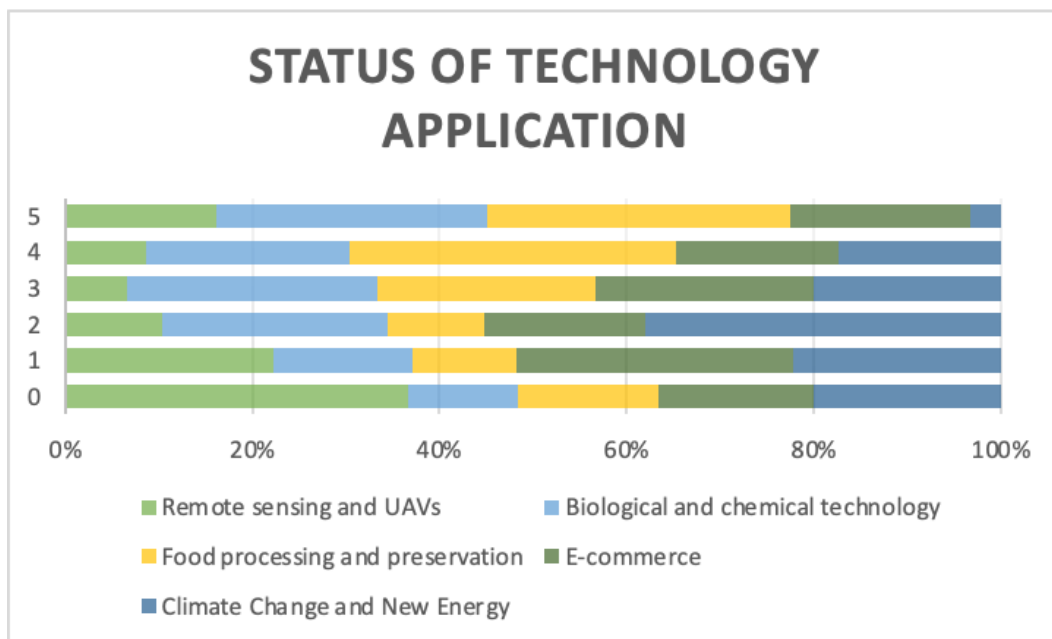
## 5.2.9 Challenges facing trade

The two most reported challenges in the trade phase were poor business environments and underdeveloped market information systems. Some companies mentioned malfunctioning cross-border processes, poor certification and the high entry barriers in Africa. This shows that an orderly and well-informed market is a primary concern for Chinese businesspeople.



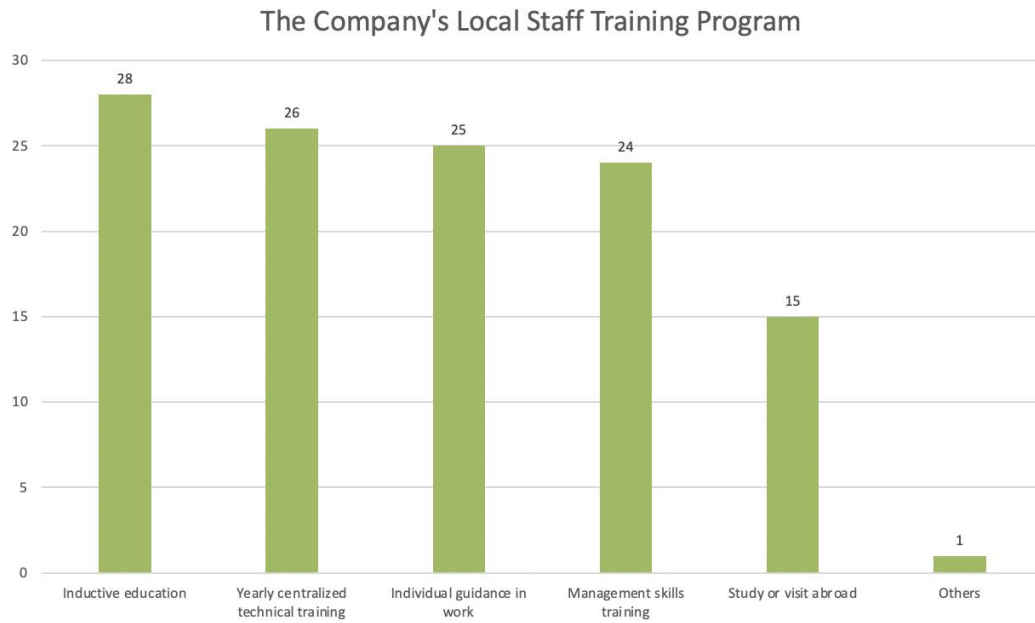
### 5.2.10 Technology application

Overall, adoption of technology is relatively low in the surveyed companies, with the average score for the use of each technology being below three (on a scale of 0–5, in which 0 indicates no usage, and 5 indicates high frequency of usage). The most common applications are food processing and preservation technologies, followed by biological and chemical technologies and e-commerce technologies. The least used technologies are technologies related to climate change and new energy as well as remote sensing and unmanned aerial vehical (UAV) technologies. This indicates that the application of technology by the surveyed companies is relatively concentrated at the lower end of the value chain.



### 5.2.11 Local staff training

We asked about various forms of training given to local staff. Most of the surveyed companies give trainings to employees at the beginning of their work as well as regularly throughout operations. It is notable that management skill training is also quite common, indicating that Chinese firms use local managers broadly in their operation. Only one Chinese company responded that it does not provide training to local staff.

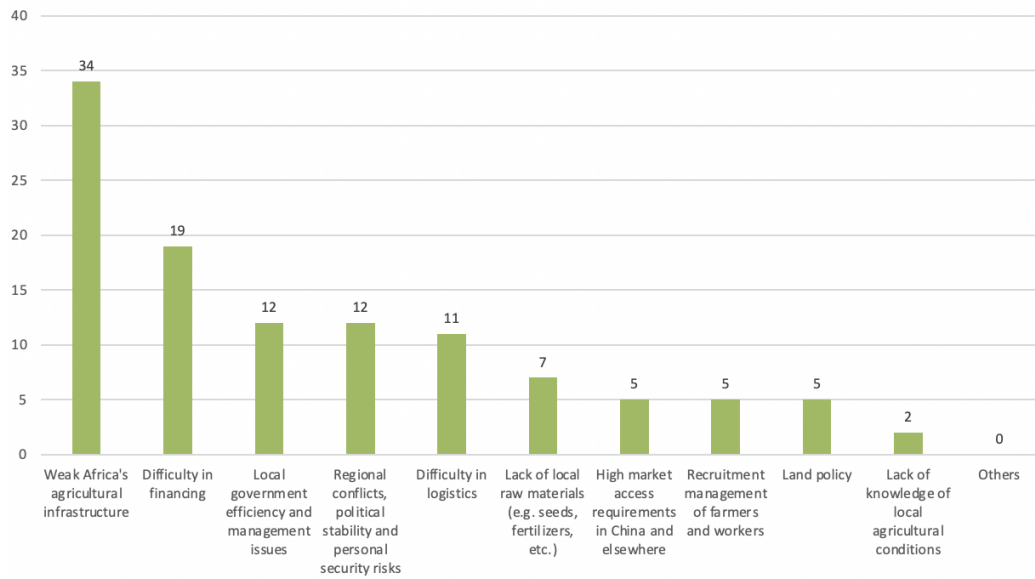


## 5.3 Views on future and challenges

### 5.3.1 Key challenges and concerns

When asked about major challenges facing the companies in Africa's agricultural sector, the top three answers were weak agricultural infrastructure, difficulties in financing, and local government inefficiency and administration issues. Regional stability and logistic difficulties also rank high.

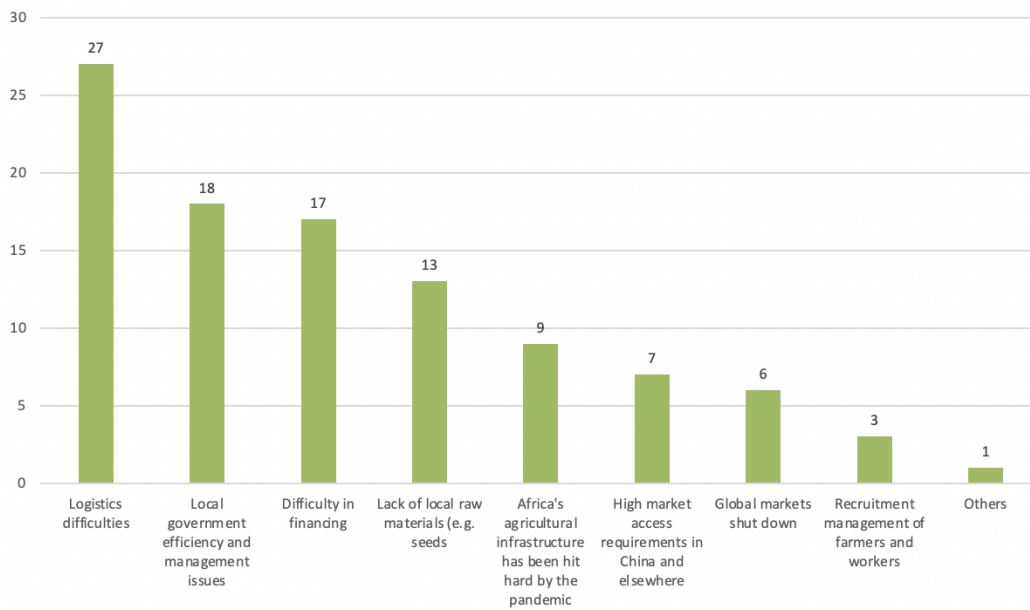
### 3 major Challenges for the Company in Africa Agriculture



### 5.3.2 Challenges during the COVID-19 pandemic

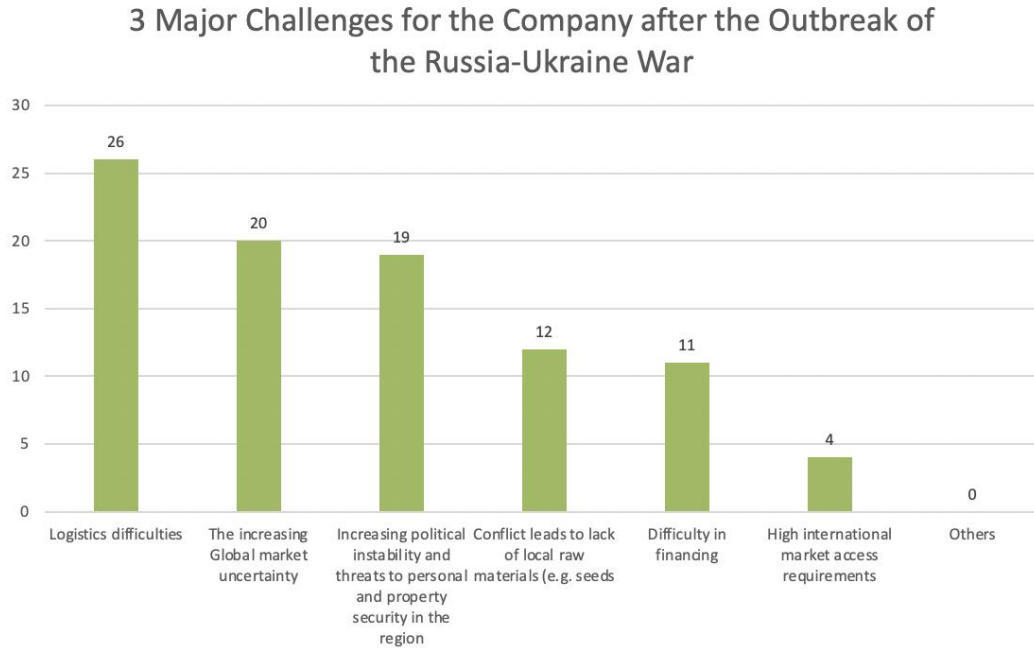
The top three concerns during the COVID-19 pandemic were logistics difficulties, local government inefficiency and administrative issues, and difficulties in financing. Apart from the apparent barriers to transportation, the business environment seems to have deteriorated as well.

### 3 Major Challenges for the Company during the Covid Pandemic



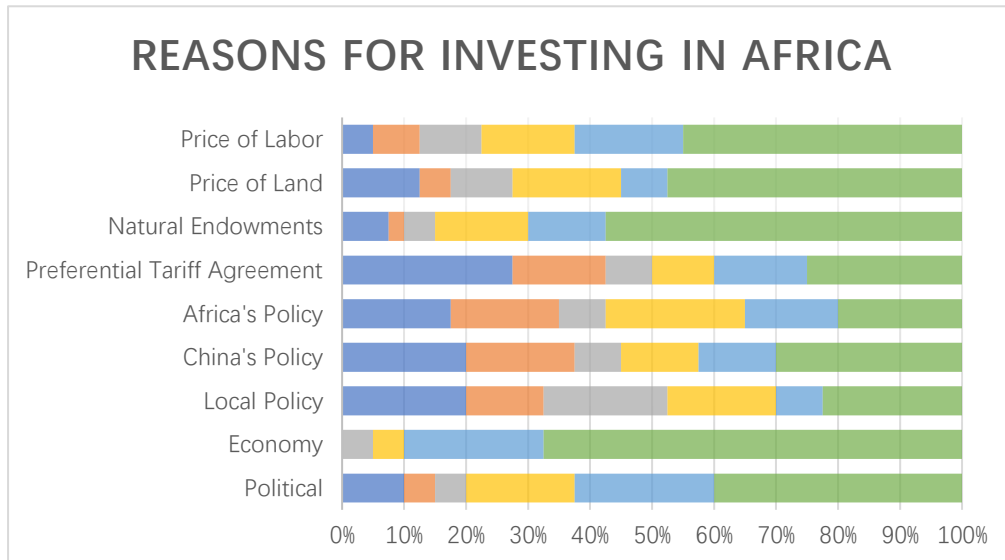
### 5.3.3 Challenges posed by the Russia-Ukraine Conflict

The top three reported challenges posed by the Russia-Ukraine conflict were logistics difficulties, increasing global market uncertainty, and increasing political instability and threats to personal and property security in the region. The conflict raises more concerns regarding security and stability.



### 5.3.4 Reasons for Investing in Africa

Natural endowments and market potential are the primary reasons for the companies surveyed to invest in Africa. Low labor and land prices are widely attractive for Chinese companies, too. By comparison, companies are less likely to be driven to invest by tariff incentives and Africa's policies.



### 5.3.5 Key issues for strengthening China-Africa agricultural cooperation

Participants suggested multidimensional demands for strengthening China-Africa agricultural cooperation, most of which need to be addressed through policy.

In terms of technology, it is recommended that technology exchanges and support from local governments be strengthened, and that support for African agricultural enterprises, agricultural machinery, fertilizers, and other related areas be increased.

In regards to agricultural products, it is recommended that infrastructure construction, such as irrigation, agricultural machinery, and agricultural logistics be strengthened to enhance the efficiency and quality of agricultural production. Moreover, targeted cooperation across the entire industry based on local resource endowments should be undertaken to achieve mutually beneficial cooperation.

With regards to localization, issues such as the shortage of US dollars and Chinese RMB, the personal safety of Chinese employees, and inconvenient transportation must be resolved. Localization issues also encompass crop seed research and development, production, promotion, and talent localization.

In terms of financing, it is recommended that Chinese enterprises increase their domestic financing capabilities, and that designated financial institutions provide clear financing directions for enterprises. The government should increase policy support and invest heavily in

developing a complete supply chain. As Africa's infrastructure lags behind, investment in planting, processing, and logistics must occur simultaneously.

In terms of legal protection, policies for the sale and preferential treatment of agricultural products should be strengthened to improve the quality of agricultural products to meet China's requirements. Additionally, long-term investment in integrated operation of infrastructure, planting, and processing can save costs and improve efficiency. It is crucial for governments and enterprises to work collaboratively to develop policy support, ensure political stability, and establish consistent policies.

In terms of the business environment, the surveyed enterprises expect to improve market access and provide support for high-value-added African agricultural products with development potential, such as transparency regarding access procedures and simplification of processes. Moreover, the experience of developing Beidahuang district in China should be introduced to the local area.



Figure 4: Word cloud of key issues for strengthening China-Africa agriculture cooperation

### 5.3.6 Actions to be taken

The survey provided respondents with eight options for actions that are urgently needed in order to address existing problems. Of these, the companies identified the top two most pressing issues as 'development of local manufacturing capabilities' and 'promoting supply



chain localization and enhance the added value of products.’ This suggests directions for future China-Africa cooperation.

The options were as follows:

Option 1: Provide companies with adequate access to financing to bridge the funding gap

Option 2: Promote supply chain localization and enhance the added value of products

Option 3: Address Tariff and Non-Tariff Trade Barriers to Promote Regional Economic Growth in Africa

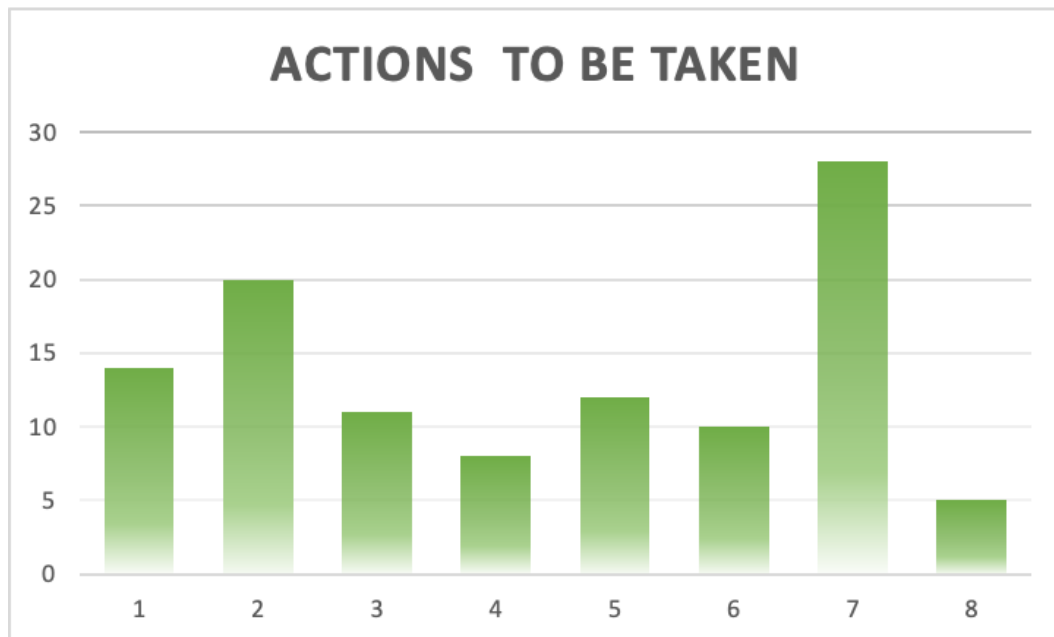
Option 4: Integrate foreign and local companies in the supply chain process to form a strong complementary

Option 5: Upgrade the quality of continental and regional infrastructure and improve regional trade

Option 6: Increase training centers and promote local participation

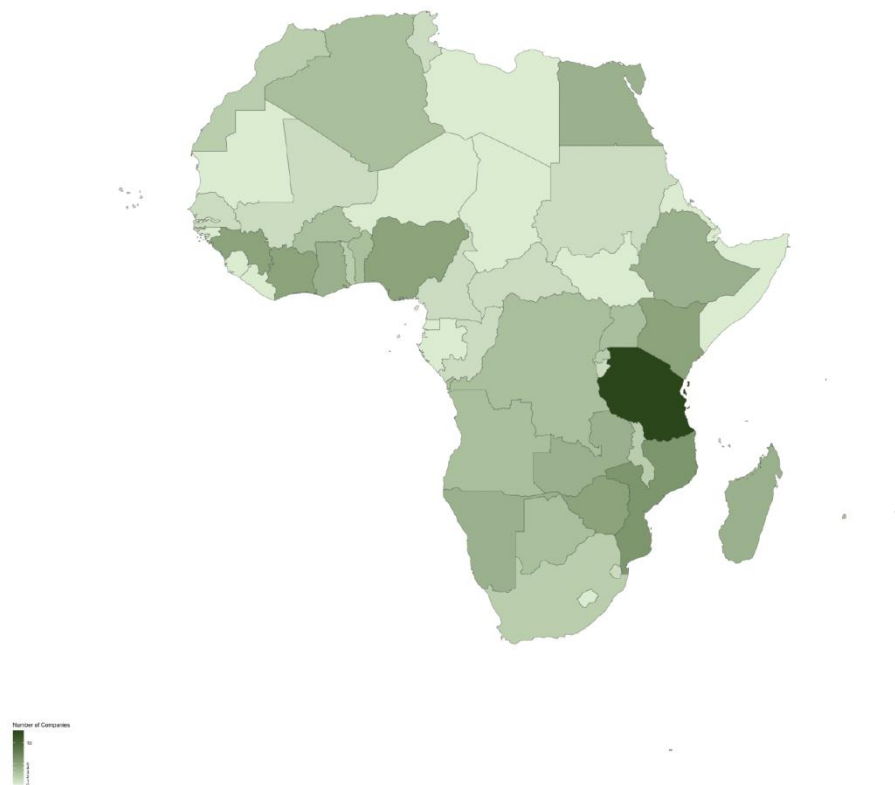
Option 7: Develop local manufacturing capabilities

Option 8: Adopt more digital solutions to fuel supply chain growth



### 5.3.7 Future expansion

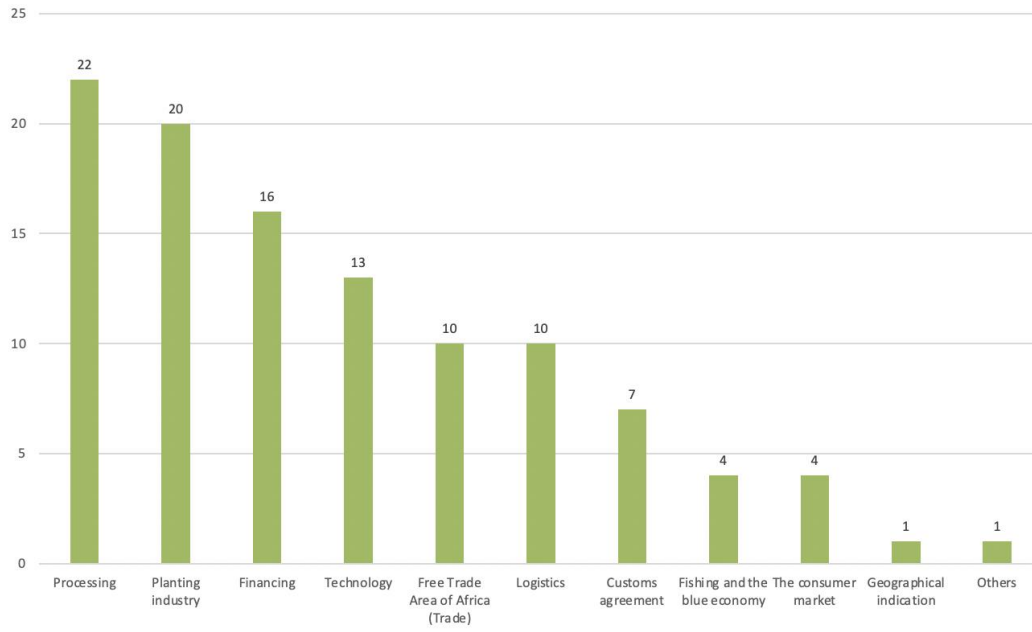
The majority of surveyed companies (70%) are interested in expanding to other African countries in the future, while the rest want to make steady progress in the countries where they already operate. The countries for potential expansion are concentrated in Eastern Africa and the Gulf of Guinea coast, as these are the regions with most Chinese agricultural companies in operation at present. The United Republic of Tanzania is the most popular destination, with 13 companies planning to expand their business there.



### 5.3.8 Opinions on priority fields in African agricultural development

Most of the surveyed companies selected processing as the most important field for future development, showing Chinese enterprises' emphasis on value-added processing. Planting and financing rank second and third. This shows that Chinese firms hope to mobilize more funds to realize the farming potential in Africa's vast land. In addition to the listed options, one company also mentioned the speeding up of access procedures for African agricultural exports to China as a priority.

### The company's opinion on 3 most priority areas in African agriculture developing



## Chapter 6: Conclusion and policy suggestions

Having reviewed the historical evolution, current state and development direction of China-Africa agricultural cooperation, this report presents an overview of the coexistence of challenges and opportunities as well as the coordination of multi-faceted efforts. It is true that rural areas in Africa have immense and intertwined obstacles hindering its development. The lack of infrastructure, funding, information, skills and supporting industries is prevalent and cannot be solved within a short period. However, cooperation between China and Africa in the agricultural sector sustains strong momentum despite the challenges. Moreover, the bilateral collaboration clearly demonstrates the characteristics of being both comprehensive and diverse, with government agencies, research institutes and numerous enterprises from various fields involved.

Although the COVID-19 pandemic and the Russia-Ukraine conflict made significant impacts, the cooperation on the ground did not pause. From seed research, planting and infrastructure to processing, trading and marketing, the stakeholders have found many innovative and pragmatic approaches to overcome difficulties. Compared with the past, the ongoing collaboration demonstrates four new features. First, science and technologies such as gene sequencing, remote sensing, drones, fumigation, and acid delinting have been playing a more important role in producing and processing agricultural products and have stimulated the growth of the agricultural cooperation. Fumigation and delinting do not require enormous research funding, but they facilitate business operations with great effectiveness as they address challenges in practice. By contrast, gene sequencing and biotechnology may have revolutionary impacts on the agriculture sector, but testing requires a lot of time and the related business models are not yet clear. China's immense industrial capacity also supports the application and dissemination of technology, as the cost of equipment is a key factor in the agricultural sector, which does not have a high margin.

Second, recent agricultural projects focus on elevating added value through efforts in processing, branding and specialization. Chinese investors with international market experience have not only opened channels for African agroproducts to export, but have also introduced knowledge and capacity for agroprocessing. They refine quality, harmonize standards and build a reputation for African products from the perspective of international clients. The movement towards more sophisticated sections along the value chain is encouraging for the entire African agricultural sector.

The extension of the value chain is partly driven by rising agricultural exports to the Chinese market. With growing income, Chinese consumers have developed a taste for more diverse

food varieties and higher quality. Imported fruits, vegetables and beverages are gaining popularity in this immense market, supported by social media and e-commerce. While Chinese firms become aware of market opportunities and come to Africa to seek more resources, the green lane policy agreements between China and Africa are expected to greatly facilitate the trend by reducing the time and cost of cross-border transportation.

Finally, China-Africa agricultural cooperation has witnessed enhancing sustainability in economic, social and environmental domains. Chinese companies with decades-long operation experience in Africa are now the majority. Being familiar with local societies and natural environments, they have gradually transitioned from the phase of experimental investment to the phase of knowledgeable investment, which leads to predictable and sustainable profit. Moreover, the longer Chinese people work in Africa, the better they know how to cooperate with local partners and societies. They understand local conventions and are able to avoid controversial issues of land ownership and resettlement, and they can precisely identify the needs of the local communities and contribute to long-lasting development partnerships. Ecologically, the firms eyeing long-term development tend to appreciate and preserve the natural conditions in Africa, which have increasingly become an asset. As the world's largest manufacturer of wind power and solar power equipment, China can also provide strong support for Africa to promote the use of renewable energy.

Based on these findings, this report offers three policy suggestions for bilateral stakeholders to concentrate their future collaboration efforts.

1. Enhance specialization and coordination along the agroproduct value chain. Fully utilize comparative advantages of Africa's agricultural output, such as organic products and unique seasonal timing, as well as China's strength in processing and marketing to optimize the productivity of the entire value chain and increase the value added to African agricultural products.

2. Since infrastructure is considered to be the main bottleneck and the solution cannot rely on enterprises, both African and Chinese governments should focus their investments on improving infrastructure as public goods. Improved infrastructure can significantly elevate productivity and improve the business environment. Cross-border software and hardware facilitation is particularly important.

3. Accelerate the construction of green lanes for African agricultural products to enter the Chinese market. The process was delayed due to COVID-19, as Chinese officials could not visit African countries easily for site inspection and negotiation. In the post-COVID-19 period,

bilateral governments should give priority to agricultural products that have high potential for export to China such as soybean, maize, cassava, sorghum, peanuts, nuts, meat and others.



