



# Increasing Added Value of African Products

by Promoting the Development and Transformation of Industry Chains in Africa

**Chinese Investment in Africa 2023**

**CHINA-AFRICA BUSINESS COUNCIL**



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“The energy transition has been, for several years, at the heart of the development model of the African continent. This is a great lever for strengthening the attractiveness of our Continent, with the aim of positioning it as a green industrial base at the gateway to Europe. The abundant natural resources combined with the expertise developed by several African countries have enabled the multiplication of green projects with high economic, social and ecological added value. We are optimistic about the role that Africa can play in accelerating the roll-out of China's new sustainable development model and the role that China can play in lifting Africa's green industry into the global value chain.”

**M Mohamed El Kettani**

Chairman and CEO of Attijariwafa Bank Group

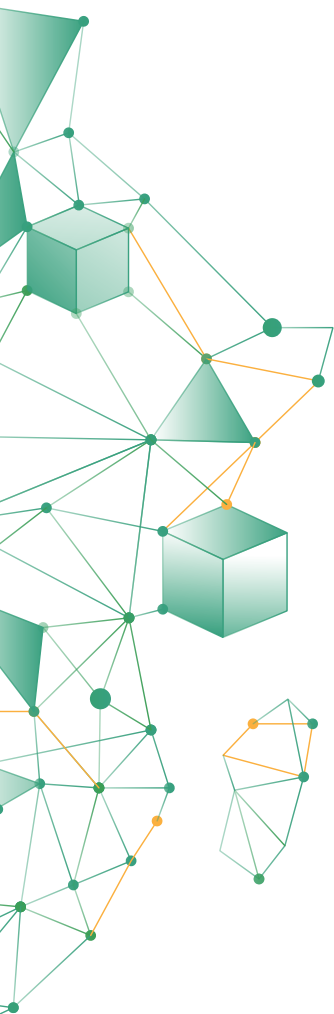
"As Africa and China stand at the crossroads of opportunity, it's the synergy between our private sectors that will light the way. By joining hands and working together, we can craft a legacy of mutual growth, innovation, and prosperity. Let's seize this moment and build a future where partnership knows no bounds."

**Kay Gabriel**

President of African Diaspora Business Council (ADBC)



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# Preface

## Let's Be Fellow Companions on the Path of Development and Revitalization

In August 2023, at the 15th BRICS Summit, President Xi Jinping of the People's Republic of China called for BRICS countries to be fellow companions on the journey of development and revitalization, oppose decoupling and supply chain disruption, and focus on practical cooperation.<sup>1</sup> In the subsequent China-Africa Leaders' Dialogue, President Xi delivered a keynote speech titled "Joining Hands to Advance Modernization and Create a Great Future for China and Africa", emphasizing once again that China has all along been a firm supporter and walking side by side with Africa on the path towards its modernization.<sup>2</sup>

The year 2023 marks the 10th anniversary of the Belt and Road Initiative and the principle of "sincerity, real results, amity and good faith", which have been China's policy ideas towards Africa, as well as the 10th anniversary of the principle of pursuing the greater good and shared interests.

Over the past decade, China and Africa have continuously opened up new directions for exchanges and cooperation, setting a model for building a global community of shared future in the new era. China has not only continued to maintain its position as Africa's largest trading partner, but also, as Africa's fourth largest source of investment, has invested in 52 countries in Africa, continuously expanding its investment fields in Africa, including infrastructure, industrial parks, agriculture and mining, labor-intensive manufacturing, and the digital economy. The investment entities are becoming more diversified, with private enterprises accounting for 70%.<sup>3</sup>

Currently, industry chains have become the focus of strategic competition among countries around the world. The African Union's Agenda 2063 proposed the great goal of promoting economic transformation in Africa and enhancing the added value of African resources. However, due to the insufficient supply of advanced production elements and high market transaction costs, the development and transformation of Africa's industry chains have been difficult, and there have been long-standing problems such as few chains, short chains, weak chains, and low product added value. As Africa's most steadfast and reliable partner, China has always been committed to aligning its Belt and Road Initiative with Agenda 2063 and the development strategies of African countries. The cooperation on the industry chains has therefore always been the focus of China-Africa cooperation.

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1 Central People's Government of the People's Republic of China. (2023). "Xi Jinping attended the 15th BRICS Leaders' Meeting and delivered an important speech." [https://www.gov.cn/yaowen/liebiao/202308/content\\_6899791.htm](https://www.gov.cn/yaowen/liebiao/202308/content_6899791.htm)

2 Qishi Network. (2023). "Keynote speech by Xi Jinping at the China-Africa Leaders' Dialogue (full text)." [http://www.qstheory.cn/yaowen/2023-08/25/c\\_1129823353.htm](http://www.qstheory.cn/yaowen/2023-08/25/c_1129823353.htm)

3 Central People's Government of the People's Republic of China. (2023). "China-Africa Belt and Road Cooperation Themed Conference was held in Ethiopia." [https://www.gov.cn/yaowen/liebiao/202309/content\\_6903048.htm](https://www.gov.cn/yaowen/liebiao/202309/content_6903048.htm)

China-Africa Business Council (CABC) has been a service provider for Chinese enterprises investing in Africa, practicing initiatives proposed at the Forum on China-Africa Cooperation. Its report *Chinese Investment in Africa (2023)* focuses on China-Africa cooperation from the perspective of industry chains. Based on identifying the advantages and constraints, opportunities and challenges of development of Africa's industry chains, the report summarizes the models and achievements of Chinese enterprises in promoting the development and transformation of Africa's industry chains, and proposes relevant ideas and recommendations, providing a useful reference for further promoting China-Africa cooperation on industry chains.

Against the backdrop in which Africa is actively exploring open and independent development and China's reform and opening-up policy has entered a new era, China-Africa cooperation on industry chains not only embodies strategic docking of the development goals of both sides in the new era, but also a key measure to leverage their comparative advantages to achieve leapfrog development. "China and Africa, through our creative explorations for modernization, are giving our answers to the questions of our times, and making joint efforts to advance the great endeavors of win-win cooperation, harmonious coexistence and shared prosperity of civilizations."<sup>4</sup>



**Wu Yanming**

Chairman of China-Africa Business Council  
President of Wynca Group



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<sup>4</sup> Qiushi Network. (2023). "Keynote speech by Xi Jinping at the China-Africa Leaders' Dialogue (full text)." [http://www.qstheory.cn/yaowen/2023-08/25/c\\_1129823353.htm](http://www.qstheory.cn/yaowen/2023-08/25/c_1129823353.htm)

# Abbreviations

<b>ACET</b>	African Center for Economic Transformation
<b>AfCFTA</b>	African Continental Free Trade Area
<b>AFDB</b>	African Development Bank
<b>ARSO</b>	African Regional Organization for Standardization
<b>AU</b>	African Union
<b>AUC</b>	African Union Committee
<b>AUDA</b>	African Union Development Agency
<b>AWA</b>	Africa World Airlines
<b>B2B</b>	business-to-business
<b>B2C</b>	business-to-customer
<b>BBC</b>	British Broadcasting Corporation
<b>BCG</b>	Boston Consulting Group
<b>BOT</b>	build-operate-transfer
<b>CABC</b>	China-Africa Business Council
<b>CAGR</b>	Compound Annual Growth Rate
<b>CFA</b>	Chartered Financial Analyst
<b>EDMI</b>	The 1st International Symposium on Economic Development and Management Innovation
<b>EPC</b>	Engineering, Procurement, and Construction
<b>EU</b>	European Union
<b>EY</b>	Ernst & Young
<b>GDP</b>	gross domestic product
<b>ICT</b>	information and communication technology
<b>LPI</b>	Logistics Performance Index
<b>NEPAD</b>	New Partnership for Africa's Development
<b>O2O</b>	online to offline
<b>OBM</b>	original brand manufacturer
<b>ODM</b>	original design manufacturer
<b>OECD</b>	Organization for Economic Co-operation and Development
<b>OEM</b>	original equipment manufacturer
<b>PPP</b>	public-private partnership
<b>S2B2C</b>	supplier to business to customer
<b>TRALAC</b>	Trade Law Center for Southern Africa
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>UNECA</b>	United Nations Economic Commission for Africa
<b>UNICEF</b>	United Nations International Children's Emergency Fund
<b>UNIDO</b>	United Nations Industrial Development Organization



# Introduction to the Report

An industry chain has a 5 layer meaning, including the point that it is naturally integrated with the supply chain and the value chain. It is a network based on supply and demand relationships and division of labor. It is composed of several enterprises and products as nodes in the form of horizontal cooperation chains and vertical supply and demand chains. The development and transformation of industry chains is essential to increasing the added value of products, making this an important path for Africa to achieve Agenda 2063. It is undoubtedly a current priority for Africa, as African countries generally face industrial problems such as a single industrial structure and low product added value.

**Africa is known as the “world’s raw material warehouse”, the “youngest continent”, and an emerging consumer power in the world.** The development and transformation of its industry chains have comparative advantages in natural resources, sufficient labor supply, and broad consumer markets in the upper, middle, and lower reaches of the industry chains. It also enjoys the edge of being a late starter in the Fourth Industrial Revolution. The new development potential brought by the restructuring of the global industry chains and the regional integration dividend given by the construction of the African continent’s free trade zone constitute three major opportunities. However, it is undeniable that the four major constraints, including insufficient supply of advanced production elements, complex and ever-changing business environment, high market segmentation and circulation costs, and insufficient coordination of trade product quality management and standards, have also brought various challenges to the transformation and upgrading of African industry chains.

**China has an important role to play here.** Under the guidance of China-Africa policy frameworks such as the Belt and Road cooperation and the Forum on China-Africa Cooperation, China can help with the development and transformation of Africa’s industry chains through industrial docking, capacity cooperation, industrial parks, industrial investment, infrastructure and industrial foundation, technology transfer, cultivating talent, demand-driven and supply-driven industry chains, institutional innovation, and practical work, which can be summarized as the six models of China’s cooperation with Africa.

Based on four proposals, the report gives recommendations to government collaboration, business engagement, and multilateral participation. In the meantime, as important participants in China-Africa cooperation on industry chains, Chinese enterprises contribute greatly to African industry chains’ development and transformation by reinforcing the foundation, forging strengths, remedying weaknesses, and filling gaps. All of the above are also efforts aimed at addressing the difficult links in the development and transformation of Africa’s industries. Investment by Chinese enterprises covers various fields including agriculture, energy and mining, manufacturing, digital economy, medicine, logistics, and infrastructure in five major regions: northern Africa, eastern Africa, southern Africa, western Africa, and central Africa.

Based on a review of African development, China-Africa cooperation models, and 90 cases including an in-depth analysis of 20 cases of Chinese enterprises investing in Africa in the case study section, the report proposes four basic ideas to promote the development and transformation of African industry chains, including “guide and strengthen the foundation”, “stabilize and strengthen industry chains”, “complement and extend industry chains”, and

“broaden and combine industry chains”. There are also specific recommendations for promoting the expansion of bilateral cooperation between the governments of China and African countries, expanding Chinese enterprises’ investment in Africa, and encouraging multilateral participation, involving different entities, such as governments, enterprises, and civil society organizations.

#### **Aims and objectives:**

This report is prepared and published by the China-Africa Business Council (CABC). Compiled by CABC along with the China-Africa Economic & Trade Research Institute, it is a study on how to achieve the development and transformation of African industry chains and increase the added value of African products.

It explores the impact of China-Africa policy frameworks and existing cooperation models on African industry chains by examining development processes, demand, strengths, opportunities, and challenges. In case studies, it focuses on the role of Chinese enterprises in the development and transformation of African industry chains, and identifies China-Africa cooperation potential in this regard.

#### **Methodology:**

This report draws conclusions by collecting authoritative information from multiple sources and using document analysis and case studies.

The documents and material used for analysis include but are not limited to policy documents, research papers, and statistics and other information from industry participants, prominent institutions, and multilateral and regional financial organizations.

Case studies in the report use data from surveys of the members of China-Africa Business Council (CABC) or from relevant public information, many of which are representative and reputed enterprises in different fields such as agriculture, energy, mining, manufacturing, digital economy, and medicine.

Content analysis, comparative research, and other methods are also used in the report, such as in the analysis of China-Africa policy frameworks in Chapter 2.

#### **Organization of the report:**

Chapter 1 provides an overview of Africa’s industry chains and product added value, including an analysis of the strengths and weaknesses.

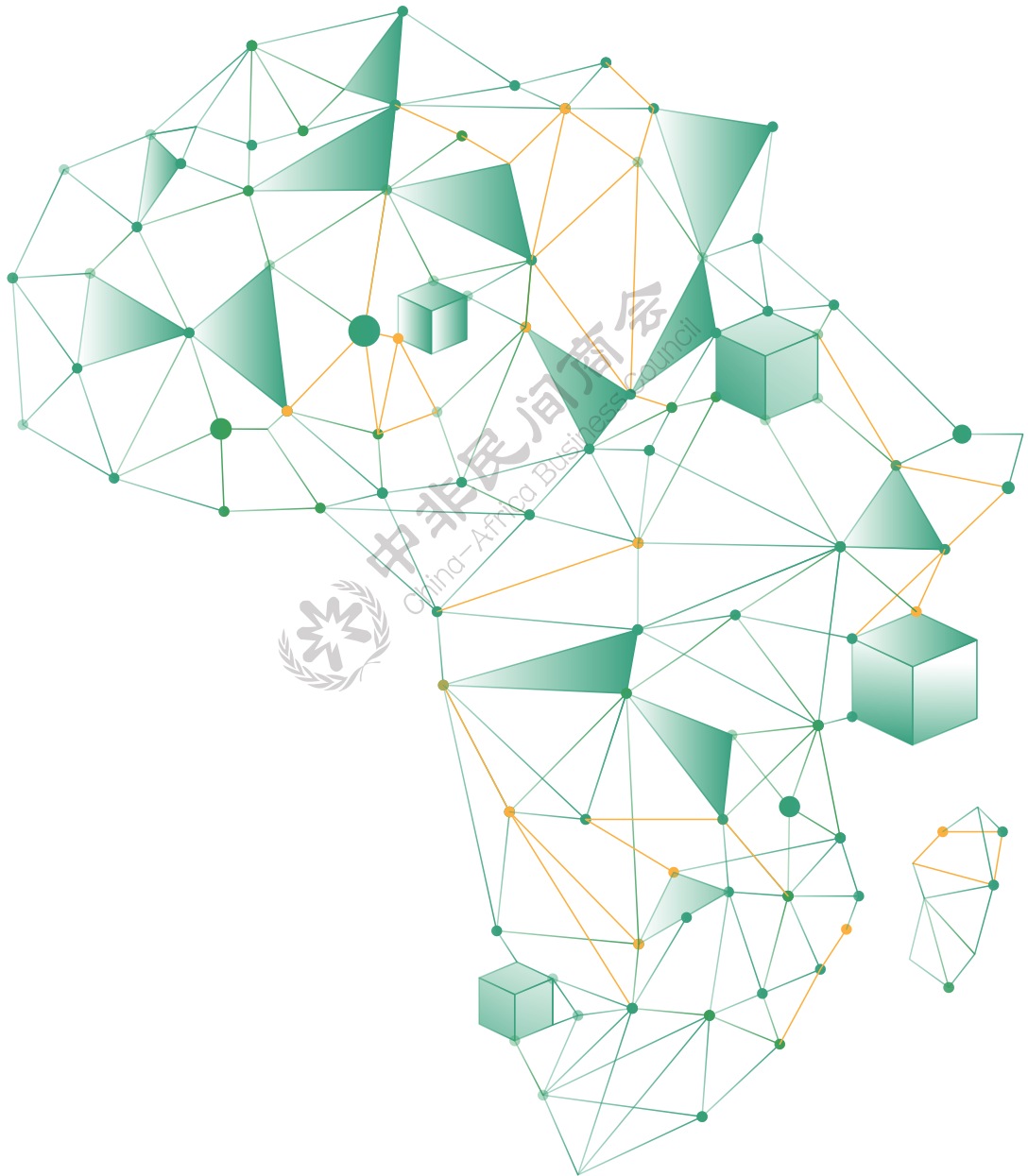
Chapter 2 explores the impact of the top-level design and models of China-Africa cooperation on the development and transformation of Africa’s industry chains.

Chapter 3 presents case studies of Chinese enterprises investing in Africa from the perspective of the relevant industry chains.

Chapter 4 makes proposals for the development and transformation of Africa’s industry chains, and, from the perspective of China-Africa cooperation, presents recommendations for the governments of China and African countries, Chinese enterprises, and multilateral participants.

# Increasing Added Value of African Products

by Promoting the Development and Transformation of Industry Chains in Africa



Chinese Investment in Africa 2023

China-Africa Business Council





# Chapter 1

## Overview of Africa's Industry Chains and Product Added Value

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### 1.1 The relationship between industry chains and product added value

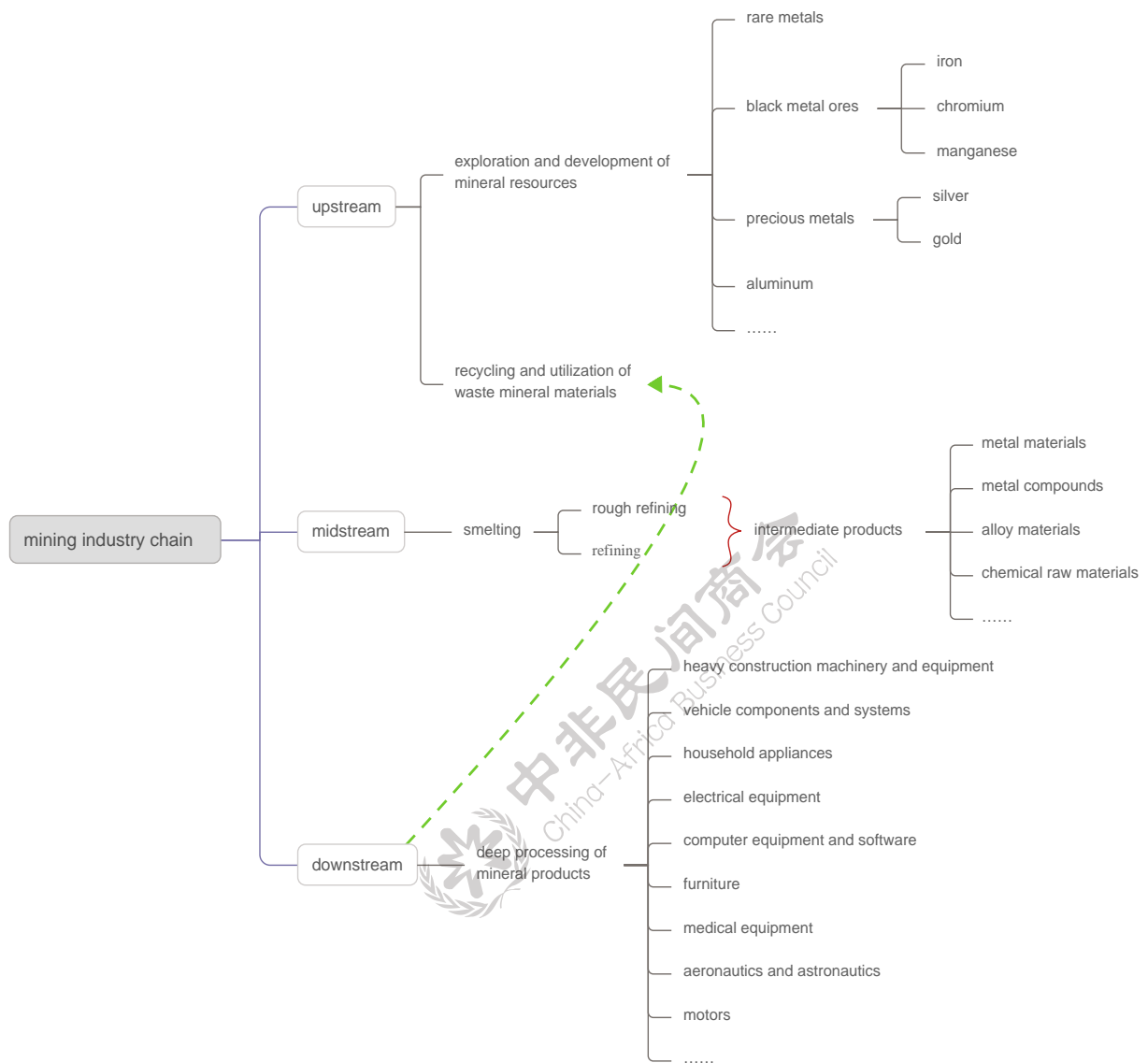
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#### 1.1.1 The definitions of the industry chain

There is currently no consensus in the domestic and international academic communities on the precise definition of the term “industry chain” as an economic concept. Economists generally define a broad industry chain as a network composed of several enterprises and products as nodes, based on intra-industry division of labor and supply and demand relationships, in the form of horizontal cooperation chains and vertical supply and demand chains.<sup>5</sup> The horizontal cooperation chain refers to service cooperation and the support of industries, while the vertical supply and demand chain refers to the division of labor among the upstream, midstream, and downstream industries.

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<sup>5</sup> Guo, W., & Yang, Y. (2019). “Application of Industry Chain Theory in the Financial Services of Small and Medium-Sized Enterprises. Proceedings of the 1st International Symposium on Economic Development and Management Innovation (EDMI 2019).” <https://doi.org/10.2991/edmi-19.2019.27>; PW Consulting. (2021). “Industry Chain, Value Chain, Supply Chain, Difference Between Them.” <https://pmarketresearch.com/what-are-industry-chain-value-chain-and-supply-chain-whats-the-difference-between-them/>



**Figure 1** Example of the upstream, midstream, and downstream industries of a mining industry chain

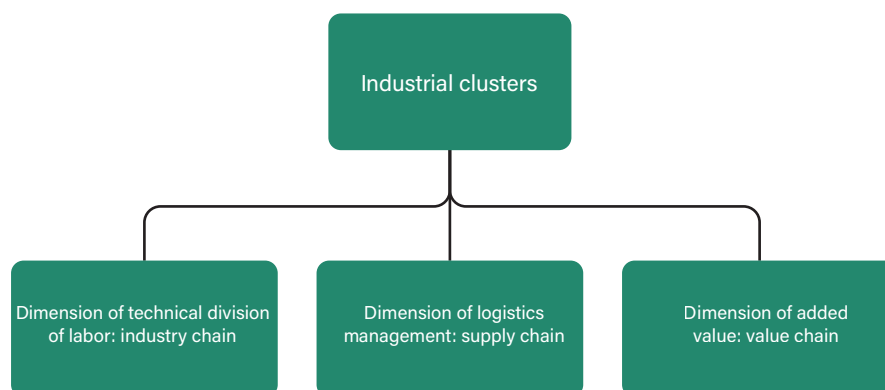
Source: Wind

The industry chain has a strong correlation with two management concepts proposed in the 1980s — “value chain” and “supply chain”. The “value chain” emphasizes the “value creation” of enterprises in the series of activities from product or service conception to final use.<sup>6</sup> The supply chain refers to the activity of transforming raw materials or components into products or customer services within an organization, which is the physical form of the industry chain.<sup>7</sup> The industry chain is oriented towards correlation, which is the material

<sup>6</sup> World Bank Group. (2018). “Jobs and Migration Core Course: Inclusive (Global) value chains.” <https://thedocs.worldbank.org/en/doc/215751528391009103-0160022018/render/2PMMay3InclusiveGVCs.pdf>

<sup>7</sup> CIPS(2023). What is a supply chain?. <https://www.cips.org/intelligence-hub/supply-chain-management/what-is-a-supply-chain>

foundation. The supply chain is efficiency-oriented and is the foundation of connectivity. The value chain is oriented towards the realization of value. The three chains in one are all included in the same industrial cluster.<sup>8</sup>



**Figure 2** Relationship between industrial cluster, industry chain, supply chain, and value chain

Source: *Research on Quality Upgrading of Industrial Clusters from the Perspective of Global Value Chain*

**The industry chain has the following five-layer meaning based on the concepts above:**

- ① The industry chain, the supply chain, and the value chain are naturally integrated, with the latter two focusing on the logistics perspective and value creation of the industry chain.
- ② The industry chain is a manifestation of the level of industry, and its sophistication, completeness, and efficiency reflect the quality and efficiency of a country's industrial development, as well as the resilience and vitality of the economy.
- ③ The industry chain is a manifestation of industrial correlation, representing the technical division of labor in product manufacturing.
- ④ The industry chain is a manifestation of the depth of raw material processing. The greater the processing depth, the longer the chain, and the more value creation processes involved.
- ⑤ The industry chain is a manifestation of meeting demand levels, involving interconnected production and supply links such as raw materials and production processing that meet different levels of demand.

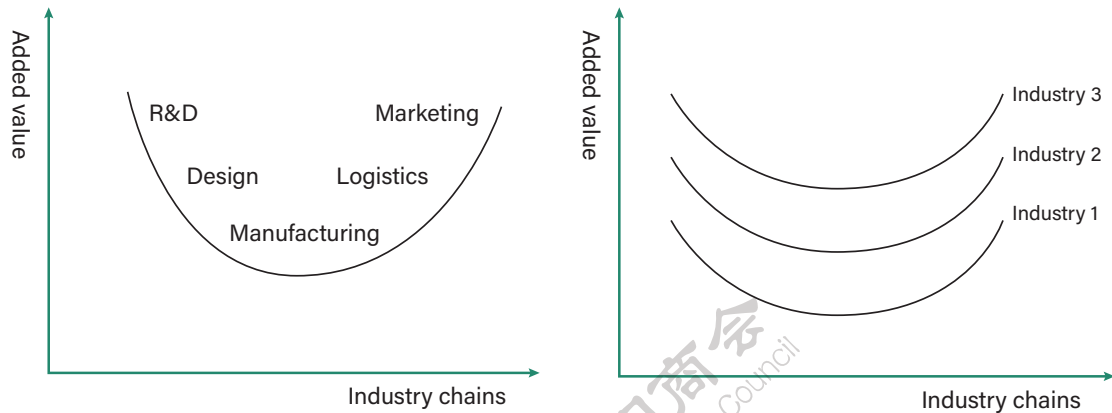
### 1.1.2 Development and transformation of the industry chain increase product added value

Product added value is included in the industry chain, and leans more towards the value form of the industry chain, that is, the perspective of analyzing the value chain. Added value refers to the difference between the sales price and cost price of goods or services, which is influenced by factors such as convenience brought by processing, brand, quality, design, and unique selling points.<sup>9</sup> The smile curve is often used to help understand the

<sup>8</sup> Ma Zhongdong. (2022). *Research on Quality Upgrading of Industrial Clusters from the Perspective of Global Value Chain*, p. 4. Economic Science Press

<sup>9</sup> BBC. (2023). "The Role of Business." <https://www.bbc.co.uk/bitesize/guides/zkqp6v4/revision/3>

distribution characteristics of added value in a specific industry chain: high added value is more concentrated in R&D, design, and brand marketing at both ends of the industrial chain, while the added value in the intermediate production and processing is relatively low. At the same time, due to differences in factors such as input and productivity, the ability of different industries to create added value varies. Generally speaking, industry, especially manufacturing, plays a more significant role in creating wealth and promoting economic growth.<sup>10</sup>



**Figure 3** Smile Curve and superimposed new Smile Curve

*Source: Reconstructing global value chain; upgrading theory and practices of Chinese enterprises*

**Industry chain upgrading refers to the dynamic movement from low value-added production to high value-added production.<sup>11</sup>**

From a macro perspective, this includes (1) the adjustment of the primary, secondary, and tertiary industries in the national economic structure; (2) cross-industry upgrading, such as transitioning from traditional manufacturing with low processing and low added value to emerging industries; (3) transformation and upgrading within an industry, such as upgrading and extending from production and manufacturing to product development, design, and marketing.<sup>12</sup>

From a micro perspective, as with enterprises, industry chain upgrading includes four progressive forms: process upgrading, product upgrading, function upgrading, and chain upgrading. Process upgrading improves the production efficiency of a certain link in the industry chain. Product upgrading means producing new products that meet market demand or improving existing products. Functional upgrading extends participation in the


10 UNIDO. (2021). "Why Industrial Development Matters Now More than ever Before." <https://iap.unido.org/articles/why-industrial-development-matters-now-more-ever>

11 Tian, K., Dietzenbacher, E., & Pin, R. J. A. (2019). "Measuring Industrial Upgrading: Applying Factor Analysis in a Global Value Chain Framework." *Economic Systems Research* 31(4), pp.642–664. <https://doi.org/10.1080/09535314.2019.1610728>

12 Li, M., & Li, M. (2017). "Industrial Transformation and Upgrading: The inevitable choice for NGEs' new growth and development." In *Research series on the Chinese dream and China's development path*. [https://doi.org/10.1007/978-981-10-3872-3\\_3](https://doi.org/10.1007/978-981-10-3872-3_3)

industry chain from the low end to the high end of the value chain. Chain upgrading is the transformation of industries into new industry chains.<sup>13</sup>

**Table 1** Enterprise Upgrading Process

	Process upgrading	Product upgrading	Function upgrading	Chain upgrading
Trajectory				
Example	OEM	ODM	OBM	upgrading of a chain
Added value	increase of added value			

Source: *Co-Opetition: A Revolutionary Mindset that Combines Competition and Cooperation*

## 1.2 History and current situation of the development and transformation of Africa's industry chains

### 1.2.1 Africa's industry chains during the colonial period: Economic subordinates of suzerain states

Traditional African economy was known as the "survival economy", with the dominance of agricultural activities. Manufacturing mainly took the form of handmade production of household agricultural tools and other items, and trade mainly took place between nearby communities and neighboring countries.<sup>14</sup> After the 15th century, Africa was gradually integrated into the world economic system led by Europe, in a subsidiary role. In the development of colonial rule from the 19th century, the gradual transformation of Africa was completed from a traditional economy to a colonial economy.<sup>15</sup>

**During the colonial period, African economy became a tool for colonial powers, and the economic development of African countries was mainly aimed at meeting their needs.<sup>16</sup>**

- 13 Bair, J., & Gereffi, G. (2018). Local Clusters in Global Chains: The Causes and Consequences of Export Dynamism in Torreón's Blue Jeans Industry. In Cambridge University Press eBooks, pp. 176–204. <https://doi.org/10.1017/9781108559423.007>; Lee, J., & Chen, J. (2000). Dynamic Synergy Creation with Multiple Business Activities: Toward a Competence-based Business Model for Contract Manufacturers; Schmitz, H., & Humphrey, J.F. (2000). Governance and Upgrading: Linking Industrial Cluster and Global Value Chain Research.
- 14 Walter Rodney. (1971). How Europe Made Africa Underdeveloped (translated by Li Anshan), p. 54. Social Science Literature Press
- 15 Shu Yunguo & Liu Weicai. (2013). African Economic History of the 20th Century, p. 27. Zhejiang People's Publishing House
- 16 William Todoff. (2007). African Government and Politics (translated by Xiao Hongyu), p. 39. Peking University Press

In terms of agriculture, the colonial governments established single economic crop systems in Africa through economic and super-economic means, which directly exported such economic crops as coffee, cocoa, sisal and rubber to meet the needs of daily life and industrial development in Europe.

In terms of industrial development, Africa had two stories. For one thing, due to its abundant natural resources, the mining of such resources as diamond, gold, and oil, mainly operated by foreign capital from colonial industrial enterprises, was developed to meet the industrial raw material needs of Europe. For another, light industries such as brewing, tobacco, flour, textiles, clothing, which did not compete with those of the suzerain states and were mainly used to meet the daily needs of Europeans in Africa, developed to a certain extent.

The colonial governments adopted an attitude of negligence or even suppression towards the development of other manufacturing industries in the colonies in order to maintain their market advantage, as evidenced by the lack of local agricultural processing industries and mining and smelting industries in Africa at that time. In order to facilitate the supply of raw materials by African colonies at the low end of the world value chain, some infrastructure and communication facilities were also built.<sup>17</sup>

### Column 1 The single-product economy in colonial Africa

“In the last years of the colonial period, the proportion of single economic activities to total exports in various colonies exceeded 50%, such as in the Gambia, Ghana, and the Sudan. In some years, the proportion even exceeded 95%. In the British colony of Gambia, the proportion of the single economic crop, the peanut, was surprisingly high, reaching 97.2% in 1950, 96.2% in 1952, and 95% in 1953. In Sierra Leone, the export of cash crops accounted for 91.8% of its total exports in 1938 and still accounted for 76% of the total export revenue by the 1950s.”<sup>18</sup>

## 1.2.2 Africa's industry chains in the early years of independence: National economic independence and import substitution strategies

Since the late 1950s, African countries have successively achieved political independence. Faced with such issues as a weak economic foundation, a distorted economic structure, and heavy dependence on foreign countries, their most urgent practical goals were to find ways to achieve industrialization and an independent national economy.<sup>19</sup>

**Most African countries have adopted import substitution strategies, which are focused on developing industries to meet the basic consumption needs of their own people; they have also looked to processing industries that use local agricultural products as raw materials.**

By vigorously investing in state-owned industries and implementing high tariff trade protection measures, African countries have rapidly developed their industries and gradually established their own national industrial system. Overall, between 1960 and 1970, the proportion of manufacturing output value to GDP (Gross Domestic Product) in

17 Li Anshan. (2021). *Modern History of Africa*, pp. 380-429. East China Normal University Press

18 Li Anshan. (2021). *Modern History of Africa*, pp. 380-429. East China Normal University Press

19 Shu Yunguo & Liu Weicai. (2013). *African Economic History of the 20th Century*, p. 27. Zhejiang People's Publishing House

Sub-Saharan Africa increased from 6.3% to approximately 11%. Between 1965 and 1973, the average annual growth rate of manufacturing output was 14.6%, which was more than twice the GDP growth rate of the same period. The development of manufacturing has reduced the import dependence of African countries on basic consumer goods.

However, macroeconomic instability caused by natural disasters, oil crises, economic crises, and other factors has hindered the government's ability to use manufacturing as a growth engine. Coupled with other policy factors and weak governance, most African agricultural and mineral product processing industries have stopped at the primary processing stage, with low added value, and African industrialization strategies have largely failed.<sup>20</sup>

### Column 2 Reflection on Africa's import substitution industrialization strategy

“The goal of African industrialization policies is to meet the needs of domestic consumption rather than exports, and there has been more investment in capital intensive industries that do not have comparative advantages. The foundation of industrialization in Africa lies in large-scale investment in state-owned enterprises rather than increasing productivity, leading to fiscal expenditures exceeding government revenue capacity. High tariffs have led to a price increase in intermediate goods and reduced the efficiency of production of domestic manufactured goods. In theory, overvaluation of exchange rates is beneficial for the manufacturing industry to import intermediate goods at prices lower than that in the world market, but this policy is not conducive to agricultural exports, which in turn leads to insufficient foreign exchange reserves and the inability to import intermediate goods.”<sup>21</sup>

At the same time, the emphasis of African countries on industry came at the expense of the development of agriculture. Although governments have made some efforts in reforming agricultural production relations and improving agricultural production tools, they have not been able to change the single mode dominated by cash crop planting and export, or the dual structure of large-scale agriculture and subsistence agriculture. In particular, in the context of rapid population growth, agricultural productivity has increased slowly. Between 1970 and 1977, the annual growth rate of agriculture in Africa was only 1.3%, the lowest in the world, resulting in significant pressure on food supply.<sup>22</sup>

### 1.2.3 Africa's industry chains in the 1980s-1990s: Economic restructuring and export-oriented strategies<sup>23</sup>

With the economic recession of the late 1970s and the increasing exposure of their internal problems, leaders in African countries began to reflect on their post-independence economic development strategies and seek paths for Africa's own development and self-reliance. The Conference of Heads of State and Government of the Organization of African Unity, held in July 1979, adopted the Monrovia Declaration on the Programme and

20 ACET. (2022). “Transforming and Building Resilient Economies in Africa: Resetting Priorities for the Policy Agenda in the Post-COVID-19 Era.” <https://acetforafrica.org/research-and-analysis/reports-studies/reports/transforming-and-building-resilient-economies-in-africa-resetting-priorities-for-the-policy-agenda-in-the-post-covid-19-era/>

21 Kaba, K., Lin, J. Y., & Renard, M. (2022). “Structural Change and Trade Openness in Sub-Saharan African Countries.” *The World Economy*, 45(7), pp.2101–2134. <https://doi.org/10.1111/twec.13261>

22 Lu Tingen. (2000). *A Brief History of Agricultural Development in Africa*. China Finance Publishing House

23 Except for a few cases, the reference books for this section mainly include: 1. Shu Yunguo&Liu Weicai (2013). *African Economic History of the 20th Century*, p. 27. Zhejiang People's Publishing House; 2. Li Anshan. (2021). *Modern History of Africa*, pp. 380-429. East China Normal University Press

Measures for National and Collective Self Reliance in Social and Economic Development to Establish a New International Economic Order. In the following year, the Lagos Plan of Action for the Economic Development of Africa from 1980 to 2000 was also adopted.<sup>24</sup>

The economic situation of African countries also attracted the attention of the international community. The World Bank drafted a report titled Action Plan for Accelerating Development in Sub-Saharan Africa (also known as the “Berger Report”), calling for African countries to promote economic restructuring. The World Bank and the International Monetary Fund (IMF) also provided special loans for this purpose.<sup>25</sup>

### Column 3 Different views represented by the Lagos Plan of Action and the Berger Report

“The Lagos Plan of Action reflects the views of African leaders and the Organization of African Unity. They believe that the fundamental cause of the African economic crisis lies in external factors, namely the combined effect of the sequelae of the colonial economies and the existing unreasonable world economic order. The Berger Report represents the views of the World Bank, the IMF, and Western countries, stating that the fundamental cause of the African economic crisis lies in internal factors, mainly the mistakes in economic development decisions by African countries.”

Due to a sharp deterioration in the economic situation, and the direct linkage between loans from the World Bank and the IMF and the implementation of structural adjustments, African countries were forced to accept the World Bank’s reform plans — to implement economic structural adjustments. The plan revolved around liberalization, privatization, and marketization. In terms of industry, the plan proposed that African countries should vigorously develop export industries and processing industries that would serve agricultural development. Specific measures included privatizing some state-owned enterprises, establishing export processing zones, and implementing preferential investment laws to attract foreign investment. In terms of agriculture, it was believed that food self-sufficiency was only one aspect of agricultural development. The need for an export orientation was emphasized, and African countries were urged to vigorously develop economic crop production and exports and increase foreign exchange earnings. The plan also required African countries to promote trade liberalization through measures such as lowering import and export tariffs, implementing currency depreciation, and reducing social spending in order to lower budgets.

To gauge the effectiveness of these structural adjustments, the World Bank conducted a survey of 29 participating African countries and concluded that the overall action plan was correct, that the effectiveness lay in the specific implementation by the various governments, and that those countries with significant policy improvements had shown strong economic recovery.<sup>26</sup>

24 Organization Of African Unity. (1980). “Lagos Plan of Action for the Economic Development of Africa 1980-2000.” <https://www.resakss.org/sites/default/files/OAU%201980%20Lagos%20Plan%20of%20Action%20for%20the%20Economic%20Development%20of%20Africa.pdf>

25 World Bank Group. (2010). “Accelerated Development in Sub-Saharan Africa: An agenda for action (English).” <http://documents.worldbank.org/curated/en/702471468768312009/Accelerated-development-in-sub-Saharan-Africa-an-agenda-for-action>

26 World Bank Group. (1999). Adjustment in Africa: reforms, results, and the road ahead. <https://documents1.worldbank.org/curated/en/497781468009320518/pdf/multi0page.pdf>



However, more studies have shown that the implementation of the plan actually hindered economic growth in Africa and, in particular, seriously eroded the success of African countries in their early industrialization efforts. The export-oriented strategy exposed African economies to international competition, and currency depreciation and the reduction of public support increased production costs. Insufficient infrastructure construction led to high transaction costs...<sup>27</sup>

#### Column 4 Partial evaluation of the economic restructuring plan

“The structural adjustments required by the World Bank and the IMF in Africa over the past two decades have led to greater social and economic poverty, as well as increased dependence on external loans by African countries. The failure of structural adjustments is so severe that some critics of the World Bank and the IMF believe that policies imposed on African countries have never been aimed at promoting development; on the contrary, their intention is to keep these countries economically vulnerable and dependent.”<sup>28</sup>

### 1.2.4 Africa’s industry chains since the 21st century: Economic integration, new partnership plan, and re-industrialization

#### Column 5 Major initiatives by Africa in the new century

“African heads of state and government have in recent years taken a number of major initiatives to meet the challenges of development, to reverse the marginalization of Africa in the global economy and polity, and to claim the 21st century for the peoples of the continent. These include the establishment of the African Union (AU) and the adoption of the New Partnership for Africa’s Development (NEPAD) as the strategic programme of the Union.”<sup>29</sup>

Right from the beginning of independence, African countries began their economic integration. In the 1990s, facing a crisis of marginalization in the context of economic globalization and the call for “African rejuvenation”, Africa initiated substantive economic integration and proposed an economic development strategy of “unity, self-reliance, and independence”. In 2002, the African Union was officially established on the basis of the Organization of African Unity, with the aim of promoting Africa’s growth and economic development by strengthening cooperation and integration among African countries.<sup>30</sup>

In 2001, the African Summit proposed the New Partnership for Africa's Development. In 2002, it was designated as the economic and social development plan of the African Union.<sup>31</sup>

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- 27 Schatz, S. P. (1994). “Structural Adjustment in Africa: a Failing Grade So Far”. *Journal of Modern African Studies*, 32(4), 679–692. <https://doi.org/10.1017/s0022278x00015901>; Kefferstan, S. (2017). *The Perfect Storm: Lasting Impacts of Structural Adjustment Programs and Pressures of Climate Change in Latin America and Ghana, Africa*. <https://api.semanticscholar.org/CorpusID:51918852>; Kaba, K., Lin, J. Y., & Renard, M. (2022b). “Structural Change and Trade Openness in Sub-Saharan African Countries.” *The World Economy*, 45(7), pp.2101–2134. <https://doi.org/10.1111/twec.13261>; D+C. (2018). “Failed Policies Descent into Hell.” <https://www.dandc.eu/en/article/africa-structural-adjustment-did-not-trigger-fast-growth-had-contractive-impact>
- 28 Global Issues. (2013). “Structural Adjustment — A Major Cause of Poverty.” <https://www.globalissues.org/article/3/structural-adjustment-a-major-cause-of-poverty>
- 29 African Union. (2008). *Action Plan for the Accelerated Industrial Development of Africa*. <https://au.int/en/documents/20111231/action-plan-accelerated-industrial-development-africa>
- 30 African Union. (2023). “About the African Union.” <https://au.int/en/overview>
- 31 AUDA-NEPAD. (2023). “About Us.” [https://www.nepad.org/who-we-are#about\\_us](https://www.nepad.org/who-we-are#about_us)

The plan emphasizes Africa's internal independent development, attaches importance to coordination with the international community, and shifts the focus of stimulating industrial development to the investment environment – that is, the policy, institutional, and material environment for private enterprises – so as to attract foreign direct investment.<sup>32</sup>

### Column 6 Economic growth in Africa from 2000 to 2008

“Despite the small margins of productivity growth and structural changes, Africa has been moving in the right direction since 2000. From 2000 to 2008, Africa’s gross domestic product grew by 4.9%, making it one of the fastest-growing regions in the world; The contribution to economic growth comes not only from the resource industries (24%), but also from other multiple fields such as manufacturing (4.6%), finance (8.0%), and construction (7.5%).”<sup>33</sup>

At the same time, against a backdrop of ongoing decline in its share of global manufacturing, Africa in the 21st century has once again begun to attempt industrialization. In 2008, the African Union Summit adopted the Action Plan for the Accelerated Industrial Development of Africa, proposing to incorporate industrialization into the national development policies of every country.<sup>34</sup>

In 2013, the African Union proposed Agenda 2063, which established a development framework for Africa’s economic transformation over the next 50 years and set a development goal that manufacturing would grow by a factor of five and account for over 50% of the GDP.<sup>35</sup>

In 2016, the United Nations General Assembly declared 2016-2025 as the “Third Industrial Development Decade for Africa.”<sup>36</sup>

### 1.2.5 Current situation of Africa’s industry chains: Single industrial structure and low product added value

On the whole, Africa has made very slow progress in its industrial diversification over the past decade, although there has been some development. From 2010 to 2021, the industrialization index of the entire continent only increased from 0.5026 in 2010 to 0.5270 in 2021.<sup>37</sup> Africa remains one of the regions with the lowest degree of economic diversification in the world. Among the current 133 countries, in terms of economic diversity, African countries generally rank low, and 8 out of the 15 least diversified economies in the world are African countries, with the obvious characteristics of a single economic structure.<sup>38</sup>

In terms of industrial structure, since 2008, the proportion of Africa’s manufacturing in its economy has remained at a low level of around 10%, while the proportion of agriculture

32 Yao Guimei. (2022). Production Capacity Cooperation Between China and Africa, p.10. China Social Science Press

33 McKinsey Global Institute. (2010). Lions on the move: The progress and potential of African economies. [https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Middle%20East%20and%20Africa/Lions%20on%20the%20move/MGI\\_Lions\\_on\\_the\\_move\\_african\\_economies\\_Exec\\_Summary.pdf](https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Middle%20East%20and%20Africa/Lions%20on%20the%20move/MGI_Lions_on_the_move_african_economies_Exec_Summary.pdf)

34 African Union. (2018). Action Plan for the Accelerated Industrial Development of Africa. <https://au.int/en/documents/20111231/action-plan-accelerated-industrial-development-africa>

35 African Union. (2023). “Agenda 2063: The Africa we want.” <https://au.int/en/agenda2063/overview>

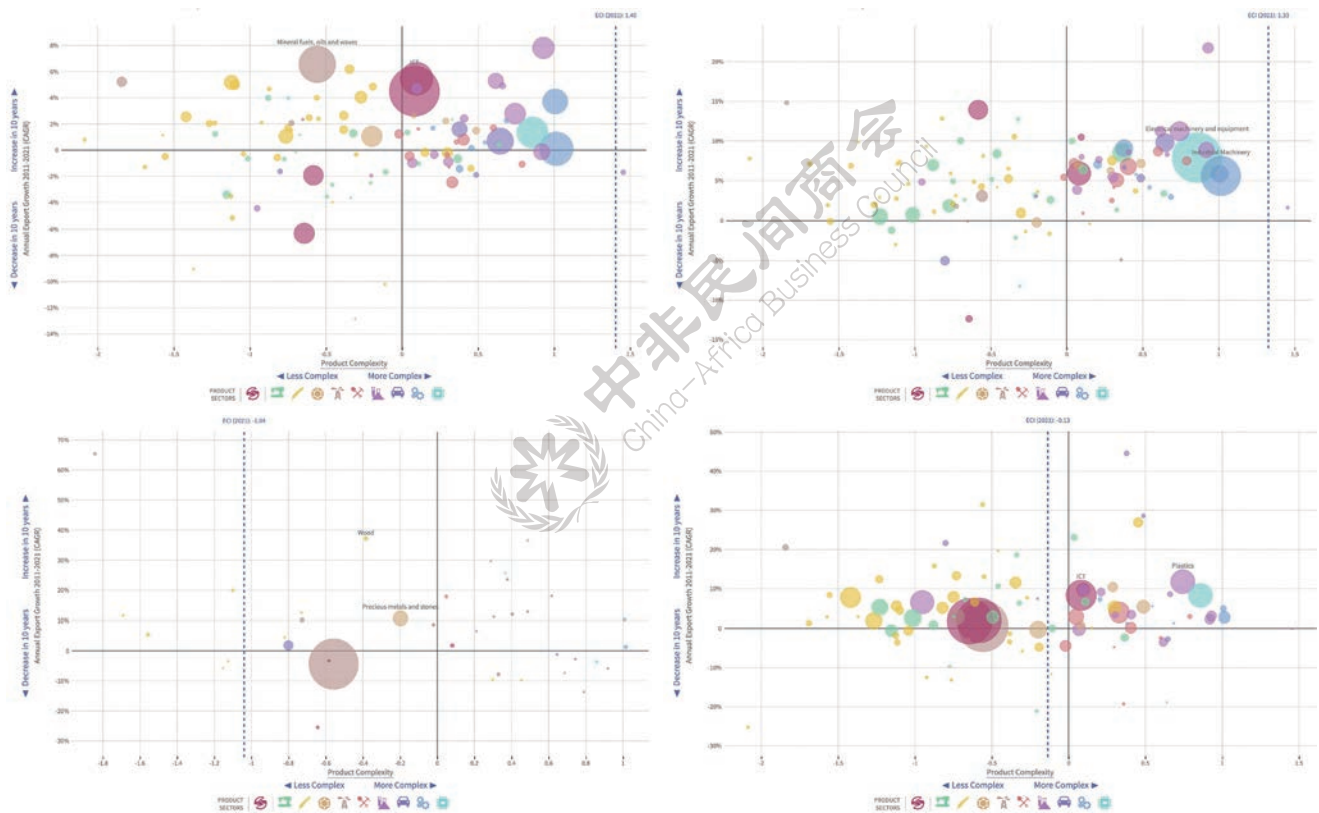
36 UNIDO. (2023). “Third Industrial Development Decade for Africa 2016-2025.” <https://www.unido.org/IDDA3>

37 African Development Bank Group. (2022). Africa Industrialization Index 2022. <https://www.afdb.org/en/documents/africa-industrialization-index-2022>

38 Data calculated by Harvard University based on UNCTAD and WDI databases.

and service industries has been high. In 2022, the proportion of manufacturing in GDP in Sub-Saharan Africa was 11.2%, far below the world average of nearly 16.5%.<sup>39</sup>

From the perspective of export commodity structure, over 60% of the total exports of 45 African countries were primary products such as agricultural products, energy and minerals, and these countries account for 45% of the world's countries that rely on bulk commodity exports. For example, in 2021, Libya's crude oil exports accounted for 87.71% of its total exports. Although some countries have added new product categories to their export baskets, they have seen insufficient progress in guiding the industrial sector towards high value-added manufactured goods. For example, Egypt has an economic complexity at the forefront of Africa and its economic diversification effect has been significant over the past 15 years, yet it still mainly exports agricultural, energy, mineral raw materials, and related textile and chemical products.<sup>40</sup>



**Figure 4** the trade for the United States (top left), China (top right), Angola (bottom left), and Egypt (bottom right) from 2011 to 2021<sup>41</sup>

Source: Harvard University

<sup>39</sup> Data from the World Bank.

<sup>40</sup> Data calculated by Harvard University based on UNCTAD and WDI databases.

<sup>41</sup> The vertical axis represents changes in exports, and the horizontal axis export commodity complexity. Colors represent product categories (including service trade products), in the following order: services, textiles, agriculture, stone (like cement), minerals, chemicals, vehicles, machinery and electronic products. ECI is Economic Complexity Index. China and the United States have a wide range of trade products categories concentrating in the first quadrant with ECI greater than 1, indicating high economic complexity. Angola has single trade products categories and Egypt's are concentrated in the second quadrant with low complexity. ECI indices in Angola and Egypt are less than 0.

The heavy dependence of African economies on primary commodity production and export has led to Africa's forward participation in global industry chains, mainly through the export of natural resources and agricultural products for further processing by other countries, and such export accounts for nearly 6% of Africa's GDP. In contrast, Africa's backward participation that utilizes foreign investment for domestic processing only accounts for 2% of its GDP. Under this development model, the export sector has few forward and backward connections with other economic sectors, and the added value of its exported products is low.<sup>42</sup>

Take the cashew industry chain as an example. African countries export shelled cashews to Vietnam and India at a price of \$2.5-3 per kilogram. Vietnam and India process cashews into semi-finished or finished products and export them to China at a price of \$9.5-10 per kilogram, with the final consumers paying \$25-30 per kilogram.<sup>43</sup>

### **Column 7 The drawbacks of primary commodity production and export in African economies**

“At first glance, the development and growth of export commodities such as coffee, cotton, sugar, and wood seem to be beneficial to exporting countries as they generate income. In fact, it represents a form of exploitation called unequal exchange. Countries exporting raw or unprocessed materials may obtain money through sales, but if they import processed goods, they will lose money. The reason is that processed products require additional labor, resulting in higher costs. Therefore, countries that export wood but do not have the ability to process it must re-import wood in the form of finished wood products, with a cost higher than the price at which they sell raw materials. Countries that can process materials will receive additional income contributed by their workers.”<sup>44</sup>

42 AUC/OECD. (2022). Africa's Development Dynamics 2022: Regional value chains for a sustainable recovery, OECD Publishing, Paris. [https://www.oecd-ilibrary.org/development/africa-s-development-dynamics-2022\\_2e3b97fd-en](https://www.oecd-ilibrary.org/development/africa-s-development-dynamics-2022_2e3b97fd-en)

43 Export Planning. (2019). “The African Challenge: Exporting Products with a Higher Added Value.” <https://www.exportplanning.com/en/magazine/article/2019/10/14/african-challenge-export-added-value/>

44 Global Issues. (2013). “Structural Adjustment — A Major Cause of Poverty.” <https://www.globalissues.org/article/3/structural-adjustment-a-major-cause-of-poverty>

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## 1.3 Key reasons, comparative advantages, and opportunities for development and transformation of Africa's industry chains

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### 1.3.1 Three key reasons for the development and transformation of Africa's industry chains

Agenda 2063 is a strategic framework for the development of the African continent for half a century, formulated by the African Union in 2013. It has seven major aspirations, including the establishment of a prosperous Africa based on inclusive growth and sustainable development, and 20 major goals, including achievement of a high standard of living, quality of life, and well-being for all citizens.<sup>45</sup>

However, due to internal constraints and external shocks, the achievement of Agenda 2063 has been less than ideal. The overall expected target achievement rate for 2021 was 51%, especially in achieving Aspiration 1, that is, "Prosperous Africa based on inclusive growth and sustainable development", where progress has been relatively small, with an overall scoring rate of only 37%; The progress of Goal 4, "Economic Transformation," has been the slowest, with a scoring rate of 13% and 17% in 2019 and 2021 respectively.<sup>46</sup>

The transformation and upgrading of industry chains are an important path for Africa to achieve Agenda 2063, playing an important role in stimulating economic growth, enhancing economic resilience, and achieving core goals such as green development.

#### The need for sustainable economic growth

From the mid-1990s to the mid-2010s, African economies showed strong growth, with many countries leading the world in terms of economic growth. However, this round of economic acceleration did not come from industrialization, but from the world market's demand in the relatively peaceful and stable background for the bulk commodities such as energy, minerals, and agricultural products, which served as pillars of the African economies. This has had almost no synergistic effect on the economic development of countries and regions in Africa, and even led to biased growth far away from the manufacturing development and economic diversification.<sup>47</sup>

With the outbreak of the global financial crisis and the decline in bulk commodity prices, the problem of Africa's lack of sustained growth has once again been exposed, whereas transformation and upgrading of the industry chains would stimulate economic transformation and achieve sustainable growth through the "Growth with DEPTH" framework

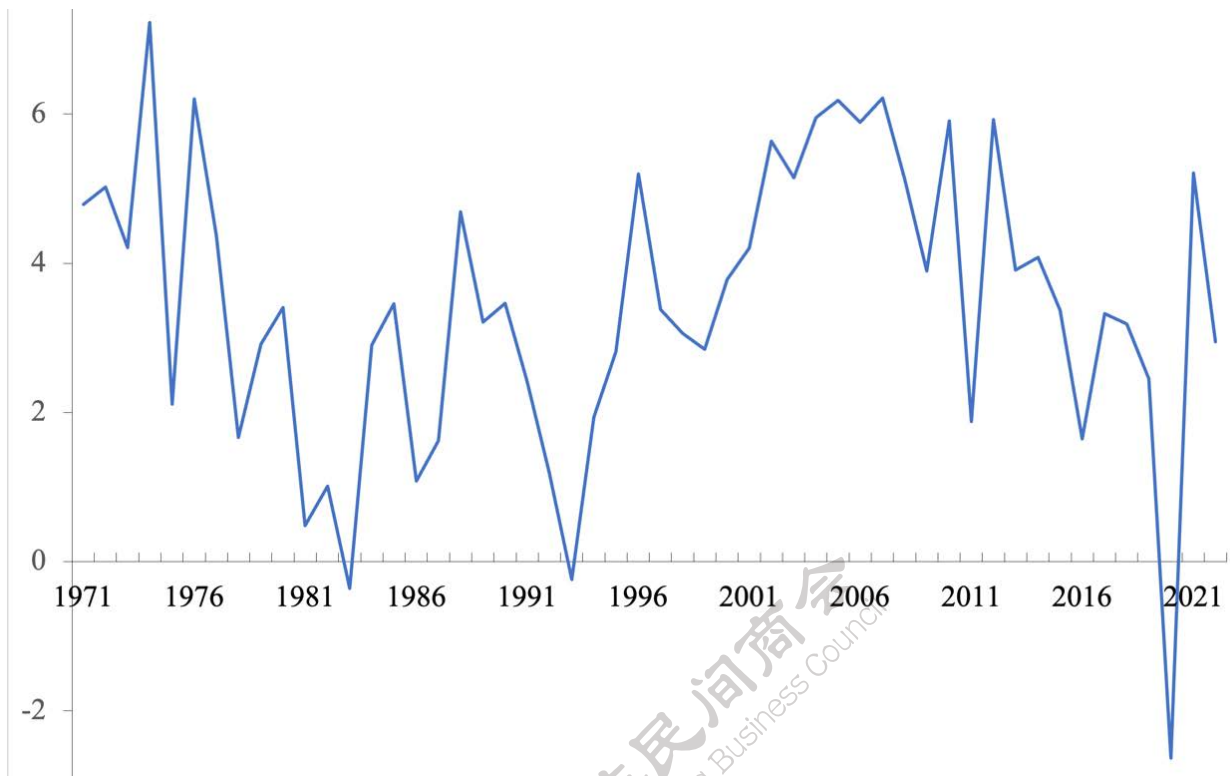
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<sup>45</sup> African Union. (2023). "Agenda 2063: The Africa we want." <https://au.int/agenda2063/overview>

<sup>46</sup> African Union Commission and African Union Development Agency – NEPAD. (2022). Second Continental Report on the Implementation of Agenda 2063. [https://au.int/sites/default/files/documents/41480-doc-2nd\\_Continental\\_Progress\\_Report\\_on\\_Agenda\\_2063\\_English.pdf](https://au.int/sites/default/files/documents/41480-doc-2nd_Continental_Progress_Report_on_Agenda_2063_English.pdf)

<sup>47</sup> UNIDO. (2016). Industrialization in Africa and Least Developed Countries. [https://www.unido.org/sites/default/files/2016-09/UNIDO\\_2016\\_G20\\_08\\_25\\_0.pdf](https://www.unido.org/sites/default/files/2016-09/UNIDO_2016_G20_08_25_0.pdf)

of economic diversification, improvement of export competitiveness and productivity, technological upgrading, and improvement of human well-being.<sup>48</sup>



**Figure 5** GDP growth rates in Africa from 1960 to 2022 (converted from figures of Sub-Saharan Africa in the same period)

Source: UNCTAD

### The need for greater economic resilience

Economic resilience is defined as a country's ability to withstand and quickly recover from adverse shocks, minimizing growth output losses in the process.

The world is currently experiencing a major upheaval that has not been seen in a century, with the undercurrents of anti-globalization, unilateralism, and protectionism. The world economy is on the steep decline, and the global industry and supply chains are facing impacts due to non-economic factors. The international economy, technology, culture, security, politics, and other spheres are undergoing profound adjustments, and the world has entered an era of turbulence and transformation.<sup>49</sup>

Most developing countries, especially in Sub-Saharan Africa, are still in an uncontrollable and fragile state of economic resilience due to their low degree of export diversification and high dependence on primary products.<sup>50</sup> Faced with frequent impacts from world

48 ACET. (2022). Transforming and Building Resilient Economies in Africa: Resetting priorities for the policy agenda in the [ost-COVID-19 era. <https://acetforafrica.org/research-and-analysis/reports-studies/reports/transforming-and-building-resilient-economies-in-africa-resetting-priorities-for-the-policy-agenda-in-the-post-covid-19-era/>

49 Central People's Government of the People's Republic of China. (2020). "Fostering a New Development Paradigm and Pursuing Mutual Benefit and Win-win Cooperation", Keynote address at the APEC CEO Dialogues. [https://www.gov.cn/gongbao/content/2020/content\\_5565810.htm](https://www.gov.cn/gongbao/content/2020/content_5565810.htm)

50 Ngouhouo, I., & Nchofoung, T. N. (2021). "Economic Resilience in Sub-Saharan Africa: Evidence from Composite Indicators". *Journal of the Knowledge Economy*, 13(1), pp.70–91. <https://doi.org/10.1007/s13132-020-00717-2>



markets, natural disasters, public health crises, and other factors, Africa must prioritize the development and transformation of its industry chains to build resilient economies. Countries with a low degree of economic transformation suffer twice as much the growth loss as their more successful counterparts.<sup>51</sup>

### The need for practicing green development

#### Column 8 Africa is already experiencing the consequences of environmental degradation in various aspects

“Africa is already experiencing the consequences of environmental degradation in various aspects, including climate variability and the impact of climate change. The rapid population growth and improper land use have led to deforestation and land degradation, damaging fragile ecosystems and exacerbating water scarcity. Between 2001 and 2014, five of the ten countries with the fastest reduction in tree cover worldwide were located in West Africa. In the cities, air pollution and ineffective waste management pose more serious problems.”<sup>52</sup>

With increasingly severe climate change and environmental pollution, Africa loses \$7 billion to \$15 billion annually due to climate related issues, and the annual loss may increase to \$50 billion by 2040. Africa has made the construction of environmentally sustainable and climate adaptive economies an important goal. The development and transformation of the industry chains will bring new opportunities for green development in Africa: investing in more resilient green infrastructure, and developing and promoting renewable energy will help build a diversified and cost-effective low-carbon economy. Promoting climate-smart agriculture will help farmers improve productivity, reduce costs, and enhance disaster resilience to protect livelihoods and respond to food shortages...<sup>53</sup>

### 1.3.2 Three major comparative advantages for development and transformation of Africa's industry chains

#### “The World's Raw Material Warehouse”<sup>54</sup>

The African continent is extremely rich in mineral resources, with at least 17 mineral reserves ranking first in the world. Among them, platinum, manganese, chromium, ruthenium, and iridium account for over 80% of the world's total reserves, while phosphate, palladium, gold, diamonds, germanium, cobalt, and vanadium account for over 50%, and uranium, tantalum, cesium, bauxite, fluorite, zirconium, and graphite account for over 30%.

As most of its minerals are essential raw materials for industrial production, Africa is also known as the “the world's raw material warehouse” and has received great attention. In addition, Africa has enormous potential for the development of traditional energy sources such as oil and natural gas, as well as renewable energy sources such as wind, hydro, and

51 ACET. (2022). Transforming and Building Resilient Economies in Africa: Resetting priorities for the policy agenda in the post-COVID-19 era. <https://acetforafrica.org/research-and-analysis/reports-studies/reports/transforming-and-building-resilient-economies-in-africa-resetting-priorities-for-the-policy-agenda-in-the-post-covid-19-era/>

52 World Resources Institute. (2017). “Africa's Green Growth Opportunity.” <https://www.wri.org/insights/africas-green-growth-opportunity>

53 ACET. (2022). Transforming and Building Resilient Economies in Africa: Resetting priorities for the policy agenda in the post-COVID-19 era. <https://acetforafrica.org/research-and-analysis/reports-studies/reports/transforming-and-building-resilient-economies-in-africa-resetting-priorities-for-the-policy-agenda-in-the-post-covid-19-era/>

54 Qiu Ruizhao. (2020). “Discussion on the metallogenic belts divided in African continent.” *Geology in China* 47(6), pp.1937-1940. <http://geochina.cgs.gov.cn/html/2020/6/20200631.htm>

solar energy. Africa also owns 60% of the world's uncultivated arable land.<sup>55</sup> The abundant natural resources provide powerful support for the development and transformation of Africa's industry chains, including in land, raw materials, and energy.

### **“The youngest continent”<sup>56</sup>**

Rapid population growth, high fertility rate, low median age, and extended life expectancy are the main characteristics of Africa's population structure. The development and transformation of Africa's industry chains will enjoy sufficient labor supply. Since 2000, the annual growth rate of Africa's population has remained above 2.45%. In 2022, Africa's population exceeded 1.4 billion, making it the second largest continent in the world in terms of population; It is expected that by 2050, the population of the African continent will reach nearly 2.5 billion. As the “youngest continent” in the world's population, as of 2022, approximately 40% of the population of the African continent is aged 15 and below, with a median age of around 20.

### **“An Emerging Big Consumer Market”<sup>57</sup>**

Thanks to a large and young population, accelerated urbanization, economic growth and the rise of income levels, as well as the popularity of mobile internet, Africa is becoming one of the fastest-growing consumer markets in the world. Since 2010, consumer spending in Africa has grown at a CAGR of 3.9, reaching \$1.93 trillion in 2021. It is expected that by 2030, Africa will have 1.7 billion consumers and consumer spending will reach US\$2.5 trillion. The huge consumption potential not only provides market support, but also attracts widespread global investment, providing a driving force for industrial development, especially in the manufacturing and service industries.

## **1.3.3 Three major opportunities for the development and transformation of current Africa's industry chains**

### **The Fourth Industrial Revolution: The shuffling of the digital economy**

The term “industry 4.0” refers to the next developmental stage in the organization of the entire value chain process in the manufacturing industry. It is also known as the Fourth Industrial Revolution. What all these terms and concepts have in common is the recognition that traditional manufacturing and production methods are going through a digital transformation process.<sup>58</sup>

Due to the disruption brought by digital technologies to all economic sectors, the revolutionary changes not only occur in the industrial field, but also in agriculture and service industries. It is therefore also known as the Fourth Industrial Revolution.<sup>59</sup> For traditional industrial economies at the high end of the value chain, such as the US and

55 CFA Institute. (2022). “Eight Reasons Why Africa Is Primed for Impact Investing.” <https://blogs.cfainstitute.org/investor/2022/10/14/eight-reasons-why-africa-is-primed-for-impact-investing/>

56 Source: Statista

57 Africa Business. (2022). “Why Africa Is One of the Fastest-Growing Consumer Markets in the World.” <https://africabusiness.com/2022/02/11/why-africa-is-one-of-the-fastest-growing-consumer-markets-in-the-world/> “Africa's Consumer Markets with NKC African Economics.” <https://www.investafrica.com/insights/africas-consumer-markets-with-nkc-african-economics>

58 Deloitte. (2016). “Industry 4.0 Is Africa Ready for Digital Transformation?” <https://vdocuments.mx/industry-40-is-africa-ready-for-digital-transformation.html?page=1>

59 The National Development and Reform Commission of the People's Republic of China. (2021). “Accurately Grasp the Characteristics of the New Round of Industrial Revolution.” [https://www.ndrc.gov.cn/xxgk/jd/wsdwhfz/202107/t20210712\\_1290219.html](https://www.ndrc.gov.cn/xxgk/jd/wsdwhfz/202107/t20210712_1290219.html)



Germany, the Fourth Industrial Revolution will create new high-tech opportunities and reverse the trend of manufacturing industry transfer. However, emerging technologies also create new opportunities for the development of emerging economies. For one thing, digital platforms create a fair competitive environment for emerging economies to control their resource supply chains and sovereignty by establishing broader partnerships. For another, the diversity of the sources of this industrial revolution and the decentralization of innovation greatly enhance the spillover effect of technological innovation. Emerging countries can become early adopters of technology, gaining the ability to develop advanced manufacturing systems while surpassing their competitors through unique local development.<sup>60</sup>

Although African countries have many limitations in adopting new technologies, they have not been hindered by legacy infrastructure issues and may not have much resistance to technological changes. They will have enormous potential for direct adoption or further development.<sup>61</sup> In addition, it is important to note that Africa's huge consumer markets provide a greater possibility of leveraging the advantages of this round of new innovation drivers. Africa is not only a data source that supports technological innovation of "industry 4.0", but also a valuable market.<sup>62</sup>

It is precisely based on the above that under the Fourth Industrial Revolution, the innovation of the "traditional model giving way to the platform" business model is more likely to emerge and achieve results in Africa, helping African participants in the value chain to use the power of digital technology to adapt to the Fourth Industrial Revolution and achieve success.<sup>63</sup>

### **Global Industry Chain Reconstruction: The Evolution of the "World Factory"**

The structural adjustments of global industries and their shift have driven the dynamic evolution of international industrial division of labor from inter-industry division to intra-industry division, and then to intra-product division. In the past, the global industrial layout underwent four major adjustments, and the current global industry chains are seeing accelerating reconstruction. The formation of global industry chains is the result of the combined effects of market laws and enterprise choices, and the global industries show the trend of continuing to move towards developing countries with lower costs and greater market potential. Meanwhile, with increasing instability and uncertainties, global industry chains are gradually showing new features such as diversification, localization, regionalization, digitization, and low-carbon.<sup>64</sup>

The restructuring of global industry chains has brought enormous development opportunities for Africa, and participating in global and regional industry chains will provide Africa with more possibilities to acquire skills, technology, markets, and capital. Africa can utilize its own resource endowments, market potential, and regional integration

60 The National Development and Reform Commission of the People's Republic of China. (2021). "Accurately Grasp the Characteristics of the New Round of Industrial Revolution." [https://www.ndrc.gov.cn/xxgk/jd/wsdwhfz/202107/t20210712\\_1290219.html](https://www.ndrc.gov.cn/xxgk/jd/wsdwhfz/202107/t20210712_1290219.html)

61 Deloitte. (2016). "Industry 4.0 Is Africa Ready for Digital Transformation?" <https://www2.deloitte.com/za/en/pages/manufacturing/articles/africa-industry-4-0.html>

62 African Development Bank Group. (2019). Potential of the Fourth Industrial Revolution in Africa. [https://4irpotential.afdb.org/wp-content/uploads/2019/10/AFDB\\_4IRreport\\_Main.pdf](https://4irpotential.afdb.org/wp-content/uploads/2019/10/AFDB_4IRreport_Main.pdf)

63 World Economic Forum. (2019). "The Fourth Industrial Revolution will Change Production Forever. Here's How." <https://www.weforum.org/agenda/2019/01/the-opportunities-and-perils-of-4ir-production-platforms/>

64 Institute of Industrial Economy and Technological Economy of the National Development and Reform Commission. (2022). China Industrial Development Report 2022: Research on modernization of China's industrial chain supply chain. pp.3-6. Economic Science Press

processes to attract more foreign investment and technology transfer, achieving economic diversification and structural transformation.<sup>65</sup>

### **Column 9 Africa is expected to become the next world manufacturing center**

“Rising costs in China have prompted Chinese manufacturing entrepreneurs to look to Africa for higher-margin investments. It is possible that Africa might become the next big manufacturing center, supplanting China itself.”<sup>66</sup>

#### **AfCFTA: Dividends of regional integration<sup>67</sup>**

As one of the flagship projects of Agenda 2063, African Continental Free Trade Area (AfCFTA) was officially launched in 2021 and it is the world’s largest free trade area. AfCFTA is dedicated to raising the standard of living for Africans, harmonizing trade rules, facilitating intra-Africa trade, promoting inclusive trade and settling disputes. The core purpose of AfCFTA is to enable the free flow of goods and services throughout the entire African continent and to enhance Africa’s trade position in the global market.

With average tariffs of 6.1 percent, businesses currently face higher tariffs when they export within Africa than out of the continent. The AfCFTA will progressively eliminate tariffs on intra-Africa trade, making it easier for African businesses to trade within the continent and benefit from the growing African market. It is estimated that the AfCFTA has the potential both to boost intra-Africa trade by 52.3 percent by eliminating import duties and to double this trade if non-tariff barriers are also reduced. The AfCFTA is expected to expand the size of Africa’s economy to US\$29 trillion by 2050.

By August 2023, over 85% of the states and regions in Africa had deposited their instruments of AfCFTA ratification with the African Union.<sup>68</sup>

65 ACET. (2022). Transforming and Building Resilient Economies in Africa: Resetting priorities for the policy agenda in the post-COVID-19 era. <https://acetforafrica.org/research-and-analysis/reports-studies/reports/transforming-and-building-resilient-economies-in-africa-resetting-priorities-for-the-policy-agenda-in-the-post-covid-19-era/>

66 Irene Yuan Sun. (2017). “The World’s Next Great Manufacturing Center.” Harvard Business Review, <https://hbr.org/2017/05/the-worlds-next-great-manufacturing-center>

67 AfCFTA official website: <https://au-afcfta.org/>

68 Tralac. (2023). “Status of AfCFTA Ratification.” <https://www.tralac.org/resources/infographic/13795-status-of-afcfta-ratification.htm>

## 1.4 Challenges and constraints in the development and transformation of Africa's industry chains

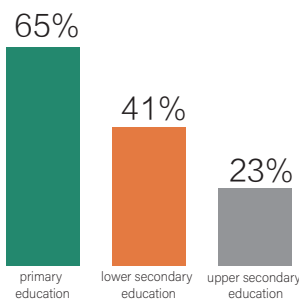
### 1.4.1 Production elements: Insufficient supply of advanced production elements

The transformation and upgrading of industry chains cannot be achieved without the investment of core elements such as technology, capital, and talent. The insufficient supply of advanced production elements has been a long-standing problem for Africa.

First, bridging the funding gap is difficult. Compared with other developing economies, Africa has a very small banking sector, and the asset size of the depository institutions is distributed in the bottom quarter of the countries, with about 2/3 located in Sub-Saharan Africa. The proportion of private sector credit to the GDP in Sub-Saharan Africa is only 38.9%, much lower than the figure of 172% in East Asia. The lack of stable and active capital markets limits the diversity of financing channels and options for enterprises, and high financing costs reduce their market competitiveness.<sup>69</sup>

Second, the talent support system is yet to be developed. The education system in Africa is less developed, with insufficient development of vocational education and relatively limited higher education resources.<sup>70</sup> The average completion rate of primary education in African countries is 65%, the rate of lower secondary education is 41%, and the rate of upper secondary education is only 23%. On average, only 3% of people aged 15 to 24 have received vocational and technical education and training. The enrollment rate in higher education is still lower than in other regions, and it is expected that only 4 out of every 100 young people in Africa will enter graduate schools.<sup>71</sup>

Third, the potential for technological innovation is yet to be unleashed. The talent gap continues to hinder the growth of technological fields that support industrialization, manufacturing, and value chain development.<sup>72</sup> Insufficient financial support for research and development innovation is also a critical issue. The African Union has set a target of 1% of GDP for research and development expenditure, but the average level in Sub-Saharan African countries is still 0.38%.<sup>73</sup> Africa only accounts for 0.3% of global research and development expenditure, 0.5% of global patent applications, 0.4% of global high-tech exports, and 0.8% of global medium-tech exports.<sup>74</sup> According to the readiness index for cutting-edge technology application by geographical region in 2023, countries in Sub-Saharan Africa rank lower. This means that African countries are particularly weak in



69 European Investment Bank. (2022). Finance in Africa: Navigating the financial landscape in turbulent times. [https://www.eib.org/attachments/lucalli/finance\\_in\\_africa\\_2022\\_en.pdf](https://www.eib.org/attachments/lucalli/finance_in_africa_2022_en.pdf)

70 The United Nations. (2018). "Africa Grapples with Huge Disparities in Education." <https://www.un.org/africarenewal/magazine/december-2017-march-2018/africa-grapples-huge-disparities-education>

71 UNICEF. (2021). Transforming Education in Africa: An evidence-based overview and recommendations for long-term improvements. <https://www.unicef.org/reports/transforming-education-africa>

72 The United Nations. (2018). "Africa Grapples with Huge Disparities in Education." <https://www.un.org/africarenewal/magazine/december-2017-march-2018/africa-grapples-huge-disparities-education>

73 UNCTAD. (2021). Technology and Innovation Report 2021. <https://unctad.org/publication/technology-and-innovation-report-2021>

74 BCG. (2021). "Igniting Innovation-Based Growth in Africa." <https://www.bcg.com/publications/2021/innovation-in-africa>

research and development, and are not prepared enough to use, adopt, or adjust cutting-edge technologies, and it may miss out on the current window of opportunity.<sup>75</sup>

## 1.4.2 Market environment: Complex and ever-changing business environment

Creating a favorable business environment to attract investment in the production sector, especially foreign direct investment inflows, helps to address structural constraints in Africa and is an important way for Africa to achieve transformation and upgrading of its industry chains.<sup>76</sup>

However, the current complex and ever-changing business environment in Africa has reduced investment attractiveness, affecting the injection of key resources such as funds and technology.<sup>77</sup>

According to the 2020 Global Business Environment Report, the average score of business environment in Sub-Saharan Africa is only 51.8, far below the world average of 63.0. Among the bottom 20 countries, 12 are from Sub-Saharan Africa. Power shortages, financing difficulties, and complex and delayed approval processes are common in Africa, as mentioned in the report.<sup>78</sup>

In addition, as one of the regions with the most severe conflicts in the world, the number of conflict-related incidents in Africa has increased over the past decade, from approximately 3,000 in 2009 to over 18,000 in 2021.<sup>79</sup> Security challenges such as military coups, extremism, terrorist attacks, and increased crime seriously hinder investment in industrial upgrading.<sup>80</sup> High inflation and increased risk of debt crisis also affect the business environment and economic growth.<sup>81</sup> Africa urgently needs to improve its governance, commit to improving the business environment, and actively attract investment.<sup>82</sup>

75 UNCTAD. (2023). Technology and Innovation Report 2023. <https://unctad.org/publication/technology-and-innovation-report-2023>

76 World Bank. (2017). Leapfrogging: The Key to Africa's Development - From Constraints to Investment Opportunities. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/121581505973379739/leapfrogging-the-key-to-africas-development-from-constraints-to-investment-opportunities>

77 EY. (2021). Reset for Growth: Fast forward. [https://assets.ey.com/content/dam/ey-sites/ey-com/en\\_za/topics/attractiveness/reports/ey-aar-reset-for-growth-final.pdf](https://assets.ey.com/content/dam/ey-sites/ey-com/en_za/topics/attractiveness/reports/ey-aar-reset-for-growth-final.pdf)

78 World Bank Group. (2019). Doing Business 2020. <https://archive.doingbusiness.org/en/reports/global-reports/doing-business-2020>. In September 2021, the World Bank Group issued a statement deciding to suspend the publication of the report.

79 AFDB. (2022). "Bank Group's Strategy for Addressing Fragility and Building Resilience in Africa (2022-2026)." <https://www.afdb.org/en/documents/bank-groups-strategy-addressing-fragility-and-building-resilience-africa-2022-2026>

80 Transparency International. (2023). CPI 2022 for Sub-Saharan Africa: Corruption compounding multiple crises. <https://www.transparency.org/en/news/cpi-2022-sub-saharan-africa-corruption-compounding-multiple-crises>

81 World Bank Group. (2023). Africa's Pulse: Leveraging resource wealth during the low carbon transition. <https://www.worldbank.org/en/publication/africa-pulse>

82 EY. (2021). Reset for Growth: Fast forward. [https://assets.ey.com/content/dam/ey-sites/ey-com/en\\_za/topics/attractiveness/reports/ey-aar-reset-for-growth-final.pdf](https://assets.ey.com/content/dam/ey-sites/ey-com/en_za/topics/attractiveness/reports/ey-aar-reset-for-growth-final.pdf)

### Column 10 African economies face debt pressure

“In terms of Africa’s public debt alone, it has more than doubled since 2010. The total public debt in 2022 was US\$36 billion, accounting for 63% of the GDP in 2022, up from 31.5% in 2010. In 2020, it reached 68.3%. Its interest expenditure has also significantly increased over the past decade, accounting for 3.3% of the GDP in 2022, surpassing the proportion of investment, health and other development expenditures... As of December 2022, the number of countries in Sub-Saharan Africa facing high external debt risk or falling into debt risk is 22 (see Table 3).”<sup>83</sup>

### 1.4.3 Transaction costs: Market segmentation and high circulation costs

Africa is one of the regions with the lowest level of regional integration in the world, with weak industry chain connections between countries and regions and severe market segmentation: regional value chains only account for 2.7% of the total participation in African value chains, while those of Latin America and the Caribbean account for 26.4% and those of Asian developing countries account for 42.9%.<sup>84</sup>

The proportion of intra-continent trade in Africa is only 17%, far lower than the level of 59% in Asia and 68% in Europe.<sup>85</sup> Most African economies are integrated into international production networks outside of the African continent by exporting raw materials and agricultural products for production and processing by other countries.<sup>86</sup>

### Column 11 Partial performance of market segmentation in African economies

“Although 39 African countries have enormous export potential in many inputs such as food (fruits and vegetables, grains, dairy products, etc.) and packaging items (cans, lids, and cartons), African producers only purchase 16% of inputs from the African continent in this value chain. The same applies to the automotive value chain, especially in the production of automotive seats.”<sup>87</sup>

The low correlation between African countries and regions is caused by multiple factors, including regional policies and poor infrastructure. Regional policies have led to an increase in internal trade costs in Africa, hindering regional production networks. The average regional tariff faced by enterprises when exporting within Africa is 6.1%, which is higher than the external level. Trade barriers related to non-tariff measures in importing and exporting countries affect 63% of African exporters, while the average proportion in developing countries is 56%.<sup>88</sup>

83 World Bank. (2019). “Global Waves of Debt: Causes and consequences.” <https://www.worldbank.org/en/research/publication/waves-of-debt>

84 UNECA. (2016). Macroeconomic Policy and Structural Transformation of African Economies. <https://archives.au.int/bitstream/handle/123456789/1410/Macroeconomic%20structural%20of%20Africa-E.pdf>; OECD. (2022). Regional Value Chains in Africa for Better Global Integration. <https://www.oecd.org/coronavirus/en/data-insights/regional-value-chains-in-africa-for-better-global-integration>

85 The World Economic Forum. (2021). “6 Reasons Why Africa’s New Free Trade Area is a Global Game Changer.” <https://www.weforum.org/agenda/2021/02/afecta-africa-free-trade-global-game-changer/>

86 United Nations. (2020). Identifying Priority Products and Value Chains for Standards Harmonization in Africa: Technical study. <https://repository.uneca.org/handle/10855/43813>

87 Africa Union. (2022). Made by Africa: Creating value through integration. <https://au.int/en/documents/20221123/made-africa-creating-value-through-integration>

88 Africa Union. (2022). Made by Africa: Creating value through integration. <https://au.int/en/documents/20221123/made-africa-creating-value-through-integration>

According to TRALAC's 2022 report, the trade cost of all goods within Africa increased by approximately 283% from 2015 to 2019 due to non-tariff barriers.<sup>89</sup> Multiple regional trade agreements within the African continent often pose obstacles.<sup>90</sup> Backward logistics, communications and other infrastructure are also important objective factors that hinder the connection of internal industrial chains in Africa, leading to ineffective connection of production links between regions, poor economic synergy, and difficulty in forming economies of scale and stable integrated supply networks. According to LPI data (Logistics Performance Index) compiled by the World Bank, Sub-Saharan Africa scored 2.53 out of 5 in 2022, below the global average (3.00 points) and other developing regions (such as the score of 3.30 points for East Asia and the Pacific).<sup>91</sup> Up to 75% of product costs in the African continent come from logistic expenses, while in the U.S., this figure is only 6%.<sup>92</sup>



**Figure 6** Eight major regional economic communities in Africa

Source: Africa UN Data for Development Portal

#### 1.4.4 Market demand: Insufficient coordination of quality management and standards for trade goods<sup>93</sup>

Compliance with standards and technical regulations is crucial for ensuring the quality of goods produced and traded. It helps establish consumer confidence in products, improve production and trade capabilities, increase product competitiveness, and promote mutually beneficial trade. It will also help integrate enterprises into regional and global value chains, and promote technological upgrading and absorption. With the above, it contributes to transformation and upgrading of industry chains and increased added value for products.

<sup>89</sup> Tralac. (2022). Intra-Africa Non-tariff Trade Costs for the Period 2015-2019. <https://www.tralac.org/resources/infographic/15537-intra-africa-non-tariff-trade-costs-for-the-period-2015-2019.html>; UNCTAD. (2019). Economic Development in Africa Report 2019. [https://unctad.org/system/files/official-document/aldcafrica2019\\_en.pdf](https://unctad.org/system/files/official-document/aldcafrica2019_en.pdf)

<sup>90</sup> Mengistu, M. M. (2015). "Multiplicity of African Regional Economic Communities and Overlapping Memberships: A Challenge for African Integration". *International Journal of Economics, Finance and Management Sciences*, 3(5), pp.417. <https://doi.org/10.11648/j.ijefm.20150305.12>

<sup>91</sup> Source: World Bank Database. <https://data.worldbank.org.cn/indicator/LPLPI.OVRL.XQ?view=chart>

<sup>92</sup> The World Bank. (2021). Digital Economy for Africa (Newsletter Spring 2021). <https://thedocs.worldbank.org/en/doc/b618f9ef700dde6e605c994f2170b704-0360022021/>

<sup>93</sup> United Nations. (2020). Identifying Priority Products and Value Chains for Standards Harmonization in Africa: Technical study. <https://repository.uneca.org/handle/10855/43813>



Due to insufficient coordination of product quality management and standards, it is difficult to meet the standards of key enterprises in industry chains and the standards of destination governments. This is a key challenge faced by African enterprises.

On the one hand, the constraints of high costs, insufficient brand awareness, and lack of qualified talent and innovative capabilities often make it difficult to improve the performance and efficiency of African products or services, and African enterprises face the problem of low product quality.

On the other hand, there is a lack of quality infrastructure for metrology, standards, certification, quality management, and conformity assessment in Africa. The numbers and complexity of technical regulations as well as differences in certification, testing, and inspection practices and standards used by different countries (including unnecessary sanitary and phytosanitary restrictions, unreasonable technical trade barriers, and other “post border” barriers and other non-tariff barriers) are less than helpful. They make it difficult for enterprises to meet the quality requirements of domestic and foreign markets. Africa’s abundant agricultural resources have lost competitiveness due to their inability to meet the food standards of importing countries.

Africa accounts for about 30% of the total non-conformity with EU food standards, with about 600 cases of Africa’s food shipments refused entry into the EU at its border between 2008 and 2013. Africa’s competitive advantage in its abundance of agricultural resources could easily be lost through inefficient logistics and poorly developed trade facilitation measures. Nevertheless, existing studies have overlooked the role of domestic factors such as institutions, trade-related infrastructure, and trade-related logistic procedures in explaining non-compliance with importing countries’ food standards.<sup>94</sup> Harmonizing standards across the entire African continent is equally crucial for achieving the trade and industrialization potential of AfCFTA.<sup>95</sup>

### **Column 12 Lack of trust in product quality reduces incentives for local sourcing**

“Lack of trust in product quality. This reduces incentives for local sourcing. The continent requires a sound quality management framework. African input suppliers and output producers often do not know each other – due to a lack of trust, not a lack of opportunity. This prevents them from connecting and forging business ties.”<sup>96</sup>

94 Kareem, F. O., Martínez-Zarzoso, I., & Brümmner, B. (2022). “What Drives Africa’s Inability to Comply with EU Standards? Insights from Africa’s Institution and Trade Facilitation Measures”. *The European Journal of Development Research*. <https://doi.org/10.1057/s41287-022-00547-9>

95 UNECA. (2020). “Harmonization of standards across Africa is vital to the realization of trade and industrialization potential of the AfCFTA.” <https://www.uneca.org/stories/harmonization-standards-across-africa-vital-realization-trade-and-industrialization-potential>

96 Africa Union. (2022). *Made by Africa: Creating value through integration*. <https://au.int/en/documents/20221123/made-africa-creating-value-through-integration>





## Chapter 2

# Impact of China-Africa Cooperation on the Development and Transformation of Africa's Industry Chains

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## 2.1 China's support in the mechanism framework and policy evolution for the development and transformation of Africa's industry chains

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### 2.1.1 The Belt and Road Initiative: The concept of "Five Connectivity" and a China-Africa community of shared future in the new era

In 2013, President Xi Jinping proposed the idea of jointly building the "Silk Road Economic Belt" and the "21st Century Maritime Silk Road" during his visits to Central and Southeast Asia.<sup>97</sup> In 2015, the Chinese government issued a white paper titled Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road. It proposed "Five Connectivity": policy coordination, connectivity of infrastructure and facilities, unimpeded trade, financial integration, and closer people-to-people ties as the main goals of the Belt and Road Initiative. It also proposed the principles of extensive consultation, joint contribution, and shared benefits, as well as active promotion of the Belt and Road cooperation. The proposal was welcomed by the international community.<sup>98</sup>

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<sup>97</sup> The State Council Information Office. (2014). "Background and Specific Ideas of the Belt and Road Initiative." <http://www.scio.gov.cn/ztk/wh/slxy/31200/Document/1415297/1415297.htm>

<sup>98</sup> Central People's Government of the People's Republic of China. (2017). "Ideas on Maritime Cooperation in the Construction of the Belt and Road." [https://www.gov.cn/xinwen/2017-06/20/content\\_5203985.htm](https://www.gov.cn/xinwen/2017-06/20/content_5203985.htm)



**Figure 7** The Belt and Road on the map<sup>99</sup>

Source: [www.china.org.cn](http://www.china.org.cn)

Africa is the historical and natural extension of the Belt and Road. The docking of the Belt and Road Initiative (BRI) with Africa has evolved from early pilots to strategic docking, and then to gradual rollout.

Africa's first positioning in the BRI was in the form of early pilots. The 2015 Declaration of the Johannesburg Summit of the Forum on China-Africa Cooperation proposed that "the two sides will actively explore the linkages between China's initiatives of building the Silk Road Economic Belt and 21st Century Maritime Silk Road and Africa's economic integration and sustainable development agenda." This led China-Africa cooperation on building the Belt and Road into a new stage of strategic docking.

Subsequently, Africa's position in the BRI has become increasingly precise. The Beijing Summit of the Forum on China-Africa Cooperation in 2018 listed the joint building of the Belt and Road by China and Africa as an important element.

The Dakar Declaration of the 8th Ministerial Conference of the Forum on China-Africa Cooperation in 2021 emphasized that the joint building of the Belt and Road should be closely linked with the African Union's Agenda 2063, the UN 2030 Agenda for Sustainable

<sup>99</sup> Report on the Development of International City (2023). There are 38 major cities, 16 secondary cities, 20 general cities and 94 cities with potential development (except China's city) along the Belt and Road.

Development, and the development strategies of African countries, so as to facilitate high-quality joint building of the Belt and Road.

The Vision for China-Africa Cooperation 2035 released at the same time proposed that China and Africa should become closer partners in building the Belt and Road. By June 2023, China has signed cooperation documents with 52 African countries and the African Union on the Belt and Road.<sup>100</sup>

**The concept of “Five Connectivity” in the BRI laid the foundations for China-Africa cooperation on industry chains.**

Among the five, policy coordination helps to consolidate the political foundations between China and Africa, build mutual political trust, gather consensus on cooperation, accelerate the establishment of industrial projects, and support the construction of industry chains.

Connectivity of infrastructure and facilities helps to improve the infrastructure in African countries and consolidate the foundations for industrialization and industry chain cooperation.

Unimpeded trade helps to achieve efficient and convenient logistics, organic integration, and positive interactions in trade and industry chains.

Financial integration provides strong financial support for small and medium-sized enterprises in China-Africa cooperation, safeguarding and supporting the development of basic industries in Africa.

Closer people-to-people ties help to build solid foundations of public support, strengthen communication and understanding between the Chinese and African peoples, and provide “soft” assistance for the transformation of African industries and the extension of China’s industry chains into Africa.<sup>101</sup>

**“The Belt and Road cooperation is a form of strategic docking rather than starting from scratch, and makes each side’s strengths mutually complementary.”<sup>102</sup>**

The 2018 Beijing Summit of the Forum on China-Africa Cooperation (FOCAC) designated FOCAC as the main platform for China and Africa to build the Belt and Road. This clarifies the strategic level of BRI docking with Africa, and the mechanism platform of BRI cooperation in Africa.

China and Africa will take the high-quality joint development of the Belt and Road as a starting point, and use FOCAC as an important platform for collective dialogue and an effective mechanism for practical cooperation to expand their cooperation in all fields. They will build the Belt and Road into a peaceful, prosperous, open, green, and innovative road

100 China Institute of International Studies. (2019). “Africa’s Development Trend and China and Africa Jointly Build ‘the Belt and Road’.” [https://www.ciis.org.cn/gjwtyj/qkml/2019n/202007/t20200714\\_4619.html](https://www.ciis.org.cn/gjwtyj/qkml/2019n/202007/t20200714_4619.html);

Central People’s Government of the People’s Republic of China. (2021). “Dakar Declaration of the 8th Ministerial Conference of the China-Africa Cooperation Forum (full text).” [https://www.gov.cn/xinwen/2021-12/02/content\\_5655364.htm](https://www.gov.cn/xinwen/2021-12/02/content_5655364.htm); China International Development Cooperation Agency. (2021). “Vision for China-Africa Cooperation 2035.” [http://www.cidca.gov.cn/2021-12/09/c\\_1211480567.htm](http://www.cidca.gov.cn/2021-12/09/c_1211480567.htm); China’s Belt and Road Network. (2023). “List of countries that have signed cooperation documents with China to jointly build ‘the Belt and Road’.” <https://www.yidaiyilu.gov.cn/p/77298.html>

101 China’s Belt and Road Network. (2019). “He Wenping: ‘the Belt and Road’ and China-Africa cooperation: Precise docking and high-quality development.” <https://www.yidaiyilu.gov.cn/p/95609.html>

102 Xinhua Net. (2017). “Xi Jinping: The building of the Belt and Road is not starting from scratch.” [http://www.xinhuanet.com/world/2017-05/14/c\\_129604248.htm](http://www.xinhuanet.com/world/2017-05/14/c_129604248.htm)

of civilization between them, and jointly build a “community of shared future for China and Africa in the new era”.<sup>103</sup>

## 2.1.2 FOCAC: Ten Major China-Africa Cooperation Plans, Eight Major Initiatives, and Nine Programs<sup>104</sup>

The Forum on China-Africa Cooperation (FOCAC), established in 2000, is an important platform and effective mechanism for strengthening mutual consultation, understanding, consensus, friendship, and cooperation between China and Africa. As of 2023, there have been eight forums, including three summits.



**Figure 8** Previous ministerial conferences/summits of FOCAC

Source: Public information

In recent years, the Ten Major China-Africa Cooperation Plans, Eight Major Initiatives and Nine Programs have raised the level of China-Africa economic and trade cooperation to a new historical high. They were launched at the 2015 Johannesburg Summit, the 2018 Beijing Summit, and the 2021 8th Ministerial Conference of the FOCAC respectively.

<sup>103</sup> Central People's Government of the People's Republic of China. (2021). White Paper on China-Africa Cooperation in the New Era. [https://www.gov.cn/zhengce/2021-11/26/content\\_5653540.htm](https://www.gov.cn/zhengce/2021-11/26/content_5653540.htm)

<sup>104</sup> Ministry of Commerce of the People's Republic of China. (2015). "Interpretation of the Economic and Trade Content of the 'Ten Major China-Africa Cooperation Plans' of the Johannesburg Summit and 6th Ministerial Conference of the China-Africa Cooperation Forum." <http://www.mofcom.gov.cn/article/ae/ai/201512/20151201208518.shtml>; Ministry of Commerce of the People's Republic of China. (2018). "Interpretation of the 'Eight Major Initiatives' of the Beijing Summit of the China-Africa Cooperation Forum." <http://www.mofcom.gov.cn/article/ae/ai/201809/20180902788421.shtml>; Ministry of Commerce of the People's Republic of China. (2022). "Interpretation of the 'Nine Programs' of the 8th Ministerial Conference of the China-Africa Cooperation Forum." <http://ne.mofcom.gov.cn/article/sqfb/202201/20220103237203.shtml>

Within the overall framework, there are eight major plans, six major initiatives, and seven programs that play a leading role in promoting China-Africa cooperation on industry chains and the development and transformation of African industry chains.<sup>105</sup>

**Table 2** Themes closely related to industry chains in the Ten Major China-Africa Cooperation Plans, Eight Major Initiatives, and Nine Programs

Ten Major China-Africa Cooperation Plans	Eight Major Initiatives	Nine Programs
<p><b>Industrialization:</b></p> <p>Cooperation platform construction Planning layout support Management and technical talent cultivation Basic vocational skills training</p> <p><b>Agricultural modernization:</b></p> <p>Implementation of agricultural enriching projects Enhancement of agricultural development capability Development of scientific cooperation in agriculture Emergency food aid</p> <p><b>Infrastructure:</b></p> <p>Railways, highways and ports Regional aviation Electricity Information communication Talent and R&amp;D Financial services: Financial support and services</p> <p><b>Green development:</b></p> <p>Clean energy Environmentally friendly agriculture Smart city construction</p> <p><b>Trade and investment facilitation:</b></p> <p>Trade promotion assistance Free trade zone cooperation E-commerce cooperation</p> <p><b>Poverty reduction and benefiting farmers:</b></p> <p>Poverty reduction projects Debt relief</p> <p><b>Public Health:</b></p> <p>Medical assistance and capacity building</p>	<p><b>Industrial promotion:</b></p> <p>Establishing the China-Africa Economic and Trade Expo (CAETE) Expanding investment in Africa Developing agricultural planning Providing agricultural assistance Improving agricultural technology Fulfilling social responsibilities Deeper financial cooperation</p> <p><b>Facility connectivity:</b></p> <p>Strengthening top-level design Implementing key projects Deeper aviation cooperation Expanding financing channels Trade facilitation: Expanding imports from Africa</p> <p><b>Trade promotion assistance</b></p> <p>Brand communication Free trade cooperation commerce cooperation</p> <p><b>Green development:</b></p> <p>Implementing green projects Strengthen environmental cooperation Building a Bamboo Center Enhance environmental awareness</p> <p><b>Capacity building:</b></p> <p>Exchange development experience Luban Workshop The head goose plan Personnel training Innovation and entrepreneurship</p> <p><b>Public Health:</b></p> <p>Medical assistance and health cooperation</p>	<p><b>Healthcare:</b></p> <p>Health assistance and medical cooperation</p> <p><b>Poverty reduction and benefiting farmers:</b></p> <p>Livelihood assistance Poverty reduction cooperation Technical support</p> <p><b>Trade promotion:</b></p> <p>Expand trade scale Supporting the development of free trade Building a trade promotion platform (The Pilot Zone for In-Depth China-Africa Economic and Trade Cooperation and the Belt and Road China-Africa Cooperation Industrial Park)</p> <p><b>Investment drivers:</b></p> <p>Increasing investment Infrastructure cooperation Financial cooperation</p> <p><b>Digital Innovation:</b></p> <p>Digital cooperation Technological innovation E-commerce development</p> <p><b>Green development:</b></p> <p>Green Aid and Cooperation</p> <p><b>Capacity Building:</b></p> <p>Building educational facilities Cultivate various talent Create employment opportunities</p>

Source: Ministry of Commerce of the People's Republic of China

Taking the Eight Major Initiatives as an example. The Industrial Promotion Initiative provides extensive support for the core elements of industrial development such as funding,

<sup>105</sup> China-Africa Business Council. (2022). Chinese Investment in Africa 2022: China-Africa Cooperation from a Supply Chain Perspective. [http://www.focac.org.cn/zgqytzfzbg/202108/t20210831\\_9133895.htm](http://www.focac.org.cn/zgqytzfzbg/202108/t20210831_9133895.htm)



technology, and talent, helping Africa to accelerate industrialization and agricultural modernization, and providing the necessary conditions for China-Africa cooperation on industry chains.

The Infrastructure Connectivity Initiative will coordinate and promote cross-border and cross-regional cooperation projects in Africa. In the four major infrastructure development areas of concern to Africa – energy, transport, information and communication, and cross-border water resources – China will use its strengths in construction experience, funding, equipment, and technology, to help Africa implement a number of key projects in fields such as railways, highways, ports, aviation, electricity, and telecommunications, to improve its infrastructure and business environment. This will promote regional connectivity and provide strong support for the development of the African industry chains and cooperation between China and Africa.

The Trade Facilitation Initiative focuses on expanding China's imports from Africa, reducing tariff and non-tariff trade barriers, opening up the China-Africa trade chain, and better leveraging the role of trade in promoting African economic growth and China-Africa cooperation on industry chains.

The Green Development Initiative assists in the green transformation of Africa's local economic development model, and is also a commitment and objective of China-Africa cooperation on industry chains in the new era.

The Capacity Building Initiative serves talent cultivation in industrial development and industry chain cooperation, to meet the developing need for talent.

The Health Care Initiative focuses on urgent requirements for medical security capacity in African countries, while introducing traditional Chinese medicine industry into Africa.

From the Ten Major China-Africa Cooperation Plans to the Eight Major Initiatives and then to the Nine Programs, China's cooperation policies have kept up with the times. They reflect China's accumulated experience in its cooperation with Africa on industry chains, and demonstrate China's vision of an even brighter future.

Taking China's cooperation with Africa in the agricultural industry chain as an example. As a key area of China-Africa cooperation, in our work on the agricultural industry chain, we have always attached equal importance to aid, investment, and trade, with technology transfer as the core. It also adheres to the concept of sustainable development and other Chinese priorities. However, as China-Africa cooperation evolves, new actions and measures emerge.<sup>106</sup>

Relevant technology transfer has always served to bridge the technological gap in China-Africa cooperation on industry chains. The Ten Major China-Africa Cooperation Plans have introduced technology transfer to agricultural research for the first time, proposing the establishment of a "10+10" cooperation mechanism between Chinese and African agricultural research institutes, and placing greater emphasis on the role of enterprises in the process of technology transfer.

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<sup>106</sup> Yuan Xiaohui. (2022). "Review and Outlook on China-Africa Agricultural Cooperation under the Framework of the China-Africa Cooperation Forum." *International Economic Cooperation* (06), pp. 43-51, pp.87-88.

The Eight Major Initiatives continue to include the development of new technologies and the sharing of cutting-edge agricultural technologies in the cooperation agenda, and propose to help cultivate young agricultural research leaders in Africa.

The Nine Programs will also see the establishment in China of a group of joint centers for China-Africa modern agricultural technology exchange demonstration and training, capitalizing on established agricultural technology demonstration centers in Africa, and accelerating the integration of technological achievements aligned with African countries' agricultural conditions that meet the needs of cooperation on industry chains in this field.

In addition, the mutual impact of China-Africa trade cooperation and China-Africa industrial chain cooperation is becoming increasingly evident. Taking the China-Africa industrial park for Belt and Road cooperation for example, the Wepon Group<sup>107</sup> has established the Zhejiang Wenling China-Africa International Medical Cooperation Industrial Zone, making efforts to promote mutual interactions in China-Africa medical cooperation. In particular, the targets of key commodities and supporting policy measures are constantly clarified and enriched. The Ten Major China-Africa Cooperation Plans expand the overall scale of African exports to China. The Eight Major Initiatives expand the imports of African goods, especially non-resource products. The Nine Programs further proposes to establish "green lanes" for African agricultural products to be exported to China, providing more favorable policy support for cooperation in the agricultural industry chain between China and Africa. By helping Africa improve its inspection and quarantine capabilities, incubating e-commerce platforms, and other measures, it has expanded the import of agricultural products from Africa.



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<sup>107</sup> China-Africa Bridge (2022). China-South Africa Joint Efforts for Healthy Cooperation.

**Table 3** Some characteristics of cooperation in the agricultural industry chain between China and Africa

Features	Ten Major China-Africa Cooperation Plans	Eight Major Initiatives	Nine Programs
Equal emphasis to aid, investment and trade	Agricultural modernization cooperation plan: 1 billion yuan in emergency food aid. Agricultural modernization cooperation plan: Encourage Chinese enterprises to carry out large-scale planting, animal husbandry, grain storage and processing in Africa. Trade and Investment Facilitation Cooperation Plan: Expand the scale of African products exported to China.	Industry Promotion Initiative: 50 agricultural aid projects, emergency humanitarian food aid of 1 billion yuan. Industry Promotion Initiative: Expand investment in Africa, especially in traditional and emerging fields such as manufacturing, agriculture, financial services, commercial logistics, and digital economy. Trade Facilitation Initiative: Expand imports of African goods, especially non-resource products.	The Poverty Reduction and Benefiting Farmers Program: 10 poverty reduction and agricultural projects. The Investment Promotion Program: Total investment by enterprises in Africa will be no less than 10 billion US dollars, and the "China-Africa Private Investment Promotion Platform" will be established. The Trade Promotion Program: Establish "green lanes" for the export of African agricultural products to China, speed up the promotion of quarantine access procedures, expand the range of products with zero tariff treatment for export to China, establish a US\$10 billion trade financing line, and build the Pilot Zone for In-Depth China-Africa Economic and Trade Cooperation and the Belt and Road China-Africa Cooperation Industrial Park.
Technology transfer as the core	Agricultural Modernization Cooperation Plan: Dispatch 30 batches of agricultural expert groups to Africa to establish a "10+10" cooperation mechanism for Chinese and African agricultural research institutes.	Industry Promotion Initiative: Dispatch 500 senior agricultural experts to cultivate young agricultural research leaders and leaders in achieving wealth among farmers.	Poverty Reduction and Benefiting Farmers Program: Dispatch 500 agricultural experts to establish in China a group of joint centers for China-Africa modern agricultural technology exchange demonstration and training.
Sustainable development	Green Development Cooperation Plan: Environmentally friendly agriculture.	Green Development Initiative: 50 green development and eco-environmental protection assistance projects, construction of China-Africa Environmental Cooperation Center, etc.	Green Development Program: 10 green environmental protection and climate change response projects, construction of the "Green Great Wall of Africa", construction of low-carbon demonstration zones and climate change adaptation demonstration zones.

Source: Ministry of Commerce of the People's Republic of China

In addition, China continues to provide solid foundations for cooperation in the construction and expansion of the China-Africa industrial chain in the fields of infrastructure and emerging industries. Compared with the Ten Major China-Africa Cooperation Plans, the Eight Major Initiatives place greater emphasis on top-level design in the field of infrastructure, establishing a joint working group on cross-border and cross-regional infrastructure construction cooperation in Africa. The group's responsibilities include joint preparation of the China-Africa Infrastructure Cooperation Plan for the coordination and promotion of cross-border and cross-regional cooperation projects in Africa. It provides policy direction for exploring cooperation in the infrastructure industry chain between China and Africa. The Eight Major Initiatives emphasize the comprehensive development and operation of the entire chain through integration of investment, construction, and operations.

The Nine Programs refer to cooperation in infrastructure between China and Africa in the Trade Promotion Program and the Investment Promotion Program, highlighting the role of infrastructure as a bridge for building China-Africa cooperation in industry chains.



In the field of emerging industries, the Ten Major China-Africa Cooperation Plans and the Eight Major Initiatives both refer to China-Africa e-commerce cooperation in trade facilitation measures. The Nine Programs further propose the Digital Innovation Program, emphasizing cooperation with African countries in the digital economy, and highlighting the catalytic role of the digital economy in China-Africa cooperation on industry chains.

### 2.1.3 BRICS: China-Africa Leaders' Dialogue during the 15th BRICS Summit<sup>108</sup>

In August 2023, during the 15<sup>th</sup> BRICS' Summit, the China-Africa Leaders' Dialogue was held. After the meeting, China released three measures: the Initiative to Support African Industrialization, the Plan of China's Assistance for African Agricultural Modernization, and the Plan of China-Africa Talent Training Cooperation, to support African integration and modernization.

The Initiative to Support Africa's Industrialization states that China is willing to support the development of manufacturing, digital industries, and renewable energy development, strengthen knowledge sharing and technology transfer, optimize trade facilitation measures, and expand imports of high-quality industrial products. It calls for faster global financial system reform and financial support for Africa's industrialization, forming a strong joint force to assist Africa's industrialization.

The Plan of China's Assistance for African Agricultural Modernization indicates that China will extend the docking of agricultural development strategies and policy consultation between China and Africa, and strengthen exchanges and cooperation in areas such as sustainable agriculture, digital agriculture, and the blue economy. China will be committed to helping Africa cultivate and expand its agricultural industry chains and increase the added value of agricultural products. China will establish the China-Africa Agricultural Science and Technology Innovation Alliance with Africa, increase agricultural technology cooperation and joint research, and help Africa cultivate more local professional talent. It will also enrich and improve the "green lanes" for African agricultural products to be exported to China, and continuously expand the scale of exports of African agricultural products to China.

The Plan of China-Africa Talent Training Cooperation emphasizes that China will continue to strengthen cooperation with Africa in capacity building such as technology transfer, education, and training, including the implementation of the Plan for Cooperation Between 100 Chinese and African Universities and the BRI teacher growth plan. China will train 500 heads and key teachers for African vocational colleges every year, and train 1,000 native Africans as Chinese teachers. It will also train 10,000 local composite talents through the implementation of "Chinese language + vocational skills" education. It will carry out a plan for young African scientists to come to China, supporting 300 young African scientists to come to China in the next three years.

108 Government of the People's Republic of China. (2023). "The Dialogue of Chinese and African Leaders released the Initiative to Support Africa's Industrialization, Plan of China's Assistance for African Agricultural Modernization, and Plan of China-Africa Talent Training Cooperation." [https://www.gov.cn/yaowen/liebiao/202308/content\\_6900010.htm](https://www.gov.cn/yaowen/liebiao/202308/content_6900010.htm)

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## 2.2 China's existing cooperation models and actions to promote the development and transformation of Africa's industry chains

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### 2.2.1 Industry docking and industrial capacity cooperation<sup>109</sup>

China-Africa cooperation on industrial capacity is based on comparative strengths and international division of labor, closely linking Africa's abundant raw materials and labor cost/availability advantages with China's high-quality industrial capacity. It involves a wide range of fields such as two-way trade, two-way investment, contracting projects, aid to Africa, financial cooperation, and regional economic integration.

It goes beyond the traditional single international division of labor model that is represented by international trade, international investment, and international technology flows. It is a cross-border cooperation model that spans national geographical boundaries and includes product division of labor cooperation, consumer markets, and production factor markets. China-Africa cooperation on industrial capacity meets the needs of China's industrial upgrading as well as the urgent needs for industrialization, urbanization, and integration in African countries. It helps with the development and transformation of African industry chains and increases their capacity for independent development.

The first goal of China-Africa industrial capacity cooperation is to use Africa's local strengths, helping it transform its advantages in natural resources and labor costs into a driving force for its economic development. The second is to expand investment in local infrastructure construction, laying the foundations for economic transformation. The third is to provide extensive financial, technical, and experiential support.

In terms of industry configuration, China-Africa cooperation features simultaneous advances in the construction of large-scale infrastructure, industrial parks, and special economic zones, and resource and energy development and utilization. It is designed to promote the close integration and coordinated development of large-scale infrastructure and resources and industries, and achieve the extension and transformation of multiple industry chains.

In terms of country selection, cooperation adheres to the concept of intensive development, and adopts a step-by-step approach of moving from eastern to western Africa, combining points, lines, and areas. For example, it focuses on supporting Ethiopia, Kenya, Tanzania, and Congo-Brazzaville, creating pilot demonstration countries. It also lists South Africa as a key implementation partner. As of 2022, a total of 15 African countries have signed agreements with China on industrial capacity cooperation.

**As important components of China-Africa industrial capacity cooperation, trade, engineering contracting, and investment, have generated significant results. First, trade in goods between China and Africa is steadily increasing.** China has maintained its position as Africa's largest trading partner for the past 14 years. In 2022, the total trade

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<sup>109</sup> Yao Guimei. (2022). Production Capacity Cooperation Between China and Africa, pp.16-81. China Social Sciences Press

in goods between China and Africa reached US\$282 billion, a year-on-year increase of 10.9%. Three indicators – trade in goods between China and Africa, China's exports to Africa, and China's imports from Africa – have all reached new historical highs. In particular, China's exports of transport equipment such as vehicles to Africa have grown rapidly and the rise in agricultural products imported from Africa is significant, with an average annual growth rate of 11.4% in recent years.

**Second, there are numerous highlights in infrastructure engineering construction.** Chinese enterprises have built a large number of high-quality projects in Africa in areas such as transport, power engineering, communication engineering, and water conservancy facilities, including the Mombasa–Nairobi Standard Gauge Railway (SGR). In 2022, Chinese companies signed new contracts worth US\$73.22 billion for engineering contracting in Africa. Actual revenues reached US\$37.84 billion, a year-on-year increase of 2%.

**Third, Chinese investment in Africa is becoming increasingly active.** China has become the fourth largest source of investment for Africa. China's direct investment in Africa increased from US\$4.23 billion in 2020 to US\$4.99 billion in 2021, a year-on-year increase of 18%; the stock of China's direct investment in Africa has increased to US\$44.19 billion. China has not only invested in traditional industries in Africa, such as construction, mining, and manufacturing, but also increased its investment in agriculture and agricultural product processing, financial services, aerospace, and other fields.<sup>110</sup>

### Column 13 China's investment in Africa's ceramic industry

According to incomplete statistics from the media, 16 Chinese companies including Keda, Wangkang, and Bordar have invested over 6.17 billion yuan in Africa, building over 51 ceramic production lines with a total daily production capacity of about 800,000 square meters. The industry chain covers about 10 African countries, helping products to achieve import substitution and even export earnings, while also saving building material costs for Chinese enterprises in Africa.

### Column 14 Ghana's largest airline: Africa World Airlines

In September 2012, the China-Africa Development Fund, HNA Aviation Holdings Limited, and Ghana jointly funded the establishment of Africa World Airlines (AWA) in Ghana, which has now developed into the largest airline in Ghana.

AWA is the first airline in Africa with Chinese participation in the incorporation and operation. It now operates 7 routes and charter flights in Ghana and West Africa. Since 2016, it has made consistent profits and has a market share of over 80% in Ghana's domestic routes; it has a total of 315 staff members, only 6 of whom are Chinese.

## 2.2.2 Industrial parks and industrial investment

**The joint construction of China-Africa industrial parks provides an important carrier for China's investment in Africa, supporting and guiding enterprises in the parks to**

<sup>110</sup> Secretariat of China-Africa Economic and Trade Expo. (2023). China-Africa Economic and Trade Relationship Report 2023. <https://www.vzkoo.com/document/202307079d8c5589fa0ece5f613f48b5.html>

**establish a full industry chain system for various products in Africa.** As early as at the Beijing Summit of the Forum on China-Africa Cooperation in 2006, China proposed eight major measures in this regard, including the establishment of 3 to 5 economic and trade cooperation zones in African countries, to promote the development of African manufacturing industry through China-Africa industrial cooperation.

China's Second Africa Policy Paper was released in Johannesburg in 2015, which specified that China would support African countries in building special economic zones, industrial parks, and science and technology parks to attract new talent. China would guide, encourage and support Chinese enterprises to jointly build economic and trade cooperation zones in Africa, as an important platform for promoting industrial capacity cooperation between China and Africa.

Under the guidance of the policy, the number of China-Africa industrial parks and economic and trade parks is steadily increasing, and the scope of business is diversifying. To date, China has established almost 100 economic and trade parks in Africa, and the number of Chinese funded parks in Africa as registered by the Chinese Ministry of Commerce has reached 25 (Appendix 2), attracting over 620 enterprises, with a cumulative investment of US\$7.35 billion, employing 42,000 local employees, and paying various taxes and fees to the host countries of US\$1.48 billion. Multiple industrial clusters are taking shape, including mineral resources, equipment manufacturing, light industry and textiles, and household appliances.<sup>111</sup>

**By funding sources, China's parks in Africa can be divided into three categories:** national-level, provincial- or municipal-level, and enterprise-built parks. Under the framework of the Forum on China-Africa Cooperation, China has established six economic and trade cooperation zones in five African countries. Of these, China-Egypt TEDA Suez Economic and Trade Cooperation Zone, Nigeria's Lekki Free Trade Zone, Ethiopia's Eastern Industrial Park, and Zambia's China Economic and Trade Zone are examples of national-level parks.

At the same time, provincial governments in China actively encourage their enterprises to join the wave of China-Africa cooperation, for example through the Liaoning-Shenyang Industrial Park in Uganda and the Hunan Adama Industrial Park in Ethiopia. Building of these parks is being accelerated.

In addition, some seed enterprises from China have exploited their experience of operating in Africa to invest in the construction of industrial parks. For example, Huajian Group has achieved preliminary results in the International Light Industry Park in Ethiopia and Tiantang Group in the Mbale Industrial Park in Uganda. Overall, China-Africa economic and trade cooperation zones are transitioning from an initial construction stage to the fully operational stage, and has achieved good results.<sup>112</sup>

111 Hunan Daily. (2023). "More than 620 Chinese Enterprises have Invested in the Construction of 25 Industrial Parks in Africa." [https://gxt.hunan.gov.cn/gxt/xxgk\\_71033/gzdt/rdjj/202307/t20230703\\_29389690.html](https://gxt.hunan.gov.cn/gxt/xxgk_71033/gzdt/rdjj/202307/t20230703_29389690.html)

112 Yao Guimei. (2022). Production Capacity Cooperation Between China and Africa, pp.49-50. China Social Sciences Press

**Table 4** Progress in some economic and trade cooperation parks or zones in Africa

Country	Cooperation park or zone	Implementation unit	Number of enterprises in the park	Amount of accumulated investment (100 million yuan)	Key industries
Egypt	China-Egypt TEDA Suez Economic and Trade Cooperation Zone	China-Egypt TEDA Investment Co., Ltd.	>140	>16	Petroleum equipment, high- and low-voltage electrical appliances, textile and clothing, new building materials, machinery manufacturing
Nigeria	Lekki Free Trade Zone	China-Africa Lekki Investment Ltd.	102	>3.53	Processing and manufacturing, commercial logistics, real estate, urban services
Ethiopia	Eastern Industrial Park	Jiangsu Yongyuan Investment Co., Ltd.	124	>9	Textile, building materials, automotive assembly, food processing, medical treatment
Zambia	The Zambia-China Economic and Trade Cooperation Zone (ZCCZ)	China Nonferrous Metal Mining Group	About 100	>25	Non-ferrous metals; commerce, logistics, processing, real estate

Source: Public information

### Column 15 Chinese-funded industrial park in Uganda: The China-Uganda Mbale Industrial Park

Many industrial parks have been funded and constructed by Chinese enterprises in Uganda, such as the China-Uganda Mbale Industrial Park and the Shandong Industrial Park. The China-Uganda Mbale Industrial Park is one of the 22 national-level industrial parks in Uganda, established by Tiantang Group in 2017. It is planned that the park will have a total investment of US\$600 million, attract 40 permanent enterprises, achieve an annual output value of US\$1.5 billion and an annual export value of US\$400 million, and provide 15,000 job opportunities. After the tax exemption period expires, local tax revenue will increase by US\$50 million per annum.

In the construction and operation of the Mbalai park, Tiantang Group has set up its own factories with home appliances and home furniture industries as the core. However, in accordance with the park's layout planning, it actively seeks, inspects, and invites competitive, complementary, and environment-friendly Chinese enterprises to set up factories in the Mbalai Park. It adheres to the concept of "relying on the park and going out together", leveraging the park platform to achieve mutual assistance and sharing of various resources among the enterprises, and promoting the development of local manufacturing industries.

**The construction of China-Africa industrial and economic and trade parks has greatly improved Africa's own endogenous capacity. It has played a positive role in economic recovery after the COVID-19 pandemic, upgrading the industrialization level and export and foreign exchange earning capacity of the countries where the parks are located.**<sup>113</sup>

Taking the China-Egypt TEDA Suez Economic and Trade Cooperation Zone as an example. As a demonstration project of China-Egypt economic and trade cooperation, it currently has the best comprehensive environment, the highest investment density, the highest unit output, and the highest concentration of Chinese enterprises in Egypt. It has attracted over 140 enterprises, with actual investment of over 1.6 billion U.S. dollars, cumulative sales revenues of over 3.7 billion U.S. dollars, and a tax contribution of over 200 million U.S. dollars. It directly employs nearly 6,000 workers, and supports 50,000 indirect jobs. Five major industrial clusters have been formed here: petroleum equipment, high- and low-voltage electrical appliances, textile and clothing, new building materials, and machinery manufacturing. At the same time, it has attracted upstream and downstream enterprises in the industry chains, accelerating the trend of industrial agglomeration.

On July 12, 2023, the China-Egypt TEDA Suez Economic and Trade Cooperation Zone held a ceremony to mark its 15th anniversary and to release Vision 2030 of the TEDA Cooperation Zone - A Plan for Strategic Upgrade. According to the plan, the Zone will cultivate a group of leading enterprises with outstanding competitive advantages and strong driving capabilities. It will launch three major projects – the Industrial Agglomeration Capacity Enhancement Project, the Industrial Service Capacity Enhancement Project, and the Industrial Supporting Capacity Enhancement Project. It will cultivate upstream and downstream enterprises around the core enterprises of the industry chains, building efficient links in all the industry chains.

The Zone will activate industrial agglomeration through the development of industry chains. It will promote the overall development of the Zone and work with stakeholders from both Egypt and China on a model of “one core, two corridors, and three bases”. It will also explore a two-way opening-up system.<sup>114</sup>

### 2.2.3 Infrastructure and industrial foundation

**Infrastructure is a priority area in China-Africa cooperation, as it will provide important support for improving Africa's investment environment, strengthening Africa's industrial foundations, and promoting industrial upgrading.** Many African countries suffer from backward infrastructure with inadequate roads, railways, port facilities, power supply, clean water, and communications facilities.<sup>115</sup>

However, there was a huge funding gap for infrastructure construction of between US\$50 billion and US\$100 billion annually from 2014 to 2020. This problem has long hindered the industrialization of the African continent and affected the development of African industry chains.<sup>116</sup>

113 Hunan Daily. (2023). “More than 620 Chinese Enterprises Have Invested in the Construction of 25 Industrial Parks in Africa.” <https://baijiahao.baidu.com/s?id=1770144547888456115&wfr=spider&for=pc>

114 People's Daily Online. (2023). “The China-Egypt TEDA Suez Economic and Trade Cooperation Zone is accelerating its strategic upgrading.” <http://world.people.com.cn/n1/2023/0714/c1002-40035901.html>

115 The Silk Road Promotion Center for International Production Capacity Cooperation (2020): “The Belt and Road” and African Infrastructure Investment. [http://weixin.bricc.org.cn/Module\\_Think/ThinkPortal/ArticleDetail.aspx?aid=476](http://weixin.bricc.org.cn/Module_Think/ThinkPortal/ArticleDetail.aspx?aid=476)

116 AUDA-NEPAD.(2022). 2021-2022 PIDA Progress Report. <https://www.dakarfinancingsummit.org/publications/2021-2022-pida-progress-report>; ICA. (2020). Infrastructure Financing Trends in Africa: 2019-2020. <https://www.icafrica.org/en/>

The Chinese government has always encouraged Chinese enterprises and financial institutions to participate in the construction of infrastructure projects in Africa in various ways, which has made a key contribution to promoting connectivity in Africa.

**Table 5 Funding gap trend by sector in Africa**

Sector	Funding gap (billions of U.S. dollars) by year			
	2017	2018	2019	2020
Transportation	3-15	4-16	3-15	4-16
Water supply	45-55	43-53	46-56	49-59
Energy	8-23	5-20	4-19	6-21
Information and communications technology	2-5	0-3	Zero	Negative
Total	58-98	52-92	53-90	59-96

*Source: Infrastructure Financing Trends in Africa 2019-2020*

**Chinese enterprises are an important participant in infrastructure construction in Africa.** Since the establishment of the Forum on China-Africa Cooperation, Chinese enterprises have utilized various funds to help African countries add and upgrade more than 10,000 kilometers of railways, nearly 100,000 kilometers of roads, about 1,000 bridges, about 100 ports, 66,000 kilometers of power transmission and transformation lines, 120 million kilowatts of installed power capacity, 150,000 kilometers of communication backbone networks, and network services covering nearly 700 million user terminals.

Many large projects contracted by Chinese enterprises involve huge investment and have yielded outstanding results, such as the Addis Ababa-Djibouti Railway, Mombasa-Nairobi Standard Gauge Railway, and Mombasa Port, which are the flagship projects of the Belt and Road. Chinese enterprises continue to expand their infrastructure construction in Africa from building houses, roads, and bridges in the initial stage to building water conservancy and hydropower, petrochemicals, telecommunications, building materials, water supply, and agriculture.<sup>117</sup>

According to statistics from the Secretariat of China-Africa Economic and Trade Expo in 2022, transport, power engineering, and general construction were the three largest industries for new contracts signed with Chinese enterprises in Africa, accounting for a total of 59%.<sup>118</sup>

In addition, China guides enterprises to adopt various models such as BOT (build-operate-transfer, such as the Lekki Deep Sea Port in Nigeria by China Harbour Engineering Company Ltd.) and PPP (public-private partnership, such as the Souapiti Project in Guinea by China International Water & Electric Corp.) to move towards integration of investment, construction, and operation, and promote the sustainable development of infrastructure projects.<sup>119</sup>

<sup>117</sup> Yao Guimei. (2022) Production Capacity Cooperation Between China and Africa, p.39. China Social Sciences Press

<sup>118</sup> Secretariat of China-Africa Economic and Trade Expo. (2023). China-Africa Economic and Trade Relationship Report 2023. <https://www.vzkoo.com/document/202307079d8c5589fa0ece5f613f48b5.html>

<sup>119</sup> Central People's Government of the People's Republic of China. (2021). White Paper on China-Africa Cooperation in the New Era. [https://www.gov.cn/zhengce/2021-11/26/content\\_5653540.htm](https://www.gov.cn/zhengce/2021-11/26/content_5653540.htm)



### **Column 16 China Harbour Engineering Company Limited – Nigeria’s Lekki Port Project**

The Lekki Port Project in Nigeria is one of the projects listed in the achievements of the Second Belt and Road Forum for International Cooperation and one of the demonstration projects of China-France-Africa tripartite cooperation. It was carried out by China Harbour Engineering Company Limited on a BOT model and is operated by CMA CGM Group. The project started in June 2020, held a completion ceremony on October 31, 2022, and began commercial operations in April 2023.

As Nigeria’s first deep-water port, Lekki Port will eliminate bottlenecks in Lagos’ import and export trade and meet Nigeria’s need for rapid economic development. During the 45-year franchise period, it is expected to provide 200,000 direct or indirect jobs and generate profits of \$361 billion and overall tax revenue of \$201 billion for the Nigerian federal and Lagos state governments.

### **Column 17 China International Water & Electric Corp. - the Souapiti Water Conservancy Hub Project in Guinea**

In order to meet Guinea’s urgent need for economic development and prosperity, the Souapiti project has been developed and implemented as the “centenary dream” of the Guinean people.

The project was undertaken by China International Water & Electric Corp., a subsidiary of China Three Gorges Corporation. It was jointly developed by the Guinean government and China International Water & Electric Corp. on a PPP model. It started on April 1, 2016 and was completed and signed off on June 25, 2021. It is the largest water conservancy hub project in Guinea and the largest investment project under bilateral economic and trade cooperation between China and Guinea. The normal storage capacity is 6.3 billion cubic meters, the total installed capacity is 450MW, and the annual power generation is 2016GWH.

After all the units in Souapiti were put into operation, they were connected to the Kaleta substation through a 225kV line to provide domestic power to Guinea, doubling its hydroelectric generation capacity. It has completely solved the problem of the restricted domestic power supply, and meets the domestic electricity demand. In so doing, it has transformed Guinea from an electricity importer to an electricity exporter, delivering clean energy to West African countries such as Sierra Leone, Senegal, Guinea-Bissau, Liberia, and Mali through the West African interconnected power grid. This has effectively promoted the construction of the West African energy internet and reduced carbon emissions by approximately 1.49 million tons annually. In addition, a satisfactory water and electricity supply has promoted the further development of the mining industry and driven general industrial development. It has also greatly improved flood control capacity on the Konkoure River Basin, providing irrigation water in the dry season of the region, and supporting agricultural development.





**Figure 9** The Souapiti Water Conservancy Hub Project in Guinea

Source: Website of Power Construction Corporation of China

#### 2.2.4 Technology transfer and talent cultivation

Technology is one of the important bottlenecks that Africa needs to break through to develop its industry chains. Technology transfer exists in China-Africa cooperation in various forms such as technical assistance, knowledge transfer, and knowledge sharing, and is playing a positive role.<sup>120</sup>

**China's early technology transfer to Africa involved the government serving as the main body across multiple fields such as agriculture, industry, infrastructure, and healthcare.** The flagship projects, such as the construction of the Tanzania-Zambia Railway, included technical assistance as part of the Chinese government's strategic planning. With the implementation of the opening-up policy, China's strategic focus has shifted towards economic development, which has also led to changes in the dimension, scale, and depth of its technology transfer to Africa.<sup>121</sup>

**China and African countries have already built important platforms for technology transfer.** For example, a group of high-level joint laboratories have been built, and the China-Africa Joint Research Center and China-Africa Innovation Cooperation Center have been established to share experience and achievements in scientific and technological development. A total of 23 agricultural technology demonstration centers have also been established to provide financing and professional technical support.<sup>122</sup>

120 Munemo, J. (2013). "Examining Imports of Capital Goods from China as a Channel for Technology Transfer and Growth in Sub-Saharan Africa." *Journal of African Business*, 14(2), pp.106–116. <https://doi.org/10.1080/15228916.2013.804370>

121 Li Anshan. (2021). *Modern History of Africa*, p. 590. East China Normal University Press

122 Central People's Government of the People's Republic of China. (2021). White Paper on China-Africa Cooperation in the New Era. [https://www.gov.cn/zhengce/2021-11/26/content\\_5653540.htm](https://www.gov.cn/zhengce/2021-11/26/content_5653540.htm)

**China's investment in Africa has also driven technology transfer from Chinese enterprises to local markets.** Half of Chinese enterprises have launched new products or services in local markets, and one-third have introduced new technologies, producing significant technology spillover effects.<sup>123</sup>

**Table 6** 23 Agricultural technology demo centers as China's Africa aid projects

Country	Implemented by	Main areas of cooperation
Tanzania	Chongqing Zhongyi Seed Industry Co., Ltd.	Rice
Zambia	Jilin Provincial Grain Group	Corn, wheat
Togo	Jiangxi Huachang International Economic and Technological Co., Ltd.	Rice
Liberia	Yuan Long Ping High-Tech Agriculture Co., Ltd.	Rice
Benin	China Agricultural Development Group	Corn, vegetables
Congo-Brazzaville	Chinese Academy of Tropical Agricultural Sciences	Cassava
Ethiopia	Guangxi Bagui Agricultural Technology Co., Ltd.	Cash crops
Rwanda	Fujian Agriculture And Forestry University	Rice, silkworm
Uganda	Huaqiao Fenghuang Group Co., Ltd.	Aquaculture
Zimbabwe	Menoble Co., Ltd.	Agricultural machinery, irrigation
Sudan	Shandong Foreign Economic & Technical Cooperation Co., Ltd.	Corn, wheat
South Africa	China Agricultural Development Group	Aquaculture
Cameroon	Shaanxi Agricultural Reclamation Corporation	Rice
Malawi	Qingdao Ruichang Cotton Industry Co., Ltd.	Rice, corn, beef cattle, cotton
Mauritania	Heilongjiang Yanlin Manor Technology Co., Ltd.	Rice, corn, pig farming, biogas
Mauritania	Ningxia GOLDEN Fortune Sheep Industry Co., Ltd.	Dairy farming, forage planting, dairy processing
The Democratic Republic of the Congo (DRC)	ZTE Energy Company Limited	Rice, corn, vegetables
Equatorial Guinea	Jiangxi Ganliang Industrial Co., Ltd.	Cassava, sweet potatoes, bananas, vegetables
Madagascar	Hunan Academy of Agricultural Sciences	Rice
Burkina Faso	Cgcoc Group	Rice, irrigation
Central Africa	Shanxi International Economic & Technical Cooperation Co., Ltd.	Rice, corn, cassava, chicken farming
Burundi	Guangxi Academy of Agricultural Sciences	Rice, corn, vegetables
Angola	Xinjiang Beixin International Engineering & Construction Co., Ltd	Rice, corn, beef cattle

*Source: Dilemma and Solution of Sustainable Development of Agricultural Technology Demo Centers of China's Aid to Africa*

**Since successful technology transfer relies on talent cultivation, China has strongly supported the development of education in Africa.** Since 2012, China and Africa have implemented the “20+20 Cooperation Plan for Chinese and African Universities”,

<sup>123</sup> McKinsey & Company. (2017). Dragon and Lion Dance Together. [https://www.mckinsey.com.cn/wp-content/uploads/2017/06/ChinaAfrica\\_Cover-VF-highrez\\_CN-1.pdf](https://www.mckinsey.com.cn/wp-content/uploads/2017/06/ChinaAfrica_Cover-VF-highrez_CN-1.pdf)

establishing a platform for exchanges and cooperation between their universities. China has established a trust fund project with UNESCO, and as of November 2021, it has trained more than 10,000 teachers in African countries.

In addition, the Chinese government attaches great importance to cultivating African talent in science and technology, agricultural technology, and vocational education. As of November 2021, China had trained about 7,500 African agricultural students in China. Through the implementation of projects such as aiding 100 agricultural experts in Africa and aiding the African agricultural expert group, more than 50,000 local Africans have been trained.<sup>124</sup>

China has established 16 “Luban Workshops” in 14 African countries such as Djibouti, South Africa, and Kenya, to share China’s success in high-quality vocational education with Africa.<sup>125</sup>

China has also promoted the exchange and training of scientific and technological talent through the implementation of ANSO (Alliance of International Science Organizations) scholarship under the Belt and Road Initiative, the Chinese Government Scholarship, the International Outstanding Youth Program, the International Youth Innovation and Entrepreneurship Program and other projects.<sup>126</sup>

**Chinese companies, such as Huawei and Hisense, are also actively promoting talent localization in Africa.**

### Column 18 Hisense Group - Hisense South Africa Industrial Park

In 2013, Hisense and the China-Africa Fund jointly invested 41 million U.S. dollars to build Hisense South Africa Industrial Park, the largest household appliance manufacturing factory ever funded by Chinese investment in South Africa. Now, a complete industrial chain with complete functions and supporting facilities has been formed. At present, the park’s production capacity of televisions is about 950,000 units, and the production capacity of refrigerators is about 527,000 units. The products are exported to more than 20 African countries, and deliveries to the UK market began in April 2022.

Hisense Group employs a localized operation model. Currently, Hisense South Africa employs over 700 local workers, accounting for 90% of the total staff, and approximately 70% of the management positions here are held by local employees. Hisense focuses on empowering local employees and provides training to them through vocational counseling programs.

In 2019, Hisense South Africa systematically trained about 1,000 unemployed rural youth aged 18 to 25, and also established a Hisense South Africa Technology Research and Development Training Base in cooperation with Atlantis High School to help students master skills in electronic technology, software, and equipment control. The base has already trained a total of 1,400 people.

124 Central People’s Government of the People’s Republic of China. (2021). White Paper on China-Africa Cooperation in the New Era. [https://www.gov.cn/zhengce/2021-11/26/content\\_5653540.htm](https://www.gov.cn/zhengce/2021-11/26/content_5653540.htm)

125 Secretariat of China-Africa Economic and Trade Expo. (2023). China-Africa Economic and Trade Relationship Report 2023. <https://www.vzkoo.com/document/202307079d8c5589fa0ece5f613f48b5.html>

126 Central People’s Government of the People’s Republic of China. (2021). White Paper on China-Africa Cooperation in the New Era. [https://www.gov.cn/zhengce/2021-11/26/content\\_5653540.htm](https://www.gov.cn/zhengce/2021-11/26/content_5653540.htm)

## 2.2.5 Demand-and supply- driven development of industry chains<sup>127</sup>

China is currently building a new development paradigm with the domestic market as the mainstay, and the domestic market and overseas engagement reinforcing each other. This will promote positive interactions between China and Africa based on bilateral supply and demand, and further strengthen the integration and docking of African and Chinese industry chains.

China and Africa have a high degree of matching and good synergy on the supply and demand sides. The new development paradigm will fully stimulate the potential of the Chinese market, and African countries will benefit from China's diversified import trends and potential consumer markets.

Moreover, the transfer of China's valuable production capacity to Africa and the creation of differentiated competition opportunities for African enterprises in the Chinese market will promote the upgrading of Africa's products and industries, increase its supply capacity, and help African enterprises create high value-added products that bear strong and distinctive national features.<sup>128</sup>

Agriculture, as a leading industry in Africa's economic development and move to prosperity, is a key area for integrating the industry chains on both sides. In the current era of steady growth in consumer demand and accelerated upgrading of the consumption structure in China, there is an increasing demand for high-quality and diverse agricultural products. African agricultural products, being unique and of excellent quality, will meet the the demand for high-quality products in China. In order to optimize the supply structure and meet market demand, China has found it necessary to expand the import of high-quality agricultural products from Africa. In this context, China has always been committed to agricultural cooperation with Africa.

**On the demand side**, in recent years, China has continued to increase its imports of non-resource products from Africa. From 2001 to 2022, China's imports of agricultural products from Africa increased from 187 million U.S. dollars to 5.3 billion U.S. dollars, making China the second largest agricultural product export destination for Africa.

At the same time, China has established mechanisms such as the China-Africa Economic and Trade Expo – the non-resource product distribution and trading center – and new digital economy models like e-commerce platforms, “livestreaming with goods”, “live shopping online”, and electronic payments. All this will help accelerate the consumption of African agricultural products in the Chinese market, reduce trade costs, assist in the brand building of African products, and increase their added value.

**On the supply side**, in response to constraints such as a shortage of production and processing capacity of African agricultural products, China has taken a number of measures, such as building bases to attract new talent, strengthening the economic

127 Xiao Hao, Tang Bin & Xu Helian. (2023). Research on Increasing African Agricultural Products Imports and Opening “Green Lanes”. Social Science Academic Press (China); Tang Bin & Xiao Hao. (2022). “The current situation and prospects of African agricultural products exported to China under the new development pattern of ‘dual circulation’.” pp.98-99. China Investment (in Chinese and English) (Z1)

128 Central People's Government of the People's Republic of China. (2021). “Building a Closer Community with a Shared Future in China and Africa - Interpretation of the White Paper ‘China-Africa Cooperation in the New Era.’” [https://www.gov.cn/xinwen/2021-11/27/content\\_5653709.htm](https://www.gov.cn/xinwen/2021-11/27/content_5653709.htm); Department of Commerce of Guangdong Province. (2022). “China-Africa Cooperation: Creating New Opportunities Through the ‘Double Circulation’ Paradigm.” [http://com.gd.gov.cn/zcqqgfwp/zcqx/content/post\\_4125368.html](http://com.gd.gov.cn/zcqqgfwp/zcqx/content/post_4125368.html)

foundations, and helping local people learn how to increase production. This has significantly improved Africa's agricultural production efficiency and further improved its product quality.

**At the circulation end,** China has established “green lanes” for African agricultural products to be exported to China, accelerating quarantine procedures, and further expanding the range of products with zero tariff treatment for least developed countries that have established diplomatic relations with China.

China has also continued to improve logistics environments such as sea freight, air freight, and multimodal transport. These have gradually removed obstacles to smooth circulation.

Cooperation between China and Africa in the agricultural industry chain unleashes the potential of China's domestic demand market, meets China's demand for quality products, enriches product sources, and optimizes the import structure from Africa. It also grows Africa's agricultural production and processing capacity, increases its foreign exchange income, and increases its agricultural employment.

### **Column 19 Processing of Cote d'Ivoire cocoa and other agricultural products**

Cote d'Ivoire is a major source of the world's agricultural products such as cocoa, rubber, and cashew nuts, but most of them are exported unprocessed. In recent years, China CNDC Engineering has undertaken the construction of a cocoa processing plant and cocoa bean warehouse in Abidjan, with the Bank of China leading the financing consortium. Progress to date has been good. Hunan Construction Engineering Group, in collaboration with Jihua 3517 Rubber Products, Yueyang Guansheng Investment Development Company Limited, and Mainland Group, plans to invest in an agricultural product processing project in Cote d'Ivoire that includes multiple primary processing plants in Cote d'Ivoire and four refined processing plants in China's Hunan Province, with a total investment of 391 million U.S. dollars. Once operational, the annual production capacity is expected to reach 400,000 tons of rubber, 300,000 tons of palm oil, and 200,000 tons of seed cotton and other products.

## **2.2.6 Institutional innovation and practical application**

In order to address the constraints and bottleneck issues in China-Africa cooperation, the central government and local governments of China have taken a long-term approach. They have taken into account the reality in Africa and the complementarity between the two sides in areas such as resource endowment, economic structure, and industrial development. They are closely integrating high-quality resources and steadily improving top-level design and practical application with the goal of establishing long-term mechanisms for China-Africa economic and trade cooperation and exchanges.

**At the national level, under the framework of the Belt and Road Initiative and the Forum on China-Africa Cooperation,** the China-Africa Economic and Trade Expo has been established as a new mechanism for economic and trade cooperation, a new platform for implementing economic and trade initiatives, and a new window for local economic and trade cooperation.



**China has established the Pilot Zone for In-Depth China-Africa Economic and Trade Cooperation**, creating a hub for the distribution, trading, and processing of Africa's non-resource products. It has built the Belt and Road China-Africa Cooperation Industrial Parks to carry out industrial cooperation and promote trade innovation. It has also established a China-Africa Private Investment Promotion Platform to provide information consultation, project cooperation, park construction and operation, risk prevention and control, and logistics and supply chain services for Chinese private enterprises investing in Africa...

### Column 20 China-Africa Economic and Trade Expo (CAETE)

“The China-Africa Economic and Trade Expo is a new measure under the mechanism of the Forum on China-Africa Cooperation, and an important carrier for China and Africa to jointly build the Belt and Road. It is the first national and international platform for opening up to the outside world in Hunan Province. In setting up the expo, China has taken into account the cultural ties and economic and trade needs of Hunan Province and Africa. The Expo has been held three times since 2019, and has formed its own distinctive characteristics in terms of top-level design, theme setting, and organizational model.”<sup>129</sup>



**Figure 10** The Third China-Africa Economic and Trade Expo held on June 29, 2023 in Changsha, Hunan Province, China

Source: Xinhua News Agency

129 Xiao Hao, Tang Bin & Xu Helian. (2023). “The Construction Effectiveness and Prospects of the China-Africa Economic and Trade Expo.” *West Asia and Africa* (03), pp.74-93, pp.157-158.

At the local level, as a beacon for local cooperation with Africa, Hunan Province relies on three national-level open platforms – the China-Africa Economic and Trade Expo, the Pilot Zone for In-Depth China-Africa Economic and Trade Cooperation, and the China (Hunan) Pilot Free Trade Zone, to promote further breakthroughs in key systems and mechanisms under the framework of the China-Africa Cooperation Forum.

For example, Hunan Province has piloted a new type of barter trade, based on local currency settlement, to promote barter between China's industrial manufactured goods, daily consumer goods, and non-resource products from African countries. It is also exploring new models such as products for engineering, and products for investment, providing much-needed foreign exchange in Africa. To date it has supported enterprises in carrying out 12 “one-to-one” barter trade deals with four African countries.

Hunan has launched a pilot project for cross-border business with small currencies in Africa, opening up a closed loop of fund circulation between China and Africa, and has opened up spot foreign exchange settlement and sales services for six African countries.

It has established a distribution and trading center for African resource products, expanding the import of African agricultural products, and forming six import chains for African agricultural products – coffee, cashew nuts, macadamia nuts, cocoa, chili peppers, and sesame.

It also utilizes the pilot policy of Gaoqiao Grand Market procurement and trade in the Takahashi market to establish overseas warehouses in wholesaler gathering areas in African countries, and carries out secondary wholesaling through the model of exhibition in the front halls and warehousing in the backyard areas, thus promoting the entry of “Made in China” products into Africa.<sup>130</sup>

**At the same time, Zhejiang, Guangdong, Shandong, Jiangsu, Hubei, Fujian and other Chinese provinces are actively building local platforms based on their own industrial and regional characteristics, and have embarked on distinctive paths of cooperation with Africa.**

For example, as an important province in China's economic and trade cooperation with Africa, Zhejiang has actively explored the development of new digital platforms for China-Africa trade based on models such as “market procurement + trains/express ships/truck flights/multimodal transportation”, “market procurement + cross-border e-commerce”, “market procurement + bonded goods consolidation and transit”. It has released the country's first China-Africa trade index, and established the country's first China-Africa cross-border RMB settlement center.<sup>131</sup>

Shandong is actively exploring and promoting investment and trade facilitation, having built an “online + offline” product exhibition and selling platform, and has recognized two batches of 13 provincial-level overseas warehouses located in Africa.

<sup>130</sup> Compiled from the official website of the Hunan Provincial People's Government. <http://www.hunan.gov.cn/>

<sup>131</sup> Jinhua Municipal People's Government. (2023). “Our City's China-Africa Economic and Trade Cooperation Innovation Practice Won the Zhejiang Province Reform Breakthrough Silver Award.” [http://www.jinhua.gov.cn/art/2023/1/7/art\\_1229159979\\_60247365.html](http://www.jinhua.gov.cn/art/2023/1/7/art_1229159979_60247365.html)

Based on its strengths in scientific research, Hubei is promoting innovative technology cooperation with Africa. In February 2021, the China-Africa Innovation Cooperation Center led by Hubei Province was officially unveiled.<sup>132</sup>



**Figure 11** Hunan Gaoqiao Grand Market

Source: Website of Hunan Gaoqiao Grand Market



132 People's Daily Online. (2023). "Building a platform with complementary advantages - Jiangsu, Hunan, Hubei and other regions embark on a unique path of cooperation with Africa." [http://paper.people.com.cn/rmrbhwb/html/2023-08/16/content\\_26011544.htm](http://paper.people.com.cn/rmrbhwb/html/2023-08/16/content_26011544.htm)



## Chapter 3

# Chinese Enterprises' Investment in Africa from the Perspective of Industry Chains<sup>133</sup>

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### 3.1 Strengthening the foundations: Supporting infrastructure construction and supply of production elements

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#### 3.1.1 China Road and Bridge Corporation (CRBC): Building the “Great Artery” of east African public transport in Kenya

Until 2013, the transport infrastructure between Kenya's inland cities and its major port, Mombasa Port, was very poor. The vast majority of existing railways were meter gauge, and there were many problems such as aging equipment, disrepair, and poor management. Transport capacity fell well short of demand, which restricted Kenya's economic development.

Back in 2009, the Kenyan government had signed a memorandum of understanding and cooperation with CRBC for the Mombasa-Nairobi Railway project. In order to further improve Kenya's railway network, reduce transport costs, and promote trade and investment, during the 2015 Johannesburg Summit of the Forum on China-Africa Cooperation, China Communications Construction Company Limited (CCCC) signed a framework agreement with Kenya Railway Company for the Nariobi-Malaba Railway project in Kenya. The agreement stipulated that CRBC, a subsidiary of CCCC, would undertake the construction under the EPC (Engineering, Procurement, and Construction) model. In October 2016, the first phase of Nariobi-Malaba Railway held a project kickoff ceremony. The first passenger phase started in October 2019. The first freight phase was opened to traffic in December of the same year. The Naivasha Inland Container Depot (ICD) was completed in May 2020, becoming an important freight hub on the line.

The first phase of the Nariobi-Malaba line achieved integration with the Mombasa line, alleviating pressure on transport between Mombasa and the inland region, and improving

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<sup>133</sup> All information in the case studies comes from surveys of the enterprises or public reports.

the efficiency of goods circulation. It makes better use of the major hub function of intermodal land and water transport in Mombasa Port, and is also reinforcing the development potential of the northwest region of Kenya. In the next step, the Nairobi-Malaba Railway will also be connected with the railways in Uganda, and gradually connected with lines in Tanzania, Rwanda, Burundi, South Sudan and other countries, forming an “artery” of public transport in East Africa. This will increase the transport capacity of East African countries and reduce the cost of cross-border logistics. Increased mobility of people and goods will continue to support the comprehensive development of tourism and manufacturing industries along the route, and further promote the interconnection and integration process of the East African sub-region.



**Figure 12** Nairobi-Malaba Railway Phase I opened to traffic

Source: Xinhua News Agency

### 3.1.2 Power Construction Corporation of China (PCCC): Building the world’s largest tower solar thermal power plant in Morocco

Morocco is short of primary energy sources such as crude oil, natural gas, and coal, and historically its imports of such resources account for around 90% of its total consumption. However, Morocco has abundant solar energy resources, with annual sunshine ranging from 2,800 to 3,400 hours, ranking ninth in the world in terms of sunshine duration, and offering a total potential of 20GW of power generation.

In order to effectively unleash the potential of solar energy and reduce its dependence on energy imports, Morocco planned the construction of the world’s largest tower solar



thermal power plant – Noor III Power Plant. The project was undertaken by the SEPCOIII Electric Power Construction Co., Ltd., a subsidiary of PCCC, as an EPC general contractor. Construction began in May 2015.

The project was connected to the grid on August 15, 2018. On October 20 of the same year, reliability operation testing was successfully completed; and the owner's acceptance certificate was obtained and the plant entered service. The project employs tower-type photothermal power generation technologies and has a total installed capacity of 150MW. It meets both local Moroccan standards and multiple international standards. It was the first of such towers in the world to adopt a hybrid structure of concrete and steel, and is also the highest solar thermal power generation and collection tower in the world.

Since the Noor III Power Plant entered service, it has been able to transmit approximately 530 million kilowatt hours of clean electricity to the Moroccan power grid every year, improving consistent access to electricity for households and industries in Morocco, and further helping the country overcome its energy difficulties. The surplus electricity can also be transmitted to Europe, a complete turnaround from Morocco's long-term dependence on the import of electricity. This has laid solid foundations for Morocco's energy self-sufficiency and independent development. At the same time, the power plant will reduce annual carbon dioxide emissions by 230,000 tons, providing strong support for Morocco's green and sustainable development and eco-environmental protection.



**Figure 13** Noor III tower solar thermal power plant in Morocco

Source: SEPCOIII Electric Power Construction Co., Ltd.

### 3.1.3 Shenzhen Huawei: Providing hardware and software support for the ICT industry in Africa

Developing the digital economy is an important route to leapfrog development for Africa. However, due to weak communication infrastructure and a lack of digital talent, Africa's digital infrastructure lacks momentum, and the "digital divide" and systemic imbalance are serious issues. Since it began to work in the African market around 1998, Huawei Technologies has continued to develop and improve communication infrastructure in Africa, providing various elements required for the development of the ICT (Information and Communication Technology) industry in Africa, hardware support, and software guarantees.

In terms of hardware support, Huawei has built a large amount of telecommunications and network infrastructure in Africa, including GSM base stations, CDMA wireless phones, LTE networks, intelligent water meters, etc. It has built up to 70% of the IT backbone network for the African continent, developed about 30% of the 3G network and 70% of the 4G network, and built Africa's first 5G commercial network, providing high-speed, low-cost, and high-quality telecommunications services. This has boosted the use of internet products in Africa. In addition, Huawei has developed intelligent photovoltaic digital energy solutions to address the energy supply gap in Africa, providing an effective supplement to Africa's access to electricity and laying solid foundations for the development of Africa's ICT industry chains.

# 600+

Top universities in the African region

# 150,000+

ICT talent in Africa

In terms of software support, Huawei has cultivated high-quality ICT talent in Africa through various means. It has established Huawei ICT academies in over 600 top universities and ICT professional colleges in 28 African countries that have trained 150,000 African students in ICT. The academies provide cutting-edge ICT technology training in fields such as exchange, cloud computing, IP, IT, 5G, and AI. Huawei has also carried out the "Future Seed" project to select and train outstanding young talent in Africa and bring them into the local ICT industry. This has added vigor to ICT capabilities in the countries involved. Huawei is also filling the digital gap in Africa through technical training and knowledge sharing. This provides fundamental support to the productivity improvement and technological upgrading of the ICT industry in Africa, and has made a great contribution to the digital transformation of local industries.

### 3.1.4 Sinoma International Engineering Co., Ltd. (Nanjing): Providing technical support for Nigeria's cement industry

Although Nigeria is the largest economy in Africa, its cement industry formerly suffered from issues such as backward technology, high energy consumption, poor quality, and low production capacity, and it struggled to meet the huge demand of its domestic infrastructure market, resulting in over-dependence on imports. The world's largest integrator of cement technology equipment and engineering services, Sinoma International Engineering of Nanjing, has collaborated with Nigeria's Dangote Group to transform Nigeria's cement industry through the export of Chinese cement engineering technology, turning Nigeria from a major cement importer to an exporter.

Since 2008, Sinoma has helped Nigeria establish three cement production bases, Obajana, Ibes, and Boko, with a total annual production capacity of 32.3 million tons, achieving a triple growth, unleashing tremendous vitality in the cement manufacturing industry. Among the three, the Obajana 6,000T/D cement production line project, contracted by Sinoma in

2020 and constructed by a subsidiary in Suzhou, is the largest clinker cement production base in Sub-Saharan Africa.

In cement production, Sinoma provides a full technical equipment support service to break Nigeria's technological bottlenecks. The Obajana Cement Plant project employs a world-leading new dry cement production process in which the preheater and rotary kiln in the firing system use all-Sinoma technology and equipment, and are equipped with the best imported laboratory automatic sampling equipment in the industry, resulting in excellent quality and a wide product mix. The plant is energy-efficient and environmentally friendly, with electricity consumption and energy consumption indicators ranking among the best in the world.

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## **3.2 Building Strengths: Helping to transform plentiful resources into development strengths**

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### **3.2.1 China Nonferrous Metal Mining (Group) Co., Ltd. (CNMC): Developing copper and cobalt smelting and supporting industry clusters in Zambia**

Zambia is a major copper producer, but its local infrastructure was outdated and its energy supply insufficient. The copper mining industry lacked vigor, and there was a need to develop the country's copper resources. In an international tender in 1998, CNMC acquired the equity in Zambia's Chambishi Copper Mine (which had been mothballed for ten years). Later, it established China Nonferrous Industrial Park, invested in the construction of Zambia China Economic and Trade Cooperation Zone, took over Luanshya Copper Company, which had been closed for six months, resumed production at the Baruba mine, invested 368 million US dollars in the construction of the Muliachi wet process project, and focused on building copper and cobalt smelting and support industrial clusters in Zambia.

CNMC has relied on its own technology and funds to upgrade Zambia's copper and cobalt smelting industry, develop the non-ferrous metal mining and smelting industry cluster, and integrate the mining, beneficiation, and smelting industry chain around the Chambishi copper mine. The Chambishi Copper Smelter has adopted cobalt matte magnetic separation technology for the first time in the world to increase the cobalt yield.

The Muliachi Hydrometallurgical Plant has the largest heap leaching system in Africa, and a world-class cathodic stripping unit and ultrasonic oil removal equipment, making it the world's largest heating leaching plant. The smelting plant has comprehensively upgraded its production control system, carried out digital and automated transformation, and more than doubled labor productivity, while making its mining operations safer and more sophisticated.

The Chambishi Hydrometallurgical Plant utilizes local low-grade tailings to achieve resource recycling.

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CNMC has also invested 190 million U.S. dollars in infrastructure construction to build the Zambia-China Economic and Trade Cooperation Zone. Using this zone as a platform, it has expanded the scale and cluster effect, building a platform for China's non-ferrous industry and related industries to cluster and "go global". It has also made Zambia more attractive to investment and increased the success rate of Chinese enterprises investing in Zambia. Currently, more than 50 enterprises have located in the zone, and the actual investment completed by enterprises in the zone is almost 1.9 billion U.S. dollars. Their cumulative sales revenues have surpassed 14 billion U.S. dollars, creating almost 8,000 stable jobs for local people.

### 3.2.2 Shandong Weiqiao Venture Co., Ltd.: Stable development of bauxite in Guinea

Guinea has abundant, high-quality, and easily exploitable bauxite resources. But issues such as outdated mining equipment, lack of infrastructure, and political instability hampered the stable and sustainable development of Guinea's bauxite industry. The Ebola pandemic caused temporary stagnation.

In 2014, Winning Consortium Simandou (WCS), a consortium consisting of four companies – the Winning International Group of Singapore, Yantai Port Group Co., Ltd. of China, UMS of Guinea, and China Hongqiao Group Limited under Shandong Weiqiao Venture Co., Ltd. – entered Guinea to engage in bauxite development.

Relying on its technological and other strengths, WCS has significantly increased Guinea's bauxite production. In 2015 output was only 1 million tons; in 2018 it exceeded 42 million tons, turning Guinea very quickly into the world's largest exporter of bauxite.

Accelerating the pace of innovation, WCS developed the world's most advanced low energy aluminum smelting technology and improved the processing capacity of high-end packaging aluminum materials, replacing imports and turning Guinea into an exporter to more than ten countries.

WCS has cooperated with universities and made new breakthroughs in high-end aluminum material manufacturing and application technology, and gradually built an industrial chain from mining to processing that ranges from thermoelectric, mining, alumina, and raw aluminum to high-precision aluminum plates and strips, and other new materials.

It has built a multimodal bauxite transport line through the construction of infrastructure such as ports and railways, and has boldly connected river ports to offshore anchorages, achieving rapid carriage of the ores to the sea.

In addition, WCS has placed great importance on green and sustainable development, and implemented a low-consumption, low-emission, and environmentally friendly development model in accordance with Guinean laws and mining standards.

### 3.2.3 Soremi SA: The first modern mine in Congo-Brazzaville

Congo-Brazzaville has abundant resources in a broad spectrum of minerals, and good geological conditions for exploitation. However, due to backward local infrastructure and a lack of advanced geological skills, its mining industry was lagging badly.



In December 2013, China National Gold Group successfully acquired Soremi SA with a 65% shareholding. Over the past decade, the group has gradually transformed Soremi into the first modern mine in Congo-Brazzaville integrating mining, beneficiation, and metallurgy. It is currently the only mine in Congo-Brazzaville to have achieved industrial production.

During mining, the Soremi SA geological exploration team has drilled almost 27,000 meters, excavated 49,000 cubic meters of trench, and conducted geophysical exploration with the IP intermediate gradient method in an area of 36 square meters and geochemical soil measurement of over 1,255 square kilometers. They have analyzed the geology and ore formation process in the mining area, providing a theoretical basis and practical reference for geological exploration work in the area.

In mineral smelting, Soremi SA collaborated for several years with multiple scientific and technological research units on a series of projects such as ore beneficiation and smelting experiments, process flow research, and comparative demonstration of construction plans. Ultimately it decided to adopt complex long process zinc beneficiation and smelting, which involves raw ore leaching, material liquid segmented impurity removal, extraction, electrowinning, and melting casting. It then started engineering construction, organized debugging, and launched production.

In October 2016, Soremi SA successfully turned out the first copper plate, and in December 2019 the first zinc plate in Congo-Brazzaville. In 2021, the first batch of self-produced zinc ingots rolled off the production line. Zinc beneficiation and smelting are now fully connected.

Working from scratch, Soremi SA has created both copper and zinc production in Congo-Brazzaville.

### 3.2.4 PetroChina: Achieving leapfrog development in Chad's oil industry

Chad is rich in oil resources, but backward in its general industry and its oil and gas equipment. Before PetroChina's project in Chad, all domestic refined oil products were imported. In 2007, PetroChina entered Chad to assist in its oil and gas development.

In Chad, PetroChina has continued to innovate to shape four technological strengths: geological exploration, oil and gas field development, engineering construction, and crude oil exports. It has helped Chad establish a complete and independent petroleum industry chain running through upstream, midstream, and downstream, with oil fields, refining, and pipelines.

In oil field development, PetroChina achieved a series of major breakthroughs and discoveries, adapting its approach based on the geological conditions in Chad, carrying out three-dimensional exploration, accelerating risk analysis, and strengthening rolling exploration. The output of Chad's oil fields has grown at a rate of one million tons per year, achieving a historic leap from 1 million tons to 6 million tons.

In refining, PetroChina successfully built Chad's first refinery in the space of five years, helping Chad achieve self-sufficiency in refined oil products.

In sales of refined oil products, PetroChina overcame challenges such as poor social support, long inland transport routes, and huge engineering challenges. It succeeded in bringing into service as scheduled a total of 520 kilometers of oil pipelines from oil fields to refineries, and crude oil export channels. In addition to ensuring domestic supply in Chad, it also helped the country export oil products to countries such as Cameroon and the Central African Republic.

Since 2011, Chad has identified over 100 million tons of new recoverable oil reserves, and refineries have produced and sold 5.3 million tons of petroleum products, enabling Chad to advance its industrialization.

The PetroChina projects in Chad cover such areas as exploration and development, pipelines, oil refining and warehousing, industrial parks, engineering construction, and engineering technology services. They have transformed Chad's oil industry from small and weak to large and strong, and shifted from rapid development to high-quality development.

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### **3.3 Strengthening weak links: Supplementing key links and building domestic deep processing capacity**

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#### **3.3.1 Wynca: Helping with production and supply of agricultural chemicals in Ghana**

Agriculture has been the economic pillar of Ghana, but due to extensive management, its agricultural production faces enormous challenges such as low and unstable yield per unit. Its yields of cassava, corn, and rice are all lower than the average for the entire continent. The use of pesticides is a crucial aspect of improving the agricultural management, but Ghana's domestic enterprises have very weak capabilities in manufacturing pesticides, which cannot meet the development needs of its agriculture and has seriously affected the development of Ghana's agriculture.

In 2009, Wynca acquired and controlled a local company in Ghana, establishing WYNCA Sunshine Agric Products & Trading Co., (Ghana) Ltd., and began to build and expand its own agricultural and chemical brands in the African market. In 2012, Wynca invested 500 million yuan to build a production base with an annual output of 30,000 tons of glyphosate water agent, making it the earliest glyphosate product production base in Ghana.

At present, Wynca has formed a complete industrial chain system from the production to sales of glyphosate agricultural products, with glyphosate products accounting for over 35% of the Ghana market. In addition, it has a product group with over 50 varieties of herbicides, insecticides, fungicides, and other products developing simultaneously.

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Since 2015, it has held over 100 farmer training sessions every year, and conducted efficacy trials on product use technology, plant protection awareness, and pest control formulas to support the promotion and use of pesticides. Over 250,000 farmers have been trained in pesticide use.

From 2017 to 2018, Wynca launched a high-yield corn field solution in Ghana, providing full industry chain services from corn seeds to special fertilizers, herbicides, insecticides, fungicides, and harvests, significantly improving the local crop yield, and increasing farmers' incomes by 450 to 810 Cedi/mu (approximately \$578 to \$1040 per hectare). In 2018, it also introduced drone flight prevention and plant protection services in Ghana.

As China's largest pesticide supplier in Ghana and West Africa, Wynca is committed to the healthy development of African agriculture. The company is building a complete pesticide production and supply system and promoting scientific use of pesticides in African agriculture, thereby supplementing a key link in African agricultural development, and improving crop yields and farmers' incomes.

### 3.3.2 Yuan's Seed Company Limited: Localization of hybrid rice in Madagascar

Rice is the main crop in Madagascar, but due to factors such as seed quality and planting technology, rice production has never been able to fully meet the food needs of its people.

Yuan's Seed signed a Strategic Cooperation Agreement with the Malaysian government on the localization of hybrid rice. Through systematic construction of infrastructure and support facilities, a complete hybrid rice industry system has been localized and established, avoiding high seed import prices, modernizing local low agriculture, and helping the country achieve food security.

To ensure the purity of its seeds and a high germination rate, Yuan's Seed has adopted a process of drying, removing awning, wind screening, specific gravity selection, coating, and packaging.

In planting, it has implemented full mechanization of agricultural technology and agronomy, and constructed supporting water source diversion projects, flood discharge and drainage projects, farmland facilities, production management facilities, and agricultural equipment warehouses. It has formulated and strictly applied the Technical Regulations for Hybrid Rice Planting in Madagascar to ensure two-season planting and high and stable yields, and to increase the mechanization and scale of grain production.

These efforts have been supplemented by rapidly cultivating hybrid rice. The transformation of scientific research achievements into commercial products means that the product quickly flows into the market through local channels.

To enable local farmers to afford seeds, Yuan's Seed has introduced partnerships between agricultural enterprises, microcredit companies, and farmers or between companies, governments, and farmers. Teaching people how to fish is better than just giving them fish. Yuan's Seed focuses on long-term industrial and technical training of local people. It has collaborated with the National Hybrid Rice Engineering Research Center of China, and utilized the platform of the African sub-center to train a large number of frontline agricultural technicians.

Through the efforts of Yuan's Seed over the past two decades in Madagascar, Chinese hybrid rice is now grown over more than 50,000 hectares, with an average yield of around 7.5 tons per hectare. Madagascar has the largest planting area and highest yield of hybrid rice in Africa. It is also the first African country to create a full industry chain of hybrid rice breeding, seed production, planting, processing, and sales. This has effectively addressed the country's food security issue.



**Figure 14** A new version of Madagascar paper currency carrying a hybrid rice design

Source: *The Paper*

### 3.3.3 Zhejiang Mina Textile Co., Ltd.: Pioneering the printing and dyeing industry in Ethiopia

The textile industry is one of the economic pillars in Ethiopia. It is key to Ethiopia's industrialization. However, due to backward infrastructure and a lack of technology and professional skills, the textile industry chain was poorly developed, and in a relatively marginal position in global textile and clothing industry chains.

In 2011, Mina Textile acquired Alabamenzi Spinning and Weaving Factory. This was the largest textile enterprise in Ethiopia, but it was on the brink of bankruptcy. In 2014, Mina invested in the construction of Ethiopia's first printing and dyeing enterprise, the Alabamenzi Printing and Dyeing Plant. Its workshops cover an area of 36,000 square meters and have five production lines that integrate knitting, weaving, printing, and dyeing. The project began operations in October 2016.

Mina Textile's investment has made a great contribution to the construction and upgrading of Ethiopia's textile industry chain. It utilizes advanced machinery and equipment from Italy, Japan, and South Korea, which leads to higher production efficiency and better product quality. The daily output of fabric can reach 200,000 meters.

Mina Textile has also constructed a wastewater treatment plant to advanced international standards, with a daily capacity of 2,500 tons. The green upgrading of the industrial chain has been warmly welcomed by the local government.

The company has also promoted the localization of labor and created a large number of jobs by focusing on employee training, with a team of Chinese technicians teaching skills and doing “one-on-one” mentoring. It is actively expanding in the international market, and finished product is sold to neighboring countries like Kenya, Sudan, as well as to the United States, Europe and other regions. This has increased Ethiopia’s participation and competitiveness in the international textile industry chain.

In addition, Mina Textile is currently planning to expand into the clothing industry to form a complete industry chain of textiles, dyeing and finishing, and clothing manufacturing.

### 3.3.4 Honghua Group: Land oil drilling rig made in Egypt

Egypt has abundant oil and gas resources, but formerly the oil and gas industry had little capacity for local equipment manufacturing, outdated drilling equipment, insufficient production capacity, and poor workplace safety. Therefore it needed better equipment to achieve greater efficiency.

In 2007, Honghua Group of Dongfang Electric (DEC) and three subsidiaries of Egyptian General Petroleum Corporation (EGPC) jointly invested in establishing EPHH in the Suez Suhanna Industrial Zone, Egypt.

After the startup, Honghua Group of Dongfang Electric mainly provided equipment support for Egypt’s oil and gas development through sales and business connections with major customers in the regional market. DEC sold 12 complete land drilling rigs to a total value of approximately \$200 million.

In 2022, in support of Egypt’s development strategy of growing domestic industrial capacity, increasing employment opportunities, and stimulating economic growth, EPHH signed a cooperation agreement with EDC for the local manufacturing of seven 2000HP land drilling rigs in the coming five years. The two companies from China and Egypt have since worked together to continuously improve and innovate the production process.

In 2023, EPHH successfully manufactured and delivered the first rig to EDC. This gave Egypt independent manufacturing capacity in oil and gas equipment, raised the overall level of the country’s petroleum machinery industry, and promoted long-term stable development.

During the process, the Chinese side has cultivated a body of localized technical talent, enabling Egypt to further expand its independent drilling capability and improve its efficiency.

### 3.3.5 Lebunna: Taking Ethiopian coffee from seed to fruit to cup

Ethiopia is the birthplace of coffee. But there are few roasting factories and the processing technology is outdated. Ethiopia exports a large volume of coffee beans, while its own coffee industry lacks deep processing capacity and distribution channels. The shortcomings in the coffee industry chain have resulted in extremely low export earnings,

preventing Ethiopia from fully leveraging its agricultural resources and achieving rapid economic development.

With the opening of the Ethiopian market and the exponential growth of China's coffee consumption market, Leburnna was founded in Ethiopia in 2015. Over the past eight years, it has made substantial investments in the coffee industry chain in Ethiopia, covering variety research, coffee processing, international trade, and marketing. It is gradually building a full coffee industry chain from seed to cup.

Leburnna is committed to ensuring its long-term development through an upstream layout. Ethiopia's raw bean resources are basically monopolized by merchants from Europe, America, Japan, and South Korea, and Leburnna has responded to this by taking a different approach and building upstream processing plants in the mountains.

To date, Leburnna has built six upstream plants as coffee fruit collection and initial processing bases. Each of these plants harvests an area of approximately 200 hectares.

As research is an important driver of productivity, Leburnna has teamed up with African research institutes such as the Ethiopian Commodity Exchange to develop new coffee varieties.

In addition, Leburnna is also investing effort in processing and sales. Unlike its peers, who purchase raw beans from abroad but do their deep processing and packaging for sales in China, Leburnna has chosen to do deep processing in Ethiopia. With a roasting factory in the local area, Leburnna produces roast beans, instant coffee, and other coffee products and then air transports them back to China in finished form, thus achieving a large profit margin.

### 3.3.6 Jielong Holdings: Limited cotton releases unlimited possibilities in Tanzania

Tanzania's cotton has long been mainly used for export. Issues such as low levels of industrial processing, incomplete industrial chains, and insufficient upstream and downstream cooperation have caused the local cotton industry to stagnate at the low end, resulting in low added value of exported products, and poor foreign exchange earning ability.

In response to the the Belt and Road Initiative, Jiangsu Jielong Agricultural Development Group invested in the construction of Jielong Holding (Tanzania) Ltd. in western Tanzania, which is engaged in processing and sales of daily products such as vegetable oil, feedstuffs, and soap. It is also the largest cotton seed oil production enterprise in Africa and the only fine cottonseed production unit in Tanzania.

The arrival of Jielong has greatly expanded and extended the local cotton industry chain, gradually extending it to a multi-directional and smooth upstream, midstream, and downstream chain that focuses on textiles, industrial supplies, oil production, and feedstuffs.

On the upstream side, Jielong collaborates with local farmers to implement contract agriculture and purchase cotton according to government requirements. Jielong also plans to directly rent land locally for cotton cultivation, establishing a complete chain of cotton seed, planting, and oil production.

In midstream, Jielong capitalizes on its technological strengths to conduct deep processing, producing various cotton-derived products such as cottonseed oil, cottonseed meal, cotton linter, livestock feed, cotton husks, and soap.

In the downstream, Jielong promotes its products to the world, selling to more than 10 countries in East Africa, South Africa, and South Korea, as well as more than 20 provinces and cities in China.

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## **3.4 Filling in the blank: Assisting development of emerging industries and economic diversification**

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### **3.4.1 Guangde International Group, LDA: Helping with Angola's economic diversification**

Angola's economic complexity is one of the lowest in the world, with oil and gas accounting for about 90% of its total exports. Diversifying its economy has been a pressing issue.

Guangde was one of the earliest large-scale private Chinese enterprises to invest in the country, and currently ranks among the top Chinese private enterprises in Angola in terms of investment scale and strength. In 2007, in response to the changing economic situation in Angola and its trend towards diversified economic development, Guangde invested in the construction of the 128-hectare Guangde Industrial Park in Cacuo City.





**Figure 15** Guangde Industrial Park in Angola

*Source: Website of Guangde*

For many years, Guangde has been committed to building Guangde Industrial Park into a demonstration park for China-Angola cooperation. While attracting investment, it has also built a complete industrial chain through a series of self-invested factories. For example, in response to the demand for furniture in the African market, it has invested in a production supply chain that integrates wood processing, sponge production, and mattress processing and production.

At present the park has factories producing cement products, colored steel tiles, mattresses, sponge and foam, sofas, processed wood products, solid wood furniture, cartons, new energy batteries, and other products. It therefore includes energy, household goods, agriculture and other industrial chains, forming a comprehensive park with industrial uses as the mainstay and civil uses as the auxiliary.

The new energy storage battery factory is an important project put into operation by Guangde in 2019. With modern production equipment, a professional technical team, and an advanced experimental testing center, the factory is able to produce batteries of comparable quality to internationally renowned brands such as TUDOR, BOSCH, and VARTA, and was the largest battery manufacturer in Africa when it opened.

In the construction of industrial parks, Guangde focuses on three features: first, it uses a large amount of local raw materials in production and only imports key materials, effectively controlling production costs and lead times. Second, it attaches great importance to the allocation of local employee positions and promotes the localization of labor. Third, it works to protect the environment, and has constructed recycling and treatment production lines for the battery factory, which recycle and reuse waste batteries locally to reduce pollution to soil and groundwater.

Guangde is rooted in Angola and is actively promoting the construction of an inclusive and sustainable industrial park. Its work to attract diversified investments as well as its own investment has created a large number of jobs in Angola, and had great significance in promoting industrialization and economic structural transformation.

### 3.4.2 Jushi Egypt: Helping Egypt's fiberglass industry grow strong from scratch

Egypt has strengths in glass fiber manufacturing, such as abundant raw materials, an advantageous geographical location, and low labor costs. However, it was faced with such problems as a lack of core industry technology, outdated production equipment, and insufficient funds, which restricted the development of its fiberglass industry chain.

In August 2018, Jushi's production base in Egypt (Jushi Egypt) was completed and began operations. It was the largest Chinese industrial manufacturing investment in Egypt at that time, with the most advanced technology and equipment, and the shortest construction lead time.

Jushi's investment has effectively promoted the agglomeration and development of the local fiberglass upstream and downstream industry chains. Upstream, Jushi Egypt has made full use of the rich mineral resources of kaolin, limestone, quartz sand, and other minerals in Egypt to develop 13 local raw material suppliers. Local procurement has reached a value of 200 million Egyptian pounds (approximately U.S. \$11 million) per year.

Downstream, it has driven the development of the fiberglass textile, pipeline, bathroom, transport, wind power and other deep processing fiberglass industries, and promoted the construction of the entire fiberglass industry chain in Africa.

In production, Jushi has brought a complete line of glass fiber production technology with independent intellectual property rights into Egypt, creating highly automated and intelligent production lines and strengthening local manufacturing capacity. For example, in 2021, Jushi Egypt carried out a cold repair renovation on its first production line of fiberglass tank furnace wire drawing, raising the line's annual production capacity from 80,000 to 120,000 tons.

While creating 2,500 job opportunities for the local area and driving substantial local employment, Jushi has built a large pool of talent in the fiberglass industry in Egypt. As of 2021, the localization rate of middle-level management positions in Jushi Egypt had reached 76%, and the localization rate of frontline positions had reached 98%. It also sends employees to China for training, studying technology, and acquiring advanced management experience.

Currently, Jushi Egypt's fiberglass products have a market share of over 20% in the international fiberglass market, and one out of every three wind turbine blades in the world uses Jushi Egypt's fiberglass.

The construction and operation of Jushi Egypt has tapped into the potential of the Egyptian fiberglass market, making Egypt the only fiberglass manufacturing country in the entire African region and the fourth largest fiberglass producer and trader in the world. It now occupies an important position in the international industrial chain.



### 3.4.3 Kilimall: One of the favorite shopping platforms for African consumers

Africa has a large population and a strong demand, but the vast majority of its retail trade is still conducted in rural markets. People in Africa have many pain points in shopping, such as high prices, limited choices, and unsatisfactory conditions.

Kilimall, a cross-border e-commerce platform in Africa, was established in 2014. It was the first Chinese company to enter the African internet and e-commerce industry, and has become one of the favorite shopping platforms for African consumers.

Kilimall has established its own overseas warehousing and advanced logistics warehousing management system, called KillExpress, which provides cross-border logistics, overseas warehouse services, overseas final delivery, and IT system services, addressing problems such as customs clearance and remote logistics.

It has launched LipaPay as a payment settlement platform to meet the online payment needs of African consumers and provide installment payment services, improving the convenience and flexibility of payment.

It has built a community small store service system, providing self-pickup services and commercial distribution business, coexisting and integrating with the local communities.

It has developed a closed-loop after-sales system, providing services such as returns and exchanges, maintenance, and installation, and building sustainable development businesses.

It has also established a KILL marketing brand system, integrating systems such as website traffic resources, social media on site, and short videos, successfully incubating multiple brands.

In terms of supply chain construction, it has focused on concrete painstaking details to build a low-cost, efficient, and friendly business ecosystem.

It has increased its business of importing from Africa and the service capacity for Africa, and has eased bottlenecks and pain points of China-Africa trade in both directions.

It has built an e-commerce platform for B2C (business to customer), B2B (business-to-business), imports and exports, and created e-commerce infrastructure such as logistics services, payment services, and community service stores. It has thereby provided African consumers with a better shopping experience, and has promoted the popularization and development of e-commerce in Africa. It has achieved genuine connectivity between online and offline, supply and demand ends, and domestic and foreign markets.

### 3.4.4 Herocean Group: Building Africa's product supply chains

Lacking localized suppliers, distributors and critical trade logistics networks, Africa struggles to achieve supply chain efficiency and innovation, and to deal with other problems.

Herocean Group is a China-Africa supply chain platform that integrates international logistics, African products, and information technology.

It has focused on Africa as the market benchmark, and worked to include international supply chain services, African product platforms and industrial parks, and Internet O2O (online to offline) information technology in its scope of business. It has worked to fully integrate international and African company resources and promoted the construction of S2B2C (supplier to business to customer) product supply chains in Africa.

Herocean is integrating three core products—routes, warehousing, and inter-city distribution.

Integration of routes means improving and optimizing the operational efficiency of flight routes between China and Africa.

Integration of warehousing means establishing bonded warehouses and storage yards in key African ports and landlocked countries.

Integration of urban distribution means expanding inter-city distribution by combining the group's physical network in Africa.

It is committed to weaving a China-Africa trade and logistics network throughout Africa, from main to branch lines, point to point, and door to door, providing guarantees for the orderly and sustainable operation of African supply and industry chains.

Herocean has also introduced OBOR, an e-commerce platform of new information technologies, which was independently developed to focus on the existing business segments of its African market.

OBOR collaborates with high-quality enterprises in various fields, such as building materials and fast-selling consumer goods, to help establish stable and long-term collaborative relationships between upstream and downstream enterprises in the industry chains in Africa.

Herocean has also established a mobile client online ordering model to assist Africans in integrating more efficient production, warehousing, and logistics. It continues to optimize secure and reliable third-party payment platforms and help Africa to develop secure and trustworthy mechanisms for transactions.

### **3.4.5 Chongqing Haifu Medical Technology Co., Ltd.: Leapfrog development of surgical technology in Africa**

The medical methods in Africa are relatively backward, and 80% of the main surgeries are major-traumas that will come with open wounds. Less than 10% of doctors have mastered endoscopic treatment techniques. The lack of high-quality blood sources, and the side effects of and slow recovery from traditional major trauma surgeries are the pain points for African medicine.

In order to promote progress in surgical procedures in Africa and meet the quality treatment needs of patients, Haifu has introduced medical education and medical services mainly based on taking original innovative HIFU technology to Africa, thereby helping the continent achieve a historic leap in medical and surgical technology from major trauma surgeries to non-invasive ones.

Haifu has provided comprehensive solutions for HIFU centers in Africa, covering treatment equipment, clinical technology, engineering services, talent cultivation, academic exchanges, and network support, and has promoted the all-round spread of non-invasive surgical technology in Africa from multiple perspectives.

In 2015, with funding from the Ministry of Science and Technology of China, Haifu established its first HIFU center in South Africa. In 2016 and 2021 Haifu established HIFU centers in Egypt and Nigeria. As of June 2023, the three HIFU centers together have assisted nearly 2,000 patients.

Haifu has provided digital healthcare through the internet, ensuring the smooth operation of HIFU centers in Africa. It has taken the lead in establishing a global remote non-invasive medical service platform, connecting in real time to African HIFU centers, providing remote consultation and guidance for difficult surgeries, and thereby ensuring the best results for non-invasive treatment plans for African patients.

Haifu supports the exchange of talent in the field of minimally invasive and non-invasive medicine in African countries, and has spared no effort to train HIFU doctors for non-invasive treatment in Africa. Funded by the Ministry of Science and Technology of China, it has been holding HIFU training courses for countries along the Belt and Road and other developing countries for the past eight years, and has trained 149 senior clinical experts from 26 African countries.

With funding from the Chongqing Municipal Education Commission, Haifu has held two Silk Road training courses and trained more than 70 clinical experts from 18 well-known hospitals in Africa. Haifu headquarters in Chongqing is also authorized by the National Health Commission of China as a training base for ultrasound tumor treatment. It has trained more than 2,000 foreign doctors and nurses in China, including over 300 clinical experts from Africa.

### **3.4.6 XAG: Empowering modern agriculture in Africa with smart agricultural technology**

Agriculture is the economic foundation and provides the basic livelihood in most African countries, but it faces multiple challenges such as insufficient infrastructure and lack of technology. The low productivity of agriculture has led to a serious problem of food security in African countries. Taking on the mission of increasing agricultural production efficiency, XAG vigorously promotes smart agricultural technology in Africa, empowering modern agriculture in Africa with technology.

XAG has been exporting drones to Africa since 2019, assisting African farmers in pest control and becoming a high-tech mainstay in combating the grassland noctuid moth.

In 2022, in response to the Poverty Reduction and Benefiting Farmers Project and the Digital Innovation Project proposed at the 8th Ministerial Conference of the Forum on China-Africa Cooperation, XAG signed a strategic cooperation agreement with the China-Africa Development Fund to explore a new model combining investment, loans, assistance, and donations, encouraging Africa to adopt China's smart agricultural technology and equipment, and supporting the digital transformation and upgrading of the entire agricultural industry chain in Africa.

XAG is empowering African agriculture by constructing a complete software and hardware product matrix and closed-loop of data, and is helping to address issues such as skilled labor shortages, extensive management, and environmental pollution in agricultural production.

XAG is also playing a positive role in helping Africa to improve its agricultural production efficiency and increase food production. In the Mozambique Agricultural Park project, XAG has utilized unmanned aerial vehicles to efficiently spray pesticides through technologies such as atomization and path design. While saving labor and improving production efficiency, it has also balanced economic and environmental benefits by significantly reducing pesticide usage .

In upgrading the sugar industry chain in South Africa, XAG has used innovative drone technology to improve plant protection and foliar fertilizer operations. It has improved the yield and quality of South African sugarcane, and increased the sugar yield by about 10%.



**Figure 16** Application of XAG P series drones in sugarcane work in South Africa

*Source: XAG*

XAG has already provided smart agriculture technology services to multiple countries in Africa, including Ghana, Mozambique, Zambia, Rwanda, South Africa, and Uganda.

In the future, XAG will continue to popularize smart agriculture technologies in Africa, bring in China's advanced technology and equipment for digital smart agricultural production, integrate software and hardware, and promote agricultural modernization in Africa.



# Chapter 4

## Conclusions and Recommendations

### 4.1 Four ideas for the transformation of Africa's industry chains

#### 4.1.1 Providing guidance and strengthening the foundations: A proactive government offers guidance and accelerates the delivery of key elements

African countries lack the necessary infrastructure and are weak in factors such as talent, funding, and technology, which seriously hampers their ability to capitalize on their resource advantages.<sup>134</sup>

African governments need to be proactive in industrial development and look to build on their own strengths. They must build the necessary infrastructure and improve the business environment to attract domestic and foreign enterprises to enter industries that capitalize on their strengths.<sup>135</sup>

#### The following can serve as important guidelines:

- ① Talent. Expand opportunities for secondary, higher, and vocational education, and prioritize quality and relevance, including exposure to new technologies.<sup>136</sup>
- ② Funding. Reform fundamental financial systems to expand financing channels. Encourage the healthy entry and exit of competitive banking systems with strong regulatory and supervisory support. Establish a legal and contractual environment to fully protect the rights of creditors and borrowers. Provide institutional and incentive frameworks to promote the long-term development of the capital market and institutional investors.<sup>137</sup>
- ③ Technology. Embrace the fourth technological revolution, strengthen technology introduction and cooperation, strengthen digital infrastructure, reinforce skill training and

134 Harrison, A., Lin, J. Y., & Xu, L. C. (2014). "Explaining Africa's (Dis)advantage." *World Development* (63), pp.59–77. <https://doi.org/10.1016/j.worlddev.2013.10.011>

135 Justin Yifu Lin. (2018). "China's Rise and Opportunity for Structural Transformation in Africa." *Journal of African Economics* (27), Issue suppl\_1, pp. i15–i28. <https://doi.org/10.1093/jae/ejy012>

136 ACET. (2021). *African Transformation Report 2021: Integrating to Transform*. <https://acetforafrica.org/research-and-analysis/reports-studies/atr/african-transformation-report-2021/>

137 Making Finance Work For Africa. (2022). "Recent Trends in Access to Finance in Africa." <https://www.mfw4a.org/blog/recent-trends-access-finance-africa>



investment, and forge public-private R&D partnerships to promote factor investment. Take steps to incentivize innovation and accelerate technological innovation, such as formulating national innovation strategies for specific sectors, stimulating domestic innovation, and enabling an innovation environment.<sup>138</sup>

④ **Market.** Implement market-oriented industrial policies and fully leverage the role of the private sector in transforming industry chains in an “effective market” environment. Improve infrastructure and the business environment, advance political reform to maintain political stability, and simplify regulations. Strengthen macroeconomic governance, avoid high inflation and high debt, and maintain favorable exchange rates.

Emphasize social governance, maintain regional stability and reduce conflict. Effective planning and construction of public service systems will help provide support for public infrastructure such as roads, electricity, and water supply.<sup>139</sup>

### 4.1.2 Stabilize and strengthen industry chains: Consolidate the competitiveness of strong industries and add value to exported products

African countries have strengths in the export of agricultural products and minerals. However, external shocks such as the COVID-19 pandemic have damaged the relationship between the African and global economies. The decline in global demand for African goods has led to falling production and low exports. This exposes the serious weakness in Africa's industry chains and the potential risk of chain breakages caused by external shocks. Africa must therefore leverage its strengths and stabilize and strengthen its industry chains.<sup>140</sup>

**To stabilize industry chains, Africa can increase exports of its advantageous products by creating new international markets, establishing regional value chains, improving transport infrastructure, and expanding digital transformation.** Africa can use trade fairs, expos, and other exhibitions to showcase its unique and advantageous products and increase the demand for African products in the global market. It should take advantage of the opportunities created by the African Continental Free Trade Area to increase local production and Intra-African trade, so as to mitigate the impact of global logistics disruptions. At the same time, Africa should strive to improve infrastructure, build closer connections with global industry chains, and reduce the risk of chain disruptions. Digital transformation will also help bypass current obstacles in infrastructure or logistics deficits.<sup>141</sup>

A concerted effort is required to build on comparative strengths and make export products more competitive. Many complex factors influence the competitiveness of agricultural products. These include management institutions, infrastructure, the business environment,

138 Boston Consulting Group. (2021). “Unleashing Innovation in Africa.” <https://www.bcg.com/publications/2021/innovation-in-africa>

139 ACET. (2014). 2014 African Transformation Report Growth with Depth. <https://acetforafrica.org/research-and-analysis/reports-studies/atr/african-transformation-report-2014/>

140 ACET. (2022). Transforming and Building Resilient Economies in Africa: Resetting priorities for the policy agenda in the post-COVID-19 era. <https://acetforafrica.org/research-and-analysis/reports-studies/reports/transforming-and-building-resilient-economies-in-africa-resetting-priorities-for-the-policy-agenda-in-the-post-covid-19-era/>

141 World Economic Forum. (2021). “Study Finds Ways to Boost Intra-African Trade and Build Resilience.” <https://www.weforum.org/press/2021/01/study-finds-ways-to-boost-intra-african-trade-and-build-resilience/>; Beker Mckenzie. (2021). “Creating a Disruption-proof Supply Chain in Africa.” <https://www.bakermckenzie.com/en/newsroom/2021/10/supply-chain-in-africa>; Boston Consulting Group. (2021). “Transforming Africa's Food Systems from the Demand Side.” <https://www.bcg.com/publications/2021/transforming-africa-food-systems-from-demand-side>.



human capital, market access, land markets, risk management, innovation, application of technology, and the sustainability of natural resources.<sup>142</sup>

**Standardizing product quality, enforcing strict standards, and building up product brands based on product characteristics and consumer needs are also important ways to create competitive products, establish product reputation, and maximize trade revenues.** Currently, there is still great room for improvement in product quality certification, aligning product standards, and the use of brand marketing strategies in African countries.<sup>143</sup>

### Column 21 African Organization for Standardization (ARSO)

“Established in 1977, ARSO is an intergovernmental organization established by the Organization of African Unity (replaced by the African Union in 2002) and the UN Economic Commission for Africa. Its headquarters are located in Nairobi, the capital of Kenya. Its purpose is to coordinate African standards and conformity assessment procedures to reduce technological trade barriers, thereby promoting Intra-Africa and international trade, industrialization, and sustainable development in Africa. As of December 2022, ARSO has 42 member states and has developed nearly 3,000 African standards.”<sup>144</sup>

#### 4.1.3 Complement and extend industry chains: Supplementing important product categories and extending upstream and downstream industries

Africa has long participated in the division of labor in global industry chains through the forward participation of agricultural products, energy and mineral exports, and is an important producer of initial input. But Africa rarely participates in the intermediate steps required to produce the final products, which forces African producers to import key intermediate inputs from other continents.<sup>145</sup> This model does not help Africa to develop the necessary production capacity, become more competitive, upgrade its industry chains, or increase its added value. It is therefore essential that African countries succeed in complementing and extending their chains.

The first step is to supplement missing links and important product categories in industry chains. Africa’s highest demand for imported intermediate goods concerns machinery and mechanical equipment, plastics and their products, and steel products. These are the main inputs for the automotive and other manufacturing sectors. Investment incentives can be used to attract foreign direct investment to such sectors, while building their connections with local enterprises. This can become an important channel for technology transfer and knowledge spillover of foreign direct investment, and for accelerating the construction of African industrial systems and product categories.<sup>146</sup> It is equally important to attract

142 Jambor, A., Babu, S. (2016). “Strategies for Increasing Competitiveness of Agriculture.” *Competitiveness of Global Agriculture*. Springer, Cham. [https://doi.org/10.1007/978-3-319-44876-3\\_8](https://doi.org/10.1007/978-3-319-44876-3_8)

143 Getachew Mengistie Alemu. (2019). “Strategic Use of Branding for Competitiveness: The rationale for branding and marketing agricultural products of African countries.” <https://www.scienceopen.com/hosted-document?doi=10.13169/jfairtrade.1.2.0006>

144 HNTBT Net. (2022). “Outline of African Regional Organization for Standardization (ARSO).” <https://www.hntbt.org.cn/pc/newsDetails/47194/>

145 OECD. (2022). *Africa’s Development Dynamics 2022: Regional value chains for a sustainable recovery*. <https://www.oecd-ilibrary.org/sites/e1de4174-en/index.html?itemId=/content/component/e1de4174-en>

146 UNCTAD. (2022). *Rethinking the Foundations of Export Diversification in Africa: The catalytic role of business and financial services*. [https://unctad.org/system/files/official-document/aldcafrica2022-summary\\_en.pdf](https://unctad.org/system/files/official-document/aldcafrica2022-summary_en.pdf)

investors in agricultural enterprises and grow local small and medium-sized enterprises, so as to provide support for agricultural development such as fertilizers and agricultural machinery.<sup>147</sup>

The second step is to actively extend current industry chains upstream and downstream, and increase participation in the division of labor of industry chains, especially in Africa's agriculture, energy, and mining industries. Upstream, the demand for modern agriculture can support the production of inputs such as agricultural tools. Downstream, traditional exports of agricultural products such as coffee, cocoa, and cotton can help develop the agricultural product processing industry. Exploration know-how and deep processing capabilities in the mining industry are a priority, alongside connections with other economic sectors.<sup>148</sup>

#### 4.1.4 Form and expand industry chains: Fully leveraging comparative advantages and building new chains in an open environment

There are two solutions to the common problems of single economic structure and fragile industry chain connections in African countries. The first is to expand the industry chain, based on its own comparative advantages. Emerging industries such as labor-intensive manufacturing and the digital economy present important opportunities. The second is to form a complete and smooth industry chain based on core products in an open environment, and the construction of regional industry chains should merit special attention.

New structural economics holds that countries should develop industries with comparative advantages based on their factor endowments, ultimately achieving endowment-driven industrial transformation and upgrading.<sup>149</sup>

Africa has abundant labor resources and the world's youngest labor force, with great potential for developing labor-intensive manufacturing industries. However, a significant feature of African economies in the past was that economic growth in services, agriculture, and industry was led by capital-intensive industries such as mineral and oil and gas extraction, rather than labor-intensive industries, which were more in line with Africa's comparative advantages. This caused countries to miss out on the potential of manufacturing to increase total factor productivity and create employment opportunities in the whole economy. It has resulted in poor productivity, a regression in growth and transformation, and limited structural economic reform.

Governments should therefore give priority to building a strategic labor-intensive manufacturing base based on their countries' comparative advantages.<sup>150</sup>

147 ACET. (2017). African Transformation Report 2017: Agriculture powering Africa's economic transformation. <https://acetforafrica.org/research-and-analysis/reports-studies/atr/african-transformation-report-2017/>

148 ACET. (2014). African Transformation Report Growth with Depth. <https://acetforafrica.org/research-and-analysis/reports-studies/atr/african-transformation-report-2014/>; ACET. (2017). African Transformation Report 2017: Agriculture powering Africa's economic transformation. <https://acetforafrica.org/research-and-analysis/reports-studies/atr/african-transformation-report-2017/>

149 Wang Yong, Fan Zhongchen & Li Xinze. (2022). "Endowment Structure, R&D Innovation, and Industrial Upgrading." China's Industrial Economy. pp.5-23.

150 ACET. (2022). "Transforming and Building Resilient Economies in Africa: Resetting priorities for the policy agenda in the post-COVID-19 era." <https://acetforafrica.org/research-and-analysis/reports-studies/reports/transforming-and-building-resilient-economies-in-africa-resetting-priorities-for-the-policy-agenda-in-the-post-covid-19-era/>

## Column 22 Investment in manufacturing in Ethiopia

Ethiopia provides a good reference: investment in infrastructure and manufacturing is seen as the key to Ethiopia's past rapid economic growth. Textiles and clothing manufacturing, which has developed based on potential comparative advantages, has gradually gained a foothold and demonstrated potential in creating export earnings. In the 10-year long-term development plan for Ethiopia (2021-2030) launched in 2021, developing manufacturing industries with competitive advantages such as food and clothing was once again emphasized.<sup>151</sup>

At the same time, the arrival of the digital revolution has led to a growing shift in global manufacturing towards capital-intensive industries, and opportunities for developing labor-intensive manufacturing are falling under threat. Due to the demographic dividend and accelerating urbanization process, Africa has enormous potential for developing the digital economy. African countries should therefore recognize the threat and actively embrace the digital economy to achieve leapfrog development.<sup>152</sup>

## Column 23 Development of the digital economy in Africa

In the past, Africa's digital economy went through a development process from focusing on information and communication technology connectivity, to strengthening the market-oriented application of digital technology, and gradually expanding to emphasizing the digital transformation of society as a whole. At present, the main problems facing Africa include a serious "digital divide", systemic imbalances in development, and insufficient development momentum at the base. African countries need to vigorously build infrastructure for emerging digital technology and innovative digital economy development models, and promote emerging industries such as online education, telemedicine, digital payment, and e-commerce.<sup>153</sup>

While striving to expand new industry chains and reinforce its position in global industry chains, Africa also needs to better participate in or form its own regional industry chains. There are a total of 94 industry chains in the African continent with comparative advantages that show great potential for joint contribution of at least 5 countries in different regions.<sup>154</sup> The five major regions of Africa also have their own characteristic industry chains, such as agricultural product processing in Eastern and Western Africa, timber in Central Africa, and automobiles and energy in Southern and Northern Africa.<sup>155</sup>

Due to factors such as poor infrastructure connectivity and tariff and non-tariff barriers, the construction of value chains in the African region is currently inadequate. The African Continental Free Trade Area provides new opportunities for intra-regional industry chain cooperation based on specific comparative advantages.

151 EU. (2021). Ethiopia: Ten Years Development Plan 2021-2030 by the Planning and Development Commission of the Federal Democratic Republic of Ethiopia (2020). <https://capacity4dev.europa.eu/library/ethiopia-ten-years-development-plan-2021-2030-planning-and-development-commission-federal-democratic-republic-ethiopia-2020>

152 The World Bank. (2023). Labor Productivity Growth and Industrialization in Africa. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099854202062391425/idu02125ef1d01d4904496091ca0f8683b886cf6>; Supporting Economic Transformation. (2017). Economic Transformation: A new approach to inclusive growth. [https://set.odi.org/wp-content/uploads/2017/03/Economic-Transformation-New-Approach-SET-Briefing-Paper\\_FINAL.pdf](https://set.odi.org/wp-content/uploads/2017/03/Economic-Transformation-New-Approach-SET-Briefing-Paper_FINAL.pdf)

153 China-Africa Economic & Trade Research Institute. (2023). Africa Digital Economy Development Index and China-Africa Digital Economy Cooperation Report 2023

154 Africa Union. (2022). Made by Africa: Creating value through integration. <https://au.int/en/documents/20221123/made-africa-creating-value-through-integration>

155 AUC/OECD. (2022). Africa's Development Dynamics 2022: Regional value chains for a sustainable recovery, OECD Publishing, Paris, [https://www.oecd-ilibrary.org/development/africa-s-development-dynamics-2022\\_2e3b97fd-en](https://www.oecd-ilibrary.org/development/africa-s-development-dynamics-2022_2e3b97fd-en)

The steady growth in Africa's regional markets will benefit each production unit through economies of scale and competitive effects, forming a dense regional and continental production and supply network, extending the forward and backward connections, and generating internal consumption spillovers of the industry chain.<sup>156</sup>

African countries should unite and accelerate the construction of the African Continental Free Trade Area, relying on its economies of scale and complementarity to promote more output, processing, and high-value-added product exports in the region, in order to penetrate global industry chains and promote industrial upgrading.<sup>157</sup>

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## 4.2 Need for China-Africa cooperation from the perspective of industry chains

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China is the largest developing country, while Africa is the continent with the highest concentration of developing countries. China's development and growing strength depends on Africa, and Africa's future prosperity and stability depends on China.<sup>158</sup>

The China-Africa partnership of the 21st century serves as a model of both South-South cooperation and independent development. Both partners are keeping pace with the times, exploring opportunities for innovation, and working all out in search of new points of convergence and growth.

Africa is actively exploring open and independent development, and China's reform and opening-up has entered a new era. China-Africa cooperation on industry chains represents a strategic docking of the development goals of both sides in the new era, and a means to leverage their relative strengths and achieve leapfrog development.

**Their development goals are consistent, and supported by cooperation on industry chains.**

In China, a strategy was proposed in 2017 to building China into a great modern socialist country in two steps by the middle of this century.<sup>159</sup>

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156 UNECA. (2016). Macroeconomic Policy And Structural Transformation of African Economies. <https://archives.au.int/bitstream/handle/123456789/1410/Macroeconomic%20structural%20of%20Africa-E.pdf>

157 World Bank Group. (2021). "Industrialization in Sub-Saharan Africa: Seizing opportunities in global value chains." <https://www.worldbank.org/en/region/afr/publication/industrialization-in-subsaharan-africa-seizing-opportunities-in-global-value-chains>

158 Xinhua Net. (2018). "Over the Past Five Years, Xi Jinping Has Expressed China-Africa Cooperation as Follows." [http://www.xinhuanet.com/politics/xxjxs/2018-08/31/c\\_1123357803.htm](http://www.xinhuanet.com/politics/xxjxs/2018-08/31/c_1123357803.htm)

159 Guangming Daily. (2021). "Overall Well-off, Common Prosperity and Chinese Path to modernization." [http://www.qstheory.cn/qshyjx/2021-12/15/c\\_1128164311.htm](http://www.qstheory.cn/qshyjx/2021-12/15/c_1128164311.htm)

In Africa, the 2015 African Union Summit adopted Agenda 2063, aiming to establish an integrated, prosperous, and peaceful Africa. Therefore, achieving inclusive and sustainable development is a common goal for both China and Africa.

In China, the new double development dynamic sees the domestic economy as the mainstay and supported by international engagement, with each working to support the other. China must “go global”, given its huge production capacity and construction capacity formed in the pro-cycle. It is of strategic importance to accelerate the cultivation of industry chains in China and Africa that reflect China’s domestic economic restructuring, transformation and upgrading. This will also boost China’s economic radiation capacity and influence on countries and regions involved in the Belt and Road Initiative, and facilitate the docking of development strategies and industrial complementarity with countries at different stages of development.<sup>160</sup>

Africa has long been marginalized in global industry chains, achieving low product added value. Although the demand for economic and social development in Africa is strong, it is constrained by political, economic and many other factors.

China-Africa cooperation on industry chains can effectively exploit Africa’s resources and turn them into competitive advantages, solve the infrastructure and factor bottlenecks that hinder its development, and promote integrated development. This cooperation will also drive industrialization and economic diversification in Africa, strengthen its independent development capacity, add to its resilience, and ultimately help it to better integrate into global industry chains.<sup>161</sup>

China and Africa both have unique strengths that can be leveraged by cooperation on industry chains. China has industrial technologies suitable for the practical needs of Africa, as well as experience in developing labor-intensive manufacturing and in developing special economic zones. It also has a huge consumer market.

Africa is rich in natural resources, with a wide variety of specialty agricultural products such as coffee, cocoa, and cashew nuts. It ranks first in the world in the reserves and grades of various mineral resources such as copper, iron, and uranium. It currently has a population of 1.3 billion, within which 33% are young people aged between 10 and 24. Africa must capitalize on the opportunities this demographic dividend offers, including its consumption potential.

China and Africa can cooperate in traditional fields of cooperation such as agricultural products and processing, labor-intensive manufacturing, industrial park construction and construction industry. They should focus on docking and chain cooperation in industries such as mid- to high-end technology manufacturing, medical and pharmaceutical sectors, and the digital economy.<sup>162</sup>

160 News Network. (2017). “Grasp Opportunities Brought about by the Belt and Road Initiative for Win-Win Cooperation.” <http://theory.people.com.cn/n1/2017/0919/c40531-29543417.html>

161 Yang Baorong. (2018). *The African Open and Independent Development and the China-Africa Production Cooperation under the Belt and Road Initiative*, pp. 279-290, Economic&Management Publishing House

162 Yao Guimei. (2022). *Production Capacity Cooperation between China and Africa*, China Social Sciences Press

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## 4.3 Recommendations to governments on China-Africa cooperation

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Accelerating China-Africa cooperation on industry chains cannot be achieved by enterprises alone. Governments in both China and Africa can strengthen communication and create a favorable environment for investment, growth, and development. Overall, the “Five Connectivity” remains an important lever to reinforce cooperation:

### 4.3.1 Strengthening policy coordination: Improve top-level design and formulate specific plans

The governments should combine China’s two-step strategy, the African Union’s Agenda 2063 and the development strategies of African countries. They should capitalize on the Belt and Road Initiative and the Development Corridor. They should use existing frameworks—the Ten Major China-Africa Cooperation Plans, Eight Major Initiatives, and Nine Programs, and China-Africa Cooperation Vision 2035 – to improve the top-level design and specific implementation plans for medium and long-term cooperation on industry chains. And they should work to build a closer China-Africa community of shared future.

Individual governments of African countries should clarify their goals for cooperation with China on industry chains based on their specific national conditions, and formulate clear cooperation strategies and action plans accordingly.

### 4.3.2 Strengthening cooperation on trade facilitation: Breaking tariff and non-tariff barriers

China and Africa should strengthen cooperation in agricultural product and food inspection and quarantine, pilot mutual recognition of technical standards, simplify customs clearance procedures, and strengthen logistics channels.

Africa should focus on trade facilitation to encourage African enterprises to export more value-added products and services to China. China should expand its import of non-commodity products from Africa.

### 4.3.3 Strengthening financial integration: Providing development support through financial cooperation

For the Chinese side: firstly, provide diversified financial support to African industries; secondly, expand direct currency swaps with African countries, promote direct RMB settlement for trade and investment, and actively explore the development of financial instruments through capital markets to maintain the stability of African commodity prices and exchange rates.

For the African side: Develop relevant sovereign loan policies.

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#### 4.3.4 Strengthening connectivity of infrastructure and facilities: Building traditional and digital infrastructure to consolidate the foundations of industrial development

China and Africa should coordinate infrastructure regulations, standards, and mutual recognition of conformity assessment. They should expand cooperation in traditional transport and construction and strengthen strategic alignment and cooperation on sustainable and digital infrastructure.

#### 4.3.5 Strengthening people-to-people ties: Providing technical training to allow people to increase their own skills

Both sides should strengthen cultural and technological cooperation. China should provide applied technical training for Africa. The African side should focus on improving the technical skills of the labor force, create opportunities for the transfer of professional skills from Chinese workers, and reinforce its independent development capabilities.

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## 4.4 Recommendations for promoting the participation of Chinese and African enterprises

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### 4.4.1 Promotion policy from Africa

They should formulate rational national industrial policies and play the guiding role in industrial development, commit to improving the business environment, encourage foreign investment, and provide reasonable support for local industries including incentives for key technologies, talent, and skills.

They should also develop targeted policies to attract and retain investment in specific industries, and focus on providing follow-up services and maintaining a good investment environment.

They should link foreign direct investment projects with local upstream and downstream enterprises to strengthen local capacity.

They should focus on regional strategies, promote regional integration and cross-border cooperation to leverage their advantages in scale and scope, reduce logistics costs, and make investment attractive.

They should establish a talent team focused on investment to better attract foreign investment, and carry out various investment promotion activities.

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## 4.4.2 Promotion policy from China

In terms of institutional arrangements, the Chinese government should sign or upgrade double-tax treaties with African countries, improve institutional arrangements for cooperation, hold regular bilateral meetings.

In terms of financial support, the Chinese government should expand financing channels and use channels such as the China-Africa Development Fund and the China-Africa Fund for Industrial Capacity Cooperation to support Chinese enterprises' investment in Africa. It should actively encourage financial institutions to establish branches in Africa, improve their positioning in Africa, develop more innovative investment and insurance products, and strengthen financial support.

In terms of supporting measures, the Chinese government should provide guidelines for Chinese enterprises by regularly updating and releasing country guidelines for foreign investment cooperation. It should support the Chinese and overseas chambers of commerce in their efforts to raise their service levels, build platforms, bring together enterprises, and promote internal and external linkages and exchanges.

## 4.4.3 Practices of Chinese and African enterprises

While taking associated risks into account, Chinese enterprises should actively invest in Africa, taking into consideration the local resource endowments, development needs, and willingness to cooperate. They should make full use of advantageous policy and financial support from both sides.

Chinese enterprises should choose different investment methods based on their own international experience. Those that are making initial cross-border investments can invest through equity participation or joint ventures. Those with greater overseas experience can consider investing in Africa through sole proprietorship. Drawing the platform for China-Africa private investment promotion, they can also actively explore new market entry strategies.

In infrastructure construction, Chinese enterprises should explore suitable cooperation models based on actual local conditions, such as BOT (build-operate-transfer), BOO (building, owning, and operation), and PPP (public-private partnership).

Chinese enterprises should develop and implement localized business strategies, fully utilize local talent, and focus on training and technology transfer for local employees in their projects. They should achieve localized supply of raw materials through cooperation with local enterprises, implement local marketing and promotion, and cultivate local brands through channels such as e-commerce platforms.

African enterprises are encouraged to expand business in China and Chinese enterprises should actively fulfill corporate social responsibility, strictly abide by local labor laws, and protect the legitimate rights and interests of local workers. They should strengthen the construction of green industry chains, be conscious of environmental protection, and actively participate in the construction of local infrastructure and hardware.

## Column 24 China-Africa Private Investment Promotion Platform

“China-Africa Private Investment Promotion Platform” was proposed at the 8th Ministerial Conference of the Forum on China-Africa Cooperation, and was included in the Forum on China-Africa Cooperation – Dakar Action Plan (2022-2024) to encourage Chinese enterprises to invest in Africa. This platform is run by the All-China Federation of Industry and Commerce (ACFIC)<sup>163</sup>, the third announced by China to promote China-Africa economic and trade investment after the China-Africa Development Fund (CADFund) and the China-Africa Fund for Industrial Cooperation (CAFIC). It encourages Chinese private enterprises to carry out economic and trade investment cooperation with Africa. CABC is fully engaged in this endeavor. Through this platform, CABC will guide Chinese private enterprises to understand Africa’s needs, do due diligence, strengthen other related investment, improve post-investment management, and promote a number of high-quality, people-centered and sustainable investment projects for Africa.

Currently, the first phase of a 100 million RMB fund has been registered under the Platform, with more than 100 million RMB investment deployed. At the same time, Xiamen University was commissioned to conduct research on how financial instruments could help the Chinese (private) enterprises in Africa, through financial tools such as cross-border asset securitization.

## 4.5 Recommendations for encouraging multilateral participation

Multilateralism is an important thinking as well as a guiding principle for China- Africa cooperation. In the future, China-Africa cooperation can be more open, initiate trilateral or multilateral projects with third-party countries, the United Nations and its specialized agencies, and different international or regional organizations that meet Africa’s needs, aspirations, and development agendas. This will form an open, multi-dimensional, and inclusive approach for cooperation with Africa, and realize inclusive cooperation on industry chains.

### 4.5.1 Strengthening strategy communication

We should encourage multilateral efforts to strengthen strategic dialogue and policy communication, and establish stable and sustainable industry chain cooperation mechanisms. Regular high-level meetings should be held, and policy coordination and communication strengthened, to reach the maximum common denominator in cooperation.

<sup>163</sup> ACFIC. (2023). Meeting of Member Unites of China-Africa Private Investment Promotion Platform was held in Beijing.

### 4.5.2 Focusing on key areas

We should carry out pragmatic trilateral or multilateral cooperation projects in key areas such as new infrastructure, oil and gas resources, industrialization, food security, medicine and health care, climate change, and education, and build innovative models of cooperation in full industry chains in key areas.

### 4.5.3 Starting dialogue on security

We should establish a security policy dialogue and risk management mechanism, effectively manage conflicts, properly handle differences, and ensure the stable development of multilateral industry chain cooperation. We should strengthen risk prevention and control for factors involving uncertainty, such as policy changes and regional security, and we should develop emergency plans to jointly prevent these risks.



# Appendix

## 25 Chinese-funded industrial parks in Africa as registered by the Ministry of Commerce of the People's Republic of China<sup>164</sup>

Cooperation park or zone	Domestic implementation unit	Country (Region)
China-Egypt TEDA Suez Economic and Trade Cooperation Zone	China-Egypt TEDA Investment Co., Ltd.	Egypt
Ethiopia Eastern Industrial Park	Jiangsu Yongyuan Investment Co., Ltd.	Ethiopia
Huajian Ethiopia Light Industry City	Dongguan Huabao Shoes Co., Ltd.	Ethiopia
Huajin Mining Economic and Trade Zone	Fujian Xinqiao Trade Co., Ltd.	Zimbabwe
Abidjan Trade and Logistics Park	Fujian Goodwill Building Materials Industry Development Co., Ltd.	Cote d'Ivoire
China-Kenya (East Africa) Economic and Trade Cooperation Zone	China Wuyi Co., Ltd.	Kenya
Mauritius Jinfei Economic and Trade Cooperation Zone	Shanxi Jinfei Investment Co., Ltd.	Mauritius
China-Mauritius (Hongdong) Marine Economic Cooperation Park	Hongdong Fishery Co., Ltd.	Mauritania
Mozambique Beira Economic and Trade Cooperation Zone	Anhui Foreign Economic Construction (Group) Co., Ltd.	Mozambique
Hisense South Africa Cape Town Atlantis Industrial Park	Hisense Middle East - Africa Holdings Co., Ltd.	South Africa
Lekki Free Trade Zone	China-Africa Lekki Investment Ltd.	Nigeria
Yuemei (Nigeria) Textile Industrial Park	Yuemei Group Co., Ltd.	Nigeria
Nigeria-Guangdong Economic and Trade Cooperation Zone	Guangdong Xinguang International Group China Africa Investment Co., Ltd.	Nigeria
The Belt and Road Industrial Park (Nigeria)	Guangdong Zhongni Industrial Co., Ltd.	Nigeria
Guoji Industrial and Trade Park	Henan Guoji Industry Group Co., Ltd.	Sierra Leone
China-Sudan Agricultural Development Zone	China Shandong International Economic & Technical Cooperation Corp	Sudan
Jiangsu-Shinyanga Agricultural Industrial Park	JOC Technical Engineering Co., Ltd.	Tanzania
Victoria Nyanza Resource Comprehensive Utilization Industrial Park	Henan Yukuang Kaiyuan Mining Co., Ltd.	Tanzania
China-Uganda Overseas Economic and Trade Cooperation Zone	Sichuan Youhao Hengyuan Agricultural Development Co., Ltd.	Uganda
Africa (Uganda) Shandong Industrial Park	Changyi Deming IM&EXPORT Co., Ltd.	Uganda

164 Secretariat of China-Africa Economic and Trade Expo. (2021). China-Africa Economic and Trade Relationship Report 2021. <https://www.caitec.org.cn/upfiles/file/2021/10/2021111715583001.pdf>

Cooperation park or zone	Domestic implementation unit	Country (Region)
China (Guangzhou) - Uganda International Capacity Cooperation Industrial Park	Guangzhou Zhongdian Property Investment Co., Ltd.	Uganda
Zambia China Economic and Trade Cooperation Zone	China Nonferrous Metal Mining (Group) Co., Ltd	Zambia
China National Building Material Zambia Industrial Park	Sinoma Cement Co., Ltd.	Zambia
Zambia Agricultural Product Processing Cooperation Park	Qingdao Ruichang Tech-Industry Co., Ltd.	Zambia
Chad Sunshine Soluxe International Industrial Park	Soluxe International Business Co., Ltd.	Chad



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# Corporate Information

## Companies shown in Case Studies

1	China Road and Bridge Corporation
2	Power Construction Corporation of China
3	Huawei Technologies Co., Ltd.
4	Sinoma International Engineering Co., Ltd. (Nanjing)
5	China Nonferrous Metal Mining (Group) Co., Ltd.
6	Shandong Weiqiao Venture Co., Ltd.
7	Soremi SA
8	China National Petroleum Corporation (PetroChina)
9	Wynca Group
10	Yuan's Seed Company Limited
11	Zhejiang Mina Textile Co., Ltd.
12	Honghua Group
13	Lebunna
14	Jielong Holding (Tanzania) Ltd.
15	Guangde International Group
16	Jushi Egypt
17	Kilimall
18	Zhejiang Herocean Pan-African Network Co., Ltd.
19	Chongqing Haifu Medical Technology Co., Ltd.
20	XAG Co., Ltd.

## Companies shown in columns

21	Keda Industrial Group Co., Ltd
22	Wangkang Holding Group Co., Ltd.
23	Guangzhou Minchuang Investment Partnership (Limited Partnership)
24	Guangdong Bordar Technology Co., Ltd.
25	Hainan Airlines Holding Co., Ltd.
26	China CNDC Engineering Co., Ltd.
27	Bank of China Limited
28	Hunan Construction Engineering Group Co., Limited
29	Jihua 3517 Rubber Products Co., Ltd.
30	Yueyang Guansheng Investment Development Company Limited
31	Mainland Group
32	Tiantang Group
33	China International Water & Electric Corp.
34	Three Gorges CWE Co., Ltd.
35	Hisense Group Co., Ltd.

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**Companies shown in the body of the report**


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36	Huajian Group
37	China-Egypt TEDA Investment Co., Ltd.
38	China-Africa Lekki Investment Ltd.
39	iangsu Yongyuan Investment Co., Ltd.
40	China Nonferrous Metal Mining (Group) Co., Ltd.
41	Chongqing Seed Group
42	Jilin Provincial Grain Group
43	Jiangxi Huachang International Economic and Technological Co., Ltd.
44	Yuan Long Ping High-Tech Agriculture Co.,Ltd.
45	China Agricultural Development Group
46	Chinese Academy of Tropical Agricultural Sciences
47	Guangxi Bagui Company
48	Fujian Agriculture And Forestry University
49	Huaqiao Fenghuang Group Co.,Ltd.
50	Menoble Co.,Ltd.
51	Shandong Foreign Economic & Technical Cooperation Co., Ltd.
52	China Agricultural Development Group
53	Shaanxi Agricultural Reclamation Corporation
54	Qingdao Ruichang Cotton Industry Co., Ltd.
55	Heilongjiang Yanlin Manor Technology Co., Ltd.
56	Ningxia GOLDEN Fortune Sheep Industry Co., Ltd.
57	ZTE Energy Company Limited
58	Jiangxi Ganliang Industrial Co., Ltd.
59	Hunan Academy of Agricultural Sciences
60	Cgcoc Group
61	Shanxi International Economic & Technical Cooperation Co., Ltd.
62	Guangxi Academy of Agricultural Sciences
63	Xinjiang Beixin International Engineering & Construction Co., Ltd.
64	Huawei Technologies Co., Ltd.

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**Companies shown in the appendice**


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65	Wepon Group Co., Ltd.
66	China-Egypt TEDA Investment Co., Ltd.
67	Jiangsu Yongyuan Investment Co., Ltd.
68	Dongguan Huabao Shoes Co., Ltd.
69	Fujian Xinqiao Trade Co., Ltd.
70	Fujian Goodwill Building Materials Industry Development Co., Ltd.
71	China Wuyi Co., Ltd.
72	Shanxi Jinfei Investment Co., Ltd.
73	Hongdong Fishery Co., Ltd.
74	Anhui Foreign Economic Construction (Group) Co., Ltd.
75	Hisense Middle East - Africa Holdings Co., Ltd.

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76	China-Africa Lekki Investment Ltd.
77	Yuemei Group Co., Ltd.
78	Guangdong Xinguang International Group China Africa Investment Co., Ltd.
79	Guangdong Zhongni Industrial Co., Ltd.
80	Henan Guoji Industry Group Co., Ltd.
81	China Shandong International Economic & Technical Cooperation Corp
82	JOC Technical Engineering Co., Ltd.
83	Henan Yukuang Kaiyuan Mining Co., Ltd.
84	Sichuan Youhao Hengyuan Agricultural Development Co., Ltd.
85	Changyi Deming IM&EXPORT Co., Ltd.
86	Guangzhou Zhongdian Property Investment Co., Ltd.
87	China Nonferrous Metal Mining (Group) Co., Ltd
88	Sinoma Cement Co., Ltd.
89	Qingdao Ruichang Tech-Industry Co., Ltd.
90	Soluxe International Business Co., Ltd.



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