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Zones of contention

Performance, pitfalls and politics of China-associated economic development zones in Africa

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Contents

List of tables

List of figures

List of images

Abbreviations

AfCFTA African Continental Free Trade Area
AGOA African Growth and Opportunity Act
ARD Landsat Analysis Ready Data
BRI Belt and Road Initiative
BRICS Brazil, Russia, India, China, South Africa
CAIC China African Investment Company
CCECC China Civil Engineering Construction Corporation
CHEC China Harbour Engineering Company
CMA CGM Compagnie Maritime d'Affrètement Compagnie Générale Maritime
CMPH China Merchants Port Holdings
CSR Corporate social responsibility
ETCZ Economic and Trade Cooperation Zone
FOCAC Forum on China–Africa Cooperation
FTZ Free trade zone
FZE Free zone enterprise
GIS Geographic Information System
EDZ Economic development zone
EEZ Exclusive economic zone
EIA Environmental impact assessment
FDI Foreign direct investment
GLAD Global Land Cover and Land Use Change Dataset
IICO Integrated investment, construction and operation
IMF International Monetary Fund
LULC Land Use and Land Cover
MOFCOM Ministry of Commerce of the People's Republic of China
NEPZA Nigerian Exports Processing Zones Authority
NDVI Normalised difference vegetation index
OETCZ Overseas economic and trade cooperation zone
PRC People's Republic of China
SCZONE Suez Canal Economic Zone
SETC Suez Economic and Trade Cooperation Zone
SEZ Special economic zone
SOE State-owned enterprise
SPV Special purpose vehicle
UNCTAD United Nations Conference on Trade and Development
UNESCO United Nations Educational, Scientific and Cultural Organization
USD United States dollars
ZCCZ Zambia–China Economic & Trade Cooperation Zone
ZEEMSV Zona Económica Especial Marítima em São Vicente
ZSR Zone-level social responsibility

Executive summary

This report identifies, maps, categorises and analyses economic development zones (EDZs) across Africa that have an association with the People's Republic of China (PRC). Informed by artificial intelligence analysis of 50 Chinese-associated zones, Geographic Information System (GIS) mapping of a sub-sample of eight zones, and in-depth fieldwork in two case study zones (Lekki Free Zone in Nigeria and Liaoshen Industrial Park in Uganda), the report uncovers the realities of zone establishment and actual outcomes, focusing on the specific opportunities and challenges posed by Chinese involvement. It provides an overview of China-associated EDZs in Africa; analyses Chinese promotional narratives of such zones, contrasting them with the reality on the ground; examines the characteristics and processes of establishing these zones and the nature of China's role; assesses the performance of such zones along economic, social, geographic, environmental, political and security dimensions; and, based on these insights, evaluates the feasibility of transferring a 'China model' of economic zones into the African context.

The report finds that the impacts of China-associated EDZs are meaningful for economies, investments, industrialisation, jobs and urbanisation in their surrounding areas and the entire countries where they are based, but they are rarely transformative as was the case for notable special economic zones (SEZs) in China. In addition, there are many problematic impacts from such zones, especially in the form of limited enhancement of exports; few technological or skills-related spillovers; land expropriation; labour abuses; environmental degradation; and lack of inclusion of marginalised groups, particularly those from local communities. Overall, these challenges are not necessarily a result of the EDZs being China-associated but often reflect broader problems with the concept and development of EDZs, or difficulties resulting from particular local contexts in host countries.

Political, security or sovereignty impacts related to the establishment and operation of EDZs with Chinese involvement also exist, though to a lesser degree. These include tensions within African state structures, corruption and the use of private security forces. Yet, despite primarily being financed and built by Chinese companies, the ownership, management and operation of such zones post-construction is often in the hands of local entities, diminishing the possibilities for political, security or sovereignty impacts resulting from involvement by the Chinese state. However, the intensified collaboration between China and host countries in building EDZs and associated ports, and the resulting improvements in relations with these countries, tend to benefit China and strengthen its influence in Africa.

Translating a Chinese approach to development through EDZs into the local African context is not straightforward. Attempts at replicating China's approach to zone-led development thus need to be 'smart', identifying potential negative side effects of zones, factoring in specific contexts in Africa, and adapting the zones to local circumstances. Realistic expectations should be set when planning and developing such zones. Successfully performing zones should be seen to be those that provide for genuinely inclusive growth and aim to achieve greater zone-level social responsibility (ZSR) by operating zones in a way that benefits society, people and the environment.

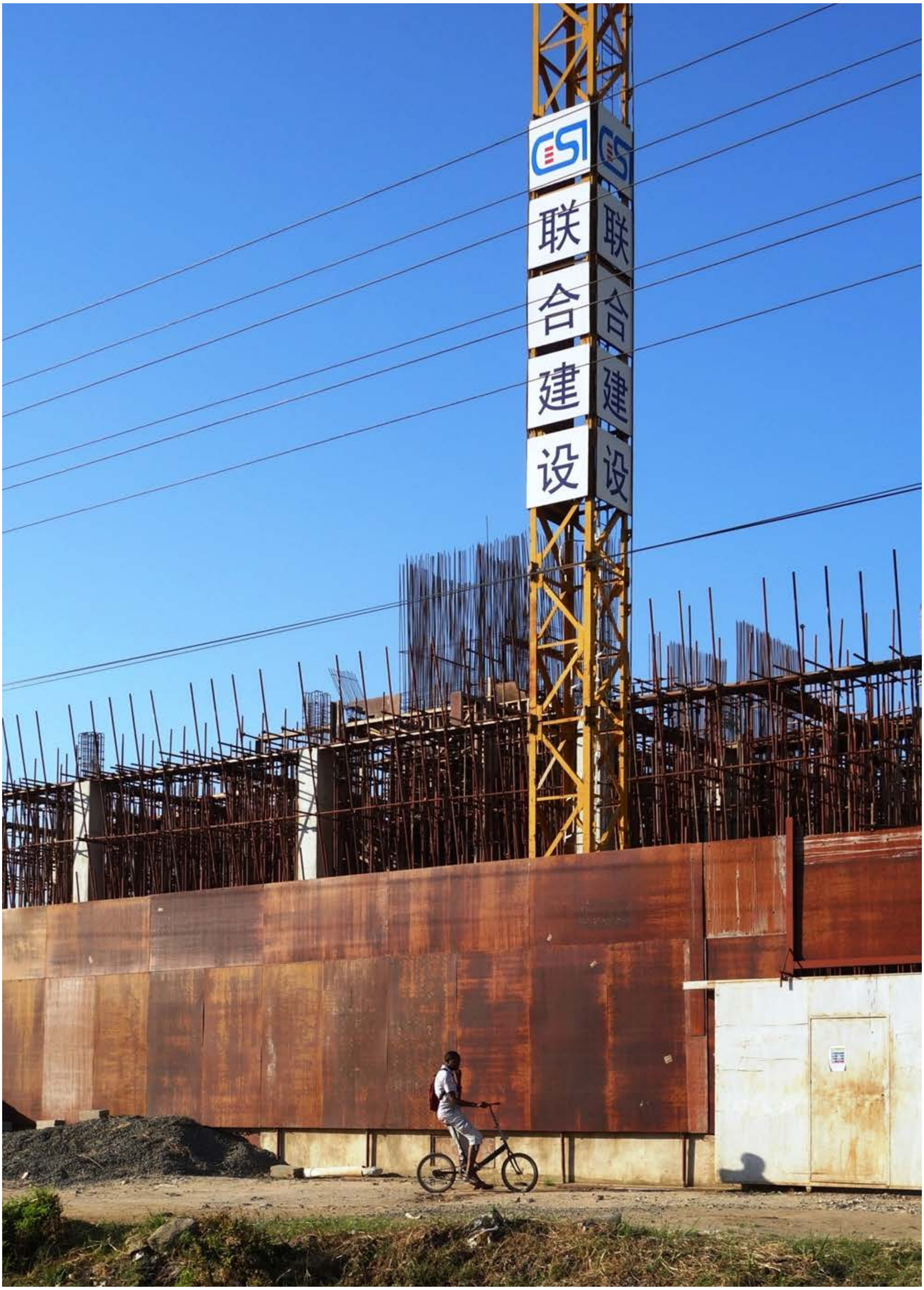


Image 1.1 Chinese construction in Tanzania. Source: Shutterstock

1. Introduction

From the 1980s, the Chinese economy experienced exceptional growth with higher levels of exports and a strong manufacturing sector. Special economic zones (SEZs) were a key driver of this growth. Based on its own positive development experience, in the 2000s the People's Republic of China (PRC) began to promote the establishment of similar zones in African countries as developmental benchmarks that reflected the best features of China's successful economic development. African governments welcomed and actively promoted the establishment of such zones, especially following the Forum on China–Africa Cooperation (FOCAC) meeting in Beijing in 2006 and after the launch of China's Belt and Road Initiative (BRI).

The number of such China-associated zones, that is, zones owned, financed, constructed or operated fully or in part by Chinese entities and/or receiving significant foreign direct investment (FDI) by Chinese companies, has expanded massively across Africa over the past 20 years and more than 30 countries today have at least one such zone. The zones have adopted various nomenclatures, such as SEZs, industrial parks, free zones, and free trade zones (FTZs), and may include ports. For this report, we employ the terms 'economic development zone (EDZ)' and 'zone' to encompass all these different terminologies. The establishment of such zones was actively supported by positive narratives communicated by China and enthusiastically taken up by host country states, such as that the zones would be a 'win-win' for both countries and support cooperation between China and Africa.

However, it is far from certain whether such zones have met these initial promises and can be seen as a case of successful export of an aspect of China's 'development model' to other countries. EDZs in general do not have a strong record of success in boosting economic development, and as enclaves that allow companies to produce and manufacture under preferential investment, regulatory, labour, trade and sometimes environmental conditions, are known to generate unwanted side effects that may outweigh the positive outcomes. Given China's own impressive experience with SEZ-led economic development, might there be something different about China-associated EDZs that enables them to generate better economic outcomes? Are there any negative implications that are specific to China-associated EDZs? And, given China's distinctive state-capitalist economy and authoritarian political system, are there any specific economic, political or security implications of Chinese involvement?

This report aims to answer these questions by uncovering the realities of zone establishment and outcomes, focusing on the specific opportunities and challenges posed by China's involvement. It identifies, maps, categorises and analyses China-associated EDZs across Africa. Informed by an artificial-intelligence-assisted analysis of 50 Chinese-associated zones, Geographic Information System (GIS) mapping of a sub-sample of eight zones, and in-depth fieldwork in two case study zones, the report provides an overview of China-associated EDZs in Africa; analyses Chinese promotional narratives of such zones, contrasting them with the facts on the ground; examines the characteristics and processes of establishing these zones and the nature of Chinese involvement; assesses the performance of such zones along economic, social, geographic, environmental, political and security dimensions; and, based on these insights, evaluates the feasibility of transferring a 'China model' of economic zones into the African context.

The rest of this report is structured in three parts. The first part analyses the narratives that have been communicated by China and host countries about China-associated EDZs, the processes of establishing such zones and their overall characteristics, focusing on specific aspects that might differentiate China-associated zones, such as state ownership. The second part examines the various forms of impact of these zones, with a particular focus on economic, social, labour, environmental, and political and sovereignty impacts. The third part provides detailed insights into the two case study zones: the Lekki Free Zone in Nigeria and the Liaoshen Industrial Park in Uganda. The final section offers conclusions on the implications of such zones and provides policy recommendations.

2. China-associated EDZs: Narratives, establishment and characteristics

The development of China-associated zones began in the wake of China's 'Going out' policy encouraging Chinese companies to invest globally from the turn of the 21st century. The China–Africa relationship of course was not new: much China–Africa cooperation had taken place during the 1980s and 1990s, as well as during China's pre-reform era before 1978. Now, in the 2000s, several African countries, inspired by the successes of the Shenzhen SEZ and other economic zones in China, began to seek investments and assistance from China to establish similar paths to development. China-associated zones emerged in Nigeria, Ethiopia, Egypt, Mauritius, Zambia, Kenya and many other countries.[1]

China's Ministry of Commerce (MOFCOM) gradually extended support to 20 'overseas economic and trade cooperation zones' (OETCZs) worldwide.[2] At the third Ministerial Conference of FOCAC in 2006 in Beijing, the then-Chinese President Hu Jintao spearheaded the collaboration on EDZs in Africa by declaring the establishment of five official zones, in Algeria, Egypt, Ethiopia, Nigeria and Zambia, with up to 50 zones envisaged in total. The Nigerian zone, Lekki Free Zone, forms one of the case studies examined in detail in Section 8 of this report. This formal support by the Chinese state was focused on the sharing of a Chinese development model based on FDI, and explicitly included sharing China's experiences of setting up and operating zones.[3] However, as of 2024, there are only four official OETCZs with MOFCOM recognition across Africa, after the declassification of Algeria's Jiangling zone. This lower-than-expected rate of zone establishment suggests that implementation was not as easy as anticipated, and that China's zone strategy has evolved, leading to a discontinuation of MOFCOM certifications.[4]

The Chinese state suggests that official OETCZs contribute significantly to host countries' revenue through taxation and employment creation.[5] However, this revenue generation claim needs to be qualified, as firms in the OETCZs may often receive fiscal incentives such as tax holidays and reduction or elimination of import tariffs for inputs, in particular for the first few years of operation.[6] These may be offset by increased generation of other revenues, such as value added tax or income tax from employment creation, but whether that amounts to net revenue generation cannot be stated with certainty. Moreover, governments often support zones in various ways (providing security services, subsidising land and financing training for workers), so in the short term the creation of OETCZs may entail a net transfer from the government to the companies.[7] However, in the longer term, as the incentives are reduced or eliminated and the companies become more profitable, the government may see a net return from the increased economic activity generated by the zones.

MOFCOM also maintains a broader list of China-related zones, beyond the 20 officially recognised OETCZs, which now includes 109 zones globally.[8] A 2021 study reports that their number more than doubled in the two years to 2019.[9] For Africa, MOFCOM's 2024 data show 33 zones, with six marked as among the 'thirty most important along the new silk roads', including two in Nigeria and one in each of the five other countries (Egypt, Ethiopia, Mauritius, Sierra Leone and Zambia).[10] China-associated zones represent one-eighth of the African industrial parks in operation, according to the UNCTAD/Africa Economic Zones Organisation 2020 survey.[11] The database compiled for this report identifies a total of 50 China-associated EDZs in Africa, far beyond the MOFCOM list of approved zones (see Section 2.2 for details on categorisation, and Annexe 1 on methodology).

Since the early 2000s, there has been continuous enthusiasm in Africa for establishing new zones. This trend is not necessarily associated with Chinese promotion of zones, and is a result of African governments' interest in promoting industrialisation and job creation.[12] Within this general interest in building zones, China-associated zones have also increased. Figure 2.1 illustrates how these EDZs have expanded into Africa since 2006, for those EDZs where the date of establishment is known. Particularly high rates of establishment took place in two waves, between 2007 and 2009 following the 2006 Beijing FOCAC meeting, and then again between 2015 and 2019, following the establishment of the BRI. As the figure shows, there has been a downturn in the establishment of new China-associated zones in recent years. This can be attributed to several reasons, including a degree of saturation in zone

1 Standard Chartered, 2019
2 MOFCOM, 2024
3 UNDP, 2015
4 Pairault, 2022
5 Ministry of Foreign Affairs (PRC), 2023
6 The United Nations Conference on Trade and Development (UNCTAD) estimates that almost 80 per cent of the special economic zone laws worldwide grant incentives to investors, usually for the first 5–10 years of operation (UNCTAD, 2019, p. 166).
7 UNCTAD, 2019, Chapter 4
8 Invest China, 2024
9 Yan et al., 2021
10 Invest China, 2024
11 Pairault, 2022, p. 80; UNCTAD, 2021
12 UNCTAD, 2021

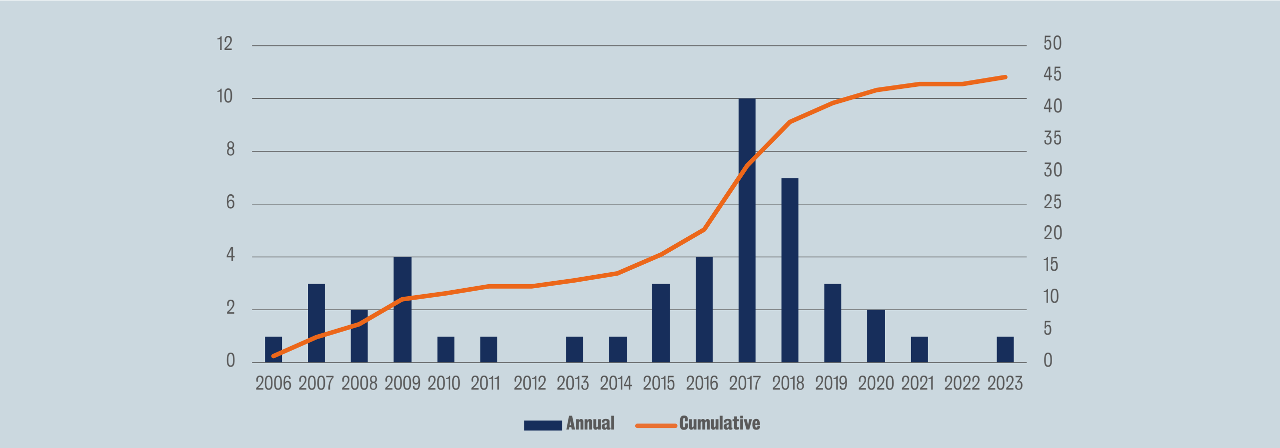


Figure 2.1 Expansion of China-associated EDZs in Africa (n=45) Source: China-associated EDZs database, Adarga

creation reducing the need for new zones; the dwindling enthusiasm for the BRI in China as well as many host countries; and, most recently, the COVID-19 pandemic, which not only disrupted supply chains and foreign investment, but also diverted the attention of African governments away from long-term economic planning towards more immediate policy needs to confront the health and economic crisis.

2.1 Narratives surrounding China-associated EDZs

The introduction of China-associated EDZs into Africa has been accompanied by positive narratives communicated from China and adopted by host country governments. Figure 2.2 provides a graphic illustration of such narratives through a word cloud produced from Chinese-language reports from sources associated with the Chinese state, discussing Chinese EDZs in Africa. It is apparent that narratives promoting zones emphasise primarily the *cooperation* between China and Africa, and that *development* can be achieved through *zones* that host *enterprises* and facilitate *trade*.

More specifically, China has promoted EDZs through its own unique set of terminologies that are also used in connection with its other international initiatives such as the BRI, and in some cases even narratives aimed at a domestic Chinese audience. These terminologies can be categorised into four types:

A Initiatives: This narrative suggests that China is the initiator and planner of key activities benefiting African economies. An example is the BRI, or the recently launched Global Development Initiative and Global Security Initiative. Other initiatives are more regionally orientated, such as the 'Initiative to Support Africa's Industrialisation', announced by President Xi Jinping in August 2023 during a Brazil, Russia, India, China and South Africa (BRICS) meeting in Johannesburg, South Africa, alongside two other initiatives, the 'Plan for the Modernisation of Agriculture in Africa' and the 'China–Africa Talent Training Cooperation Plan' as part of the broader China–Africa dialogue.[13]

B Cooperation: This narrative implies that African and other developing countries benefit if they work together with China. Cooperative projects are portrayed as 'win-win' arrangements, where there is 'reciprocal benefit' for both China and the host country. An associated term is 'shared future', implying collaboration to achieve a future beneficial to both sides. There is an acknowledgement that these activities benefit China as well as the host, but also link the two sides together in constructing joint positive outcomes – as might be implied not to be the case with initiatives from other countries.

Figure 2.2 Word cloud of Chinese state narratives about China-associated EDZs

13 Ministry of Foreign Affairs (PRC), 2024

C Development: This narrative emphasises that China supports African and developing nations elsewhere with economic development, and that its activities in those countries are geared towards that purpose. Sometimes, the word 'independent' is added to emphasise that China will follow its principle of non-interference in the activities of the host country, enabling the host country to choose its own specific path of development rather than simply copying China's experience. Another term used in this context is 'modernisation', as in the 2023 'Plan for the Modernisation of Agriculture in Africa'. This narrative has long existed, as China has for many years positioned itself as a leader of South–South cooperation, even as far back as the Mao era (1949–1976). A recent iteration of this narrative is that China's own rapid development and modernisation will transition into 'opportunities' for other developing countries' economic development, for example via mutual trade. Post-COVID-19 pandemic terms that have been added to this narrative are 'recovery' and 'revitalisation'.

D Domestic narratives: While the above narratives are primarily aimed at an audience outside China, they sometimes mix in terminologies that are more usually aimed at Chinese audiences and form part of domestic government propaganda. This includes the term 'new era', referring to the period since China's 19th Communist Party Congress in 2017 when China was seen as embarking on a 'new era' of economic development as well as of international economic relations under Xi Jinping.[14]

Table 2.1 provides illustrative examples of these four types of narratives. They are all entirely positive, and convey prospective success from engaging with China, including in the establishment of EDZs. Sometimes these narratives are supported by examples showcasing positive cooperation with China that led to host country development, including how zones have attracted investment, increased employment and supported industrialisation. They also discuss contributions made by individual Chinese companies and investors in the zones. All narratives focus heavily on the economy, with the main political dimension being the mention of improved relations between China and the host countries.

Examples	Narrative type
'China's high-quality **development and modernization** process will continue to bring new **opportunities** to countries in the world, including *Zambia*. China is willing to work with the side to jointly build the Belt and Road **Initiative**, expand **cooperation** in infrastructure construction, agriculture, mining, clean energy and other fields, and jointly realize **development** and **revitalization**. … China is willing to work with African countries, including Zambia, to implement the results of the China–Africa Leaders' Dialogue such as the 'Supporting Africa's Industrialization **Initiative**', strengthen strategic docking, deepen cooperation in various fields, support African countries to continuously improve their **independent development** capabilities, achieve economic **recovery** and sustainable **development**, and work together to build a **new era** of China–Africa.'[15]	A Initiatives B Cooperation C Development D Domestic
'This year marks the 45th anniversary of the establishment of diplomatic relations between the People's Republic of China and the Republic of Djibouti. The friendly **cooperation** forged between the two countries since then has set a model of mutual trust, **reciprocal benefit** and **win-win** progress with the times. … In recent years, the two sides have stepped up **cooperation** under the framework of the Global Development **Initiative** to promote sustainable and inclusive **development**'.[16]	A Initiatives B Cooperation C Development
'China-Eida Suez Economic and Trade Cooperation Zone is a demonstration project of Sino-*Egypt* **cooperation** in the joint construction of the Belt and Road **Initiative**. It has attracted nearly 150 Chinese and foreign enterprises … Egypt successfully issued 3.5 billion yuan of "panda bonds" in China, becoming the first African country to issue such bonds.'[17]	A Initiatives B Cooperation
'This industrial park invested by Chinese private enterprises has opened a chapter in the Chinese industrial park model to help the **development** of *Ethiopian* industry.'[18]	B Cooperation
'Hisense South Africa Industrial Park is an important investment **cooperation** project by China in South Africa. … On the eve of his visit to South Africa in 2015, President Xi Jinping mentioned in a signed article that the home appliance industrial parks, automobiles, locomotive assembly plants, cement factories and other projects invested and built by Chinese enterprises in South Africa have created tens of thousands of jobs for the local area. Hisense TV and refrigerators, as the main home appliance brands, have entered thousands of households in South Africa.'[19]	B Cooperation
'Since Chinese President Xi Jinping initiated "The Belt and Road" [**Initiative**] development strategy, it has provided unprecedented development opportunities for Chinese enterprises to expand overseas. China and many other countries along the way have won many opportunities for **win-win development** and **cooperation opportunities**.'[20]	A Initiatives B Cooperation C Development

Table 2.1 Chinese narratives on the establishment of EDZs in Africa (emphases and italics added)

14 Knoerich & Xu, 2018
15 Xinhua, 2023
16 Bin, 2024
17 Ibid.
18 Xinhua, 19 March 2024
19 Can, 2023 (translated from Chinese)
20 Greenhouse International Development Group, 2024

The narratives highlight China's pledge of limited political influence through the principle of non-interference and independent development. These narratives of non-interference are a highly positive aspect from the view of many developing countries, exasperated by the strong degree of 'interference' associated with Western-led development models such as those of the World Bank and International Monetary Fund (IMF), which have tended to tie financial and other support to policy changes aimed at improving fiscal stability and macroeconomic management, often at the cost of counter-cyclical interventions and longer-term economic growth.[21] China's engagement is therefore seen by many host countries as a welcome alternative, especially coming from a country that has demonstrated successful economic development from a low base.

The African leaders' narrative of Chinese investors is broadly positive while the public perception of Chinese projects is mixed.[22] Most of the quotations available from government representatives from Africa are based on interviews given to China's news agency Xinhua, and typically laud Chinese investments, as illustrated in Table 2.2. However, these are then often reported by local news media of different host countries, reinforcing the narrative.

It is thus not surprising that African countries have to some extent mirrored China's positive narratives about China-associated zones, while mostly dropping the China-specific terminology. These narratives tend to emphasise expected numbers of investors to be attracted, jobs created and exports generated. This approach can easily lead to exaggeration of anticipated zone outcomes, resulting in disappointment when these aspirational goals are not met. A clear example of this is found in Nigeria's Lekki Free Zone, discussed in detail in Section 8. Moreover, it should also be noted that these narratives generally emanate from incumbent government representatives, who may have been responsible for the development of China-associated EDZs and have an interest in representing them as successful. Many African opposition politicians, by contrast, have framed Chinese interests in their countries as negative, often to catalyse discontent and bolster support for their political campaigns.[23]

Although most of these China-inspired narratives have been in circulation for many years, China's open showcasing of its experience as an economic model for other countries to emulate is new. The idea of a 'China model' was first introduced into public discourse by Western analysists such as Joshua Cooper Ramo, and

Examples	Narrative type
'China has been a friend to Africa since 1950s. I congratulate Chinese Communist Party for its support towards Africa political struggle for **development**.'[24] ; 'The Western ruling groups are conceited, full of themselves, ignorant of our conditions, and they make other people's business their business, while the Chinese just deal with you as one who represents your country.' Yoweri Museveni, President of Uganda[25]	C Development
'Ethiopia and China have been **cooperating** on technical and vocational training since long time ago so the new agreement to expand the Chinese technical education modality- LUBAN Workshop is an extension of the partnership.' Teshale Berecha, Labor and Skills State Minister, Ethiopia.[26] 'Zambia abides by the one-China principle, highly appreciates the guiding concepts and principles of Chinese-style modernisation, and hopes to learn from China's **development** experience.' Hakainde Hichilema, President of Zambia[27]	B Cooperation C Development
'China has a special place, no doubt, to have the ability to **enhance the competitiveness** of Africa.' William Ruto, President of Kenya[28]	C Development
'China is a great friend of Cameroon and Cameroon is a sincere friend of China' Paul Biya, President of Cameroon[29] 'China continues to be a critical **partner** for Ethiopia.' Abiy Ahmed, Prime Minister of Ethiopia[30] 'The relationship between Africa and China is based on equality, mutual respect and a commitment to a shared well-being. **Working closely together** to assess implementation will further enhance the quality of this process. It is time for Africa to step up as well.' Paul Kagame, President of Rwanda[31]	B Cooperation

Table 2.2 Host country government narratives on the establishment of China-associated EDZs in Africa (emphases and italics added)

21 Mlambo, 1995; Emeagwali, 2011; Mkandawire, 2014
22 Sanny & Selormey, 2021
23 Sibiri, 2021
24 Ministry of ICT and National Guidance (Republic of Uganda), 2021
25 Hilsum, 2006; Orbán, 2015
26 Endris, 2024
27 Wang et al., 2023
28 Bartlett, 2023
29 Bone, 2020
30 Bartlett, 2023
31 Mugisha, 2018

repeated by developing nations inspired by China's success, rather than stemming originally from Beijing.[32] Over recent years, however, China's confidence to present a 'China model' has grown, given the evident success of its own approach to achieving economic development and despite the fact that there is no consensus over what this model precisely entails.[33] EDZs are a key part of the success story of this China model.

2.2 Types of China-associated zones

We use the term 'China-associated' to capture the variety of roles the PRC has played in EDZs, including involvement in conceptualisation, establishment, financing, construction of a zone's infrastructure, ownership and operation. For this report, a zone is described as China-associated if it fits one or more of the following four criteria:

1. The zone is fully or partially owned by a PRC entity, usually a state-owned or private enterprise, or a Chinese sub-national state entity.
2. The zone is fully or partially financed by a PRC entity, such as a Chinese development bank (usually the China Development Bank or China Export–Import Bank), or a state-owned or private enterprise.
3. The zone has been constructed primarily by a Chinese state-owned (or private) enterprise.
4. The zone is operated and managed fully or partially by a Chinese entity, such as a state-owned or private enterprise.

Further possible criteria (not used in this analysis):

5. Multiple Chinese companies have established factories or other investments in the zone through FDI.
6. The host country received advice from China in establishing the zone.

These last two criteria also illustrate possible modes of Chinese association with African EDZs. However, they are elusive and difficult to measure, and the extent of China's involvement through these criteria is difficult to gauge. For these reasons, 15 EDZs in which only criteria 5 and/or 6 seemed applicable were excluded from the analysis conducted for this report (which focused on 50 out of a possible 65 zones).

Chinese companies sometimes cluster in China-associated zones as it is convenient for them from a business perspective and tends to simplify their investment-related administrative procedures. Nevertheless, such EDZs are also open for investors from other countries as well as the host country where the zone is located. To operationalise criterion 5, the ratio of Chinese investors to other investors would need to be specified for an EDZ to be China-associated, but this ratio is subject to change over time and data on the identity of investors in a zone may not be publicly available. Moreover, many Chinese companies invest in EDZs that are not associated in any other way with China, for example in Tatu City in Kenya and Kigali SEZ in Rwanda.

China has engaged in activities to share lessons from its own economic development, at least as far back as 2016, for example through workshops and events for participants from developing countries, including trainings and presentations on subjects specific to the development of EDZs.[34] Contents include the planning, construction and operation of China's own SEZs; the marketing and promotion of zones; the construction of 'smart' zones; the financing of overseas zones by Chinese policy banks; and the establishment of one-stop services within zones. Other training and presentation materials share more general insights from China's development experience, including China's economic achievements and challenges; public governance in China; and technology and knowledge transfer as a component of China's industrialisation. In both in-depth case study zones investigated here, Nigeria's Lekki Free Zone and Uganda's Liaoshen Industrial Park, zone managers from the host country had spent several weeks in China engaging in such training.[35] However, broader details of which specific African zones have received what kind of Chinese advice during their establishment remains unknown, as the details of these events are mostly not made public, making criterion 6 difficult to assess.

A more direct form of Chinese involvement is when EDZs are established through negotiations between Chinese and African officials, with Chinese developers playing a key role in the 'policy mobility' of ideas and practices from China to the host nations in Africa. This form of knowledge transfer is known to have taken place during the development of China-associated EDZs in Ethiopia, where the national government had no zone experience and relied on Chinese support even for institutional details such as the generation of land sub-lease certificates.[36] In Zambia, Chinese developers collaborated with the Zambian Development Authority, which included the arrangement of study visits to existing successful zones in China.[37] Yet here again, systematic information

32 Ramo, 2004
33 Hodzi & Aberg, 2020
34 We obtained a sample of these training materials and reviewed it as part of our investigations.
35 Interviews in Lekki, Nigeria and Liaoshen, Uganda, February 2024
36 In addition, the Ethiopian government drew on lessons learnt from SEZs in other countries, most notably in South Korea, Singapore, Vietnam, Mauritius and Nigeria. Oqubay & Tesfachew, 2019.
37 Bräutigam & Tang, 2011

about such support offered by China in the establishment of EDZs in Africa is not available, such that criterion 6 cannot currently be reliably employed. This criterion was therefore not accounted for in the construction of our sample of China-associated EDZs.

The initiation of a China-associated EDZ can happen in one of three ways:

a. The zone is initiated by the host nation, which approaches China for support. Examples include the Lekki Free Zone in Nigeria (see Section 8), the Tema Free Zone in Ghana[38] and the Pearl River SEZ in Kenya.[39]
b. The zone is initiated by the Chinese national or sub-national state, or by a Chinese state-owned enterprise (SOE). Examples include the Zambia–China Economic & Trade Cooperation Zone (ZCCZ) in Zambia.[40]
c. The zone is initiated by a private 'anchor investor' or developer from China who is engaged in business in the host nation and draws in further investment from China. This investor may use connections with the host and/or Chinese state to facilitate zone establishment but is not directed or employed by either. Examples include the Liaoshen Industrial Park in Uganda (see Section 9), the Eastern Industrial Zone in Ethiopia[41] and Diamniadio Industrial Park in Senegal.[42]

2.3 Properties and characteristics of China-associated EDZs in Africa

The following provides an overview of China-associated EDZs in Africa. Table 2.3 lists the zones examined for this study. A total of 31 African countries are hosting China-associated EDZs, constituting a majority of the possible 54 countries. Most countries host one China-associated zone, but some have several. Ethiopia has the most, followed by Uganda, Morocco, South Africa and Zambia. A certain degree of concentration of China-associated EDZs in a few specific countries – especially Ethiopia and Uganda – is thus observable.

Image 2.1 Urban and industrial construction site in Addis Ababa. Source: Shutterstock

38 This EDZ was set up by the Ghanaian government and has focused on attracting Chinese investors (Cheloti, 2021).
39 This EDZ was the first privately owned zone set up under the Kenyan National SEZs Act, 2015, and was developed by a Chinese company, Guangdong New South, in collaboration with Kenya DL Group (Belt and Road Portal, 2017).
40 China Aid Data, Project ID 52175
41 This EDZ was started by the Lu brothers from Jiangsu Province in China (Calabrese et al., 2021).
42 Reuters, 2017

Country	Zones
Ethiopia	Adama Industrial Park Addis Ababa Industrial Park, also known as Addis Industry Village Bahir Dar Industrial Park Bole Lemi Phase I and II Debre Birhan Industrial Park Dire Dawa Industrial Park Eastern Industry Zone (also known as Oriental Industrial Park) Ethiopia–China (Hawassa) Industrial Park Ethiopia–China (Mekelle) Industrial Park Jimma Industrial Park Kombolcha Industrial Park
Uganda	Kehong Agricultural Industrial Park (Luweero) Liaoshen Industrial Park (Kapeeka) Shandong Industrial Park (Luzira) Sino–Uganda Mbale Industrial Park Tiantang Industrial Park (Mukono) Uganda China Free Zone Guangdong (Tororo), also known as the Osukuru Industrial Complex
Morocco	Battery Industrial Park Economic Zone in Fez Tanger Med Zone
South Africa	Shandong Xinguang Textile Industrial Park South African Energy Metallurgical SEZ
Zambia	China National Building Materials Industrial Park Zambia–China Economic & Trade Cooperation Zone (Lusaka), with sub-zones (1) Chambishi Multi-Facility Economic Zone (MFEZ) and (2) Lusaka MFEZ Jiangxi MFEZ (Chibombo)
Angola	Haishan Park Luanda-Bengo SEZ
Egypt	Suez Canal Economic Zone (SCZONE) Suez Economic and Trade Cooperation Zone (SETC)
Mozambique	Manga-Mungassa (Beira) SEZ
Nigeria	Lekki Free Zone Ogun Guangdong Free Trade Zone
Tanzania	Cassava Processing Park
Togo	Jingrui Garments International Business Centre
Botswana	Daheng Textile Industrial Park (also referred to as Phakalane Industrial Park, which was Phase 1)
Cabo Verde	São Vicente SEZ (also referred to as Zona Económica Especial Marítima em São Vicente, ZEEMSV)
Cameroon	Kribi Deep Sea Port
Chad	Soluxe International Industrial Zone
Congo (Rep. of)	Pointe Noire SEZ
Cote d'Ivoire	Abidjan Port
Djibouti	Djibouti International FTZ
Equatorial Guinea	Mbini Industrial Zone
Ghana	Bright Free Zones / Bright International Free Zones project
Kenya	Pearl River SEZ
Mauritania	N'Diago Port
Mauritius	Jinfei Economic and Trade Cooperation Zone
Senegal	Diamniadio Industrial Park
Sierra Leone	Guoji Industry and Trade Zone
Sudan	Xinguang Textile Park
Zimbabwe	Zimbabwe SEZ and Industrial Park Project (Harare)

Table 2.3 China-associated EDZs in Africa. Source: China-associated EDZs database

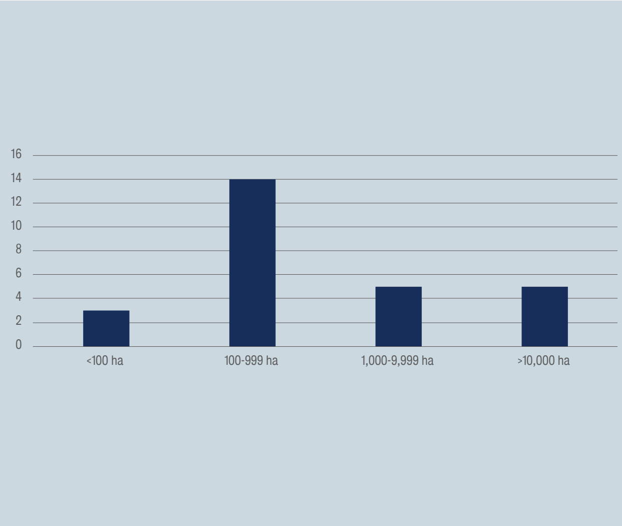


Figure 2.3 Size of China-associated EDZs (n=27)
Source: China-associated EDZs database, Adarga

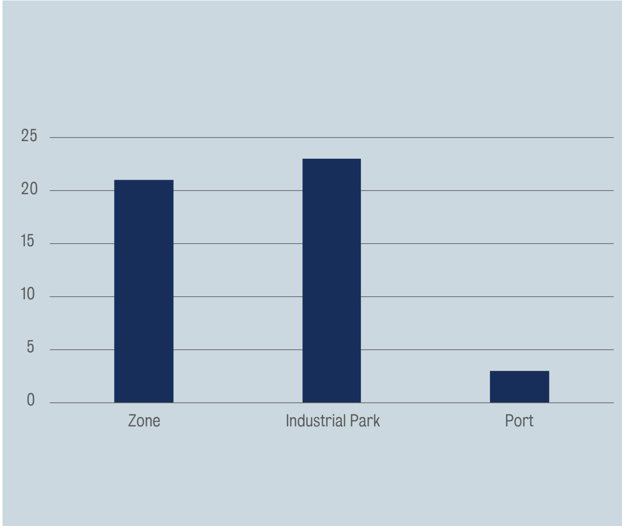


Figure 2.4 Terminologies applied to zones (n=47)
Source: China-associated EDZs database, Adarga

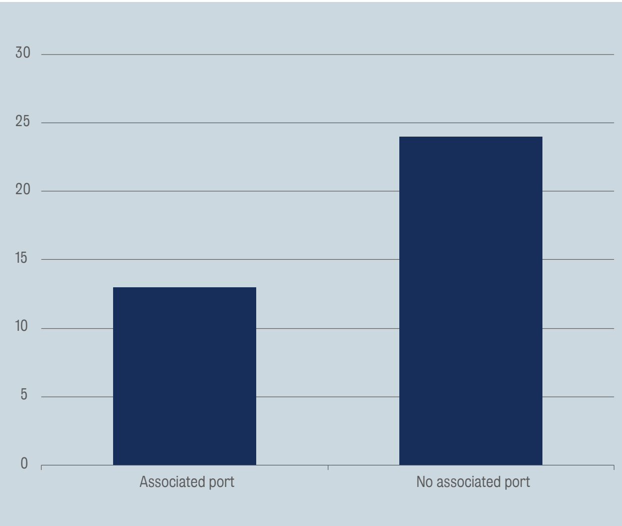


Figure 2.5 Port association of China-associated EDZs (n=37)
Source: China-associated EDZs database, Adarga

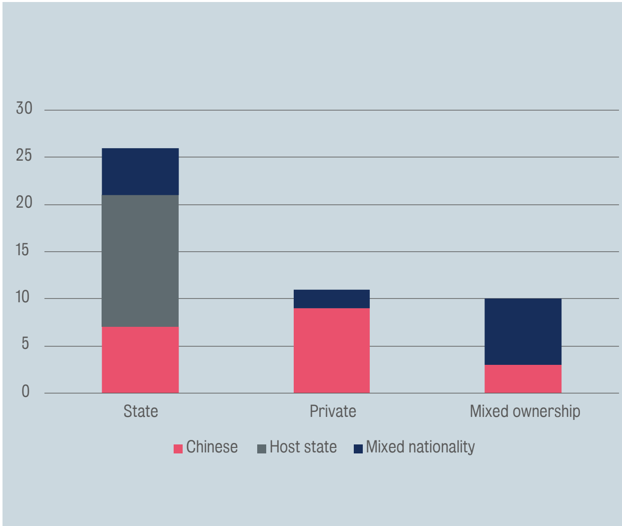


Figure 2.6 Ownership of China-associated EDZs (n=47)
Source: China-associated EDZs database, Adarga

The sizes of China-associated zones are presented in Figure 2.3, for those zones where data were available. Most are between 100 and 1,000 hectares (ie 1–10 square kilometres) in size, with most below 500 hectares. The size of a typical zone is around 200 hectares (2 square kilometres). Some zones are up to 10,000 hectares and a few are larger still. Only three zones are below 100 hectares.

Three main terminologies are typically applied to these zones, as shown in Figure 2.4 for those where such data are conclusive. Many zones are formally categorised as some kind of ‘zone’, such as FTZ or SEZ. Such zones are most often aimed at promoting exports. Most zones are formally categorised as industrial parks. A few are categorised primarily as ports, where an associated port has been the focus of the zonal infrastructure development.

Figure 2.5 highlights to what extent the EDZs have an associated port, for those zones where such data were available. Having an associated port, especially a deep sea port, indicates improved logistics and lower transport times and costs, which makes these zones suitable for international trade, both exports and imports. Only some China-associated zones have an association with a port. China has actively engaged in the construction of overseas

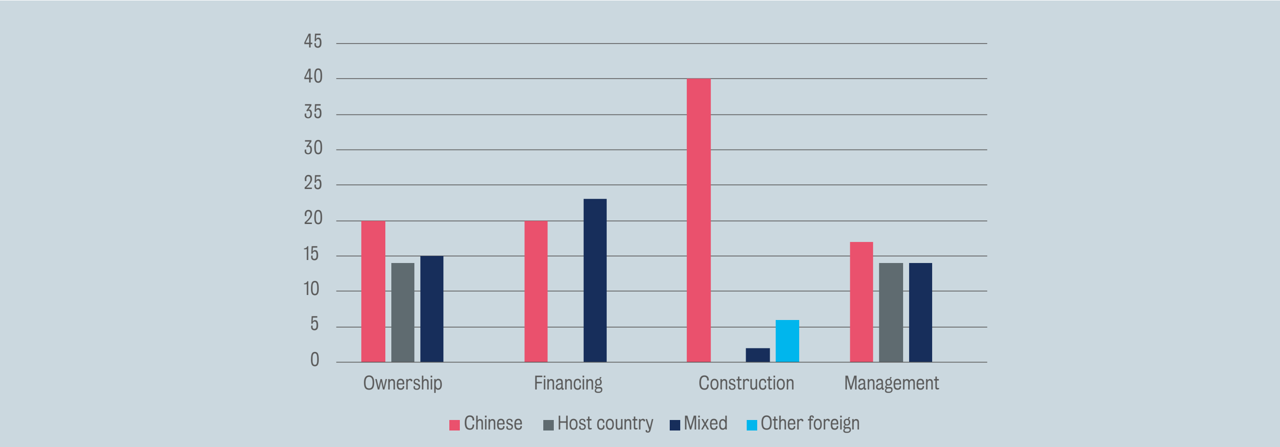


Figure 2.7 Ownership, financing, construction and management of China-associated EDZs by country
Ownership: (n=49); financing: (n=43); construction: (n=48); management: (n=45) Source: China-associated EDZs database

ports in recent years, likely for geostrategic reasons as well as import/export-related activity.[43] The ports connected to China-associated zones add to this network, though the extent to which they specifically support China's geostrategic ambitions requires further investigation, especially as China may have limited or no day-to-day control over port operations, as in the case of Nigeria's Lekki Free Zone.

Figure 2.6 displays the proportion of EDZs by ownership type, for those zones where such data were available. A little more than half of the zones are fully state-owned, a quarter are in purely private hands and the rest are under a mix of public and private ownership. Of the fully state-owned zones, about half are owned by the African host states; only a quarter are fully owned by Chinese state entities; and of the mixed public-private entities, only a minority are purely Chinese-owned. This high non-Chinese state ownership suggests that state ownership is not clearly driven by China, despite China having the largest number of SOEs in the world, which have frequent involvement in overseas investments and the funding and construction of China-associated zones. Instead, the strong involvement by the state in many zones can be explained by the nature of the projects – establishing EDZs involves complex construction of infrastructure and buildings, requires dealing with questions of land allocation, sovereignty and taxation, and often forms part of national development strategies. Yet, despite this high state ownership, it is also noteworthy that almost a quarter of the zones are only partially owned by state entities, and around a quarter have no state ownership at all.

Figure 2.7 shows nationality characteristics of China-associated zones in Africa, for those where such data were available, examining ownership, financing, construction and management of zones. Slightly more than half of the zones were Chinese owned, with close to a third having various forms of mixed ownership by Chinese, host country and other entities from third countries. Around a quarter of the EDZs were fully owned by host country entities, despite being associated with China.

It is not uncommon for such projects to involve multiple companies from various countries, due to the complexities of establishing and operating such EDZs, especially if they require the construction of an associated port. This can involve so-called 'tripartite cooperation' in which China collaborates with the host country and a third party. The Kribi Deep Sea Port in Cameroon is one such example, where the China Harbour Engineering Company (CHEC) Ltd collaborated with French transportation firms Bolloré and Compagnie Maritime d'Affrètement Compagnie Générale Maritime (CMA CGM), as well as Cameroonian companies, to jointly operate the port.[44] Lekki Deep Sea Port in Nigeria is similarly operated by CMA despite being built and partly owned by the Chinese state.

Just under half of the zones have been financed fully by Chinese entities, usually by policy banks, such as the China Development Bank or Export–Import Bank of China, or companies such as China Merchants Group or the Huajian Group. While funding by companies could be considered as an investment, financing provided by the Chinese policy banks is a form of sovereign lending, where the Chinese policy banks are providing the funds, but the ultimate investor and funder is the borrower, that is, the host country government.[45] The remainder of the zones, slightly more than half, had combinations of Chinese, host country and third country financing. This requirement for Chinese and mixed-party financing reflects the relative shortage of capital for such large-scale projects in many African host countries, which need to rely partially or fully

43 Watterson et al., 2023
44 MOFCOM, 2020
45 Robertson et al., 2022

on external financing for the establishment of the EDZs. China has become a welcome source of funds for such projects, as shown by the fact that China has been the sole source of finance in almost half of the EDZs.

Chinese involvement is most prominent in the construction and building of the zones. The large majority of the EDZs were constructed by Chinese companies, predominantly SOEs. Construction is thus the most important factor that makes an EDZ China-associated and reflects the comparative strength and competitiveness of Chinese companies in the field of construction, both in terms of price and speed. A small group was constructed by consortia of host country and Chinese companies, and a few by other foreign companies. No China-associated EDZ was found that had only a company from the host country responsible for constructing the zone.

Finally, referring to the entities that manage and operate the zone after its construction has been completed, Figure 2.7 shows that just over a third of the zones are directly managed by Chinese entities, usually companies. Slightly less than a third are managed fully by host country companies or government-related entities. The final third involves a mixture of Chinese, host country and third country entities, reflecting the frequently complex structures for such zones.

This mixed-management model is employed by both Nigeria's Lekki Free Zone and Uganda's Liaoshen Industrial Park, where despite the very different nature of both the Chinese investors (predominantly large central SOEs in Lekki and much smaller private businesses in Liaoshen) and the host country partners (the sub-national Lagos state government in Lekki, and the ruling family's private enterprise in Liaoshen), there are strong similarities in terms of management. In both cases, a joint special purpose vehicle (SPV) has been established to operate and administer the zone, with representatives of both the main Chinese investors and the host country partner participating in a management committee.[46]

In sum, the data show that Chinese involvement is most pronounced in building and, to a lesser degree, the financing of zones. This is because African countries are very reliant on external construction capabilities and financing support from external sources, with China having emerged over the past two decades as a viable source of both. While there is also Chinese involvement through ownership and management, this is much less pronounced, with African entities often preferring to assume the responsibilities of running the zones themselves. This indicates that African countries have agency in the decision of who ultimately owns and operates the zones, even when these have initially been financed and constructed with Chinese support.

3. Economic impacts

The key promise of EDZs is that they spearhead economic growth and structural transformation, typically by promoting export-orientated manufacturing. This is the essential success story of China's own SEZs established during the country's dramatic post-1978 economic reforms. However, even in China it took more than a decade for the first SEZs to generate significant economic benefits.[47] In the case of China-associated EDZs in Africa, some have now reached a decade or more since establishment, while others are younger, but none seem on track to repeat the eventual successes of the Chinese SEZs. While economic gains are tangible in many African zones, and valued for the meaningful local and sometimes even national contributions that they make, these gains are rarely transformative for the entire economy.

The economic gains from EDZs can be measured by foreign and domestic investments attracted to the zone; the degree of industrialisation in and around the zone; the extent to which zones boost exports; the level of job creation; and the knowledge spillovers and skills development enabled by the companies investing in the zones. Against these metrics, some EDZs are clearly performing more successfully than others, yet, overall, there is no indication that EDZs perform notably better or worse economically on account of their association with China and the 'Chinese model' of EDZs, as reports of other zones also provide varied accounts of successes and failures.[48]

3.1 Investment

The central aim of EDZs is to attract investment to boost local development and spearhead national economic growth and structural transformation, especially by attracting manufacturing into the area and country. The focus is often on the attraction of FDI, which brings additional capital and productive activity from overseas, but domestic companies may also invest in the zones. While zones usually aim to attract foreign investors from anywhere, some are targeted specifically at companies from a particular country or region. Some also focus on a specific industrial sector with the intention of stimulating cluster-formation for the purposes of enhanced collaboration, knowledge exchange and efficiency. China-associated EDZs follow the same goal of attracting investments into the country for local development, with some specifically aimed at bringing Chinese companies to the host country, while others target any investor. For Chinese firms, it can be beneficial to invest in a specific China-associated zone, which may offer tailored support in

46 Interviews with officials in Lagos, Nigeria, February 2024
47 Wong, 1987
48 For examples of poor performance by non-China-associated zones in Africa, see McCartney, 2024; Collins, 2022; Farole, 2011; UNCTAD, 2021; Yusuf, 2023.

EDZ	Investor countries of origin (selection)
Luanda-Bengo SEZ (Angola)	China, Angola, Brazil, Cuba, Eritrea, France, Germany, India, Lebanon, Portugal, Rwanda, Spain, Turkey, United Arab Emirates, United Kingdom
Adama Industrial Park (Ethiopia)	China, Ethiopia, Japan
Bole Lemi Phase I and II (Ethiopia)	China, India, South Korea
Debre Birhan (Ethiopia)	China, Spain
Dire Dawa Industrial Park (Ethiopia)	China, Ethiopia, Italy, Sri Lanka
Ethiopia-China (Mekelle) Industrial Park (Ethiopia)	China, Ethiopia, Bangladesh, India, United Kingdom
Kombolcha Industrial Park (Ethiopia)	China, Italy, South Korea, Turkey, United States
Bright International Free Zones project (Ghana)	China
Diamniadio Industrial Park (Senegal)	China, Senegal, Côte d'Ivoire, France, Tunisia

Table 3.1 Country of origin of some investors in select China-associated EDZs. Source: China-associated EDZs database, Adarga

dealing with the host country's administrative procedures, and they can benefit from operating in clusters with other Chinese companies, either in the same sector, or upstream and downstream sectors (ie suppliers and service providers).[49] Table 3.1 shows the country of origin of some investors from a select group of China-associated EDZs. China features strongly as a country of origin, next to many other foreign countries and the home country.

Chinese FDI into Africa has grown considerably in recent years. This can be explained by a growing interest in Africa's natural resources, in its preferential access to some markets such as the United States (eg through the African Growth and Opportunity Act, AGOA) and in exploring Africa as a market, in particular for construction and manufactured goods. However, accounting for growth in FDI specifically into EDZs remains impossible due to lack of data. Because of the lack of a counterfactual, it is impossible to assess with certainty to what extent EDZs have increased investments beyond those that would have been undertaken had there not been a zone in place. It is clear that EDZs dramatically improve infrastructure and reduce the costs of investment, so they are appealing to investors compared to non-EDZ investment, and China-associated zones may be particularly effective at enticing Chinese companies to invest. But it is possible that Chinese and other companies would still have invested had there not been a zone, especially where their primary aim is to sell to the domestic market or export to neighbouring countries. In some cases, Chinese firms actually prefer to establish factories outside zones: this is especially so where zones restrict the proportion of goods that can be sold to the host country's domestic market; where firms wish to build a smaller factory than required by the minimum size regulations for a zone plot; and where firms wish to avoid the intense competition that can be generated by clustering with other firms producing similar goods.[50]

The promotion of China-associated zones may thus fuel an international zone-based competition between countries that primarily benefits companies and investors through the enjoyment of incentives and tax benefits but does not genuinely increase the number or amount of investments received. The number of zones globally has leapt from 79 EDZs in 1975, shortly before China launched its successful SEZ programme, to more than 5,000 EDZs in 2024.[51] This degree of competition between zones today makes it highly unlikely that any zone will be able to repeat the success of the Chinese zones of the 1980s and 1990s or become 'Africa's Shenzhen'. It is possible, then, that the promotion of zones might not do much more than fuel an unproductive competition among EDZs to the benefit of investing firms but with the negative impact of reducing tax revenue for host governments, at least in the short term while the fiscal incentives provided by zones are in place.

On the other hand, the prospect of zones generating revenue losses while not having transformative impacts similar to those of China's own zones does not imply that the zones necessarily have negative impacts on African economies in the long term. To the contrary, EDZs have the potential to still generate positive and meaningful economic outcomes. First, many fiscal and other incentives offered in zones have a limited time horizon, and the investing companies will eventually start paying taxes after a set number of years, if they are profitable and successful. Secondly, companies in the EDZs generate revenues, stimulate economic activity, create jobs and pay salaries – all of which constitute meaningful economic progress, for example improving the livelihoods of workers and their households and stimulating the growth of local businesses that are only indirectly related to the zone (eg suppliers and service providers). Thirdly, by producing for the domestic market, EDZ firms generally lower the cost of goods, as locally produced goods tend to be cheaper than

49 Bräutigam et al., 2018
50 Interviews with zone and firm managers, Lekki Free Zone and Liaoshen Industrial Park, February 2024
51 Wagner & de Féligonde, 2021; UNCTAD, 2019

EDZ	Examples of investing companies
Lekki Free Zone (Nigeria)	Ajuba Nigeria FZE; Aobo Kedi Nig.Pharmaceutical FZE; Asia-Africa International FZE; Aslan FZE; Aso Savings & Loans FZE; Barbedos Oil And Gas Services FZE; Ben Reubens (Nigeria) FZE; Bolloré Transport & Logistics; China Golden Triangle Group FZE; China Singye Renewable Energy Technology (Nigeria) FZE; Clairgold Oil & Gas Engineering FZE; CRCC Trading & Logistics FZE; Crown Natures Nigeria PLC (CNNPLC); E.O Fabunmi And Sons FZE; Etanzila Petroleum Company FZE; FAS Energy And Natural Resources FZE; Giorgio Dredging Oil & Gas FZE; Golden Dream Commodity FZE; Hapel Petroleum & Gas FZE; Harig Oil Supply & Trading FZE; Hongye Construction Group FZE; Huachuang Steel Structure Engineering FZE; Huayi Furniture Manufacturing Company FZE; H & Y International FZE; Imad Oil And Gas FZE; Jiangsu Yulong Steel Pipe Co. Ltd.; Loving Home Furniture FZE; Mrs Oil And Gas FZE; New Energy Services Company Limited FZE; Nicholas FZE; Northwest Petroleum & Gas FZE; Nowas Oil & Allied Products FZE; Pinnacle Oil & Gas FZE; CRCC Trading & Logistic FZE; Plural Oil Marketing FZE; PMI FZE; Puma Energy FZE; Rano Oil & Gas FZE; Samon Petroleum FZE; Sea Petroleum And Gas FZE; Shanghai Tongji Urban Planning & Design Institute FZE; Sinotruk International Nigeria FZE; Skye Bank FZE; Spog Petroleum Limited FZE; Sulphurstreams Terminalling Company FZE; Teknochem Storage Company FZE; Union Petroleum Services FZE; Worldwide Investment And Development FZE; Xiyang Design & Consulting FZE; Yfk Pharmaceuticals FZE; Zhongsheng Group New Technology Building Materials FZE
Ogun Guangdong FTZ (Nigeria)	Goodwin ceramics FZE; Hewang Packaging & Printing FZE; Pannda Industry FZE; Snowsea Home Appliance FZE; Winghan Industry FZE
South African Energy Metallurgical SEZ (South Africa)	China Metallurgical Group Corporation; Guangdong Wealth Investment Co., Ltd.; Jiuquan Iron and Steel Group Co., Ltd (JISCO); Power China International Group; Shaanxi CEI Investment Holdings Co., Ltd.; Shenzhen Hoi Mor Resources Holdings Ltd; Taiyuan Iron and Steel (Group) Co., Ltd.(TISCO); Tengy Group; Tianjie Group; Zhengzhou Xinli Power Co.

Table 3.2 Examples of companies that have invested in specific China-associated EDZs. Source: China-associated EDZs database, Adarga

imported ones, which may incur high import duties. The reduced expenses in turn raise people's disposable income for other things, further stimulating economic activity. China-associated EDZs in Africa have a record of attracting investments, although the numbers of companies investing are rarely huge and there are considerable variations between the zones. Some larger, more successful zones, such as the Ethiopian Eastern Industrial Zone and the Luanda-Bengo SEZ in Angola, have to date attracted over 100 companies from a variety of countries worldwide.[52] These can be considered as relative success stories in terms of attracting investments. Table 3.2 provides some examples of companies that have invested in specific China-associated EDZs in Africa.

However, many other zones have attracted barely 20 factories and tend to operate well below anticipated capacities.[53] Moreover, there may be significant discrepancies between the advertised number of investors and the actual number of operational factories in a zone, as in Nigeria's Lekki Free Zone, where investor lists include many firms that have expressed an interest but ultimately have not built factories.[54] Rapid turnover of investors may also present a problem, with only a small minority of the original firms still operating three years after set-up in Lekki.[55] This underperformance against anticipated targets is not unique to China-associated EDZs but is a more general issue confronting economic zones in Africa, and indeed elsewhere in the world.[56] The rapid proliferation of EDZs, whether China-associated or not, has likely exacerbated this issue.

Overall, such numbers of investors are not sufficient to be transformative at the macroeconomic level. A World Bank examination of Ethiopia's industrial parks, some of which are considered model examples of successful China-associated zones, concurred that even they 'have not yet reached the scale to demonstrate a macroeconomic impact'.[57] This may, of course, change over time, just as it took time for China's own zones to induce macroeconomic change. Furthermore, even if such large-scale changes do not take hold, zones may nonetheless have important and meaningful micro-level value for the areas, regions and even countries where they are located, generating economic activities where fewer or none previously existed.

3.2 Industrialisation

The main aim of EDZs tends to be the promotion of industrial development, seen as key to achieving economic

52 Gebremariam & Feyisa, 2019; Further Africa, 2023
53 Gebremariam & Feyisa, 2019; Niyonshima, 2023
54 Lekki Free Zone Development Company, 2020; interviews with zone managers, Lekki, Nigeria, February 2024
55 Adunbi & Stein, 2019
56 Wagner & de Féligonde, 2021; UNCTAD, 2019
57 Fanuel et al., 2022

transformation, although they may also be open to services. Because EDZs reserve land for factories, they are not amenable to accommodate the core operations of agricultural and mining companies (eg growing food or extracting minerals), but some of these firms have headquarters in zones or engage in relevant processing activities there (eg agro-processing), which are technically part of the secondary sector. China-associated zones in Africa are in line with this approach.[58] As shown in Figure 3.1 (for those zones where data were available), the majority of all activities are in the secondary sector (including processing of primary sector inputs), befitting the aim of promoting manufacturing. The dominant sector by far has been textiles and apparel, followed by automotives (usually involving the production of parts). Renewable energy, food processing, electronics and construction were also relatively frequent. Firms belonging to the tertiary sector, for example logistics firms, account for the rest. The zones benefit from enhanced logistics and improvements in connections to the outside world to facilitate international trade, especially when they are established in connection with the construction of a deep sea port, such as the Kribi Deep Sea Port in Cameroon.

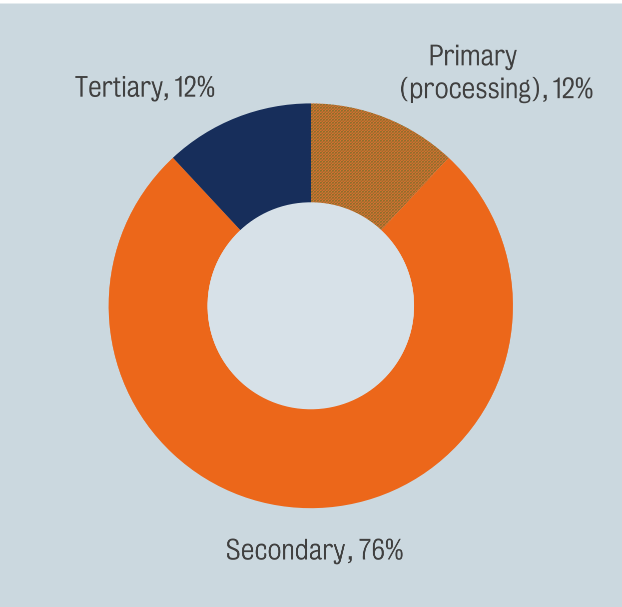


Figure 3.1 Industrial sector activities in China-associated EDZs in Africa (n=27) Source: China-associated EDZs database, Adarga

GIS mapping of the eight selected case studies confirms the presence of industrial development in the zones. Where there has been barren or, typically, agricultural land prior to zone establishment, the maps clearly evidence that areas have been built up over time, including through the construction of factories. Yet, it is noticeable that many areas continue to consist of vegetation, indicating that at least in some cases the build-up of zones has remained below capacity. Some vegetation may of course represent intentional green spaces within zones, but larger areas of vegetation are more likely to be either land lost to agriculture but not yet occupied by industry, or land where unauthorised agricultural production may still be taking place despite zoning, because of the slow pace of zone development and investment.[59] Some zones (see Image 3.1) also provide ready-built factories for firms to lease, such that maps may show the presence of factory buildings where there is as yet no manufacturing taking place.[60] This would support the observations above that investment in many zones is lower than the anticipated or advertised figures, with some zones failing to take off entirely (see Image 3.2).[61]

To the extent that factories are established and put into operation, China-associated EDZs effectively promote and facilitate industrialisation. As with all zones across Africa, those with the greatest number of investors are typically longer-established, multi-sector EDZs located in the more developed African countries.[62] Less-developed countries have unsurprisingly found it harder to attract manufacturers, though may be able to attract investment into zones based on the processing of mining and agricultural outputs, extraction or agriculture, for example the Zambezi Valley Farm Zone in Mozambique and the Tanzania Agricultural Export Processing Zone. However, even in the most developed countries with the longest-established EDZs and the highest amount of investment, zone-based industrialisation has rarely been transformative, as the numbers of factories built are still too low. In Nigeria's Lekki Free Zone, for example, despite having been established as one of the first zones in 2006, and despite official MOFCOM recognition, large parts of the zone remain unoccupied by investors.[63]

Nonetheless, in countries where the background level of industrialisation is extremely low, even such small increases in industrialisation can make important differences, particularly to local and regional economies.

58 It should be noted that Chinese (as well as United States) FDI into Africa flows in no small amount towards manufacturing (and extractives). Moreover, Chinese FDI and lending also flow in considerable volumes towards construction, a sector that has strong second-order effects on manufacturing, having promoted the growth of the domestic construction material industry (easy to produce and expensive to import) in many African countries (Calabrese, 2019; Calabrese & Tang, 2023).
59 Goodburn & Knoerich, 2022
60 Interviews with zone managers in Lekki, Nigeria, February 2024
61 Luwaga, 2021
62 Rodríguez-Pose et al., 2022
63 Observations in Lekki, Nigeria, February 2024

Image 3.1 Bole Lemi Industrial Park (left) and Jimma Industrial Park (right) in Ethiopia. Source: Google Earth Pro (Maxar Technologies, 2024)

China-associated zones can thus still make meaningful but not transformative contributions to national strategies for industrial development, largely mirroring the broader picture of EDZ-led development in Africa.

Image 3.2 Kehong Industrial Park, Luweero, Uganda shows limited industrial development Source: Google Earth Pro (CNES/Airbus, 2024)

3.3 Exports

The establishment of EDZs can be particularly important to bring in export-orientated investments, as the associated incentives can help attract foreign capital and productive activities that might have otherwise been invested in another country. For this reason, EDZs in most parts of the world usually aim to attract FDI in export processing and other export-orientated activities. There are numerous benefits if productive activities in EDZs are orientated towards exports. Export-orientated activities are often new to the economy, as they are brought in by the foreign investor establishing the factory. They generate additional financial income from overseas sources, contribute positively to the balance of payments of a country and bring in foreign currency, thereby supporting processes of economic development. China itself benefited hugely from external demand for its manufacturing output, having become the 'world's factory' and generating an enormous trade surplus and large foreign exchange reserves. Its SEZs have played an important role as a location for export-processing by foreign companies. A good outcome for most African EDZs would therefore be a boost in exports through the engagement of factories in export-orientated productive activities.

With labour costs now increasing in China, eroding its attractiveness as a location for low-cost manufacturing, African countries may have the potential to gain as a convenient replacement for manufacturing. Chinese and other foreign companies may therefore choose to establish factories in Africa, with EDZs being potentially important locations for such industries. China-associated EDZs could be instrumental in attracting Chinese firms that find manufacturing in China too expensive, or that wish to move out of China for other reasons, such as circumventing trade barriers. Europe and North America are likely to continue to be important markets for such goods, and the importance of regional export markets in Africa is also growing. China itself has already become a very important trading partner for most African countries, and the Chinese market for exports from Africa is likely to grow. Yet, despite such potential opportunities, attracting Chinese companies to Africa for low-cost manufacturing has so far been difficult,[64] as China continues to be relatively competitive on production costs and companies that do wish to relocate often prefer Southeast Asia, rather than Africa, which remains an expensive destination to produce for the low-margin, high-competition international market.[65] In addition, the infrastructure for exporting is often insufficient in Africa, particularly in terms of availability of reliable high-quality roads beyond the boundaries of the zones.[66] Given the comparatively high costs of production and logistics challenges in Africa,[67] it is difficult for firms on the continent to sell in international markets, where they will compete with firms that face much lower costs. For instance, in the garment sector, African firms struggle to compete with more efficient Bangladeshi or Cambodian firms with the same market access (eg in Europe), and are generally more successful where they have unique access benefits, such as in the United States through AGOA.

As it stands, the export-orientation of China-associated EDZs in Africa is mixed. Many EDZs generate at least some additional exports for the countries where they are based. For example, in Ethiopia, where the government has heavily invested in making the country an export-led manufacturing hub in Africa,[68] EDZs have considerably boosted exports, growing at a rate of 50 per cent per year prior to the COVID-19 pandemic, with EDZ exports standing at 40 per cent of manufacturing exports in 2019–20. Yet a discernible macroeconomic impact in Ethiopia has not resulted from EDZ-originated exports, due to the small size of the manufacturing sector in the country compared to its large agricultural sector.[69] The Luanda-Bengo zone in Angola, established in 2009 with Chinese funding of USD 3 billion, cites regional export promotion as a key ambition, but effective development of these exports remains a work in progress.[70]

In many EDZs, while export-orientation has not taken hold, many investors instead focus on producing for the underserved African markets, where many goods are imported at high prices rather than produced domestically.[71] Such focus on the domestic market has been the case in the Bright Free International Zone in Ghana, the Lekki Free Zone in Nigeria and the Liaoshen Industrial Park in Uganda.[72] While the high direct and indirect costs of establishing new export-orientated manufacturing plants in Africa may be offputting to firms from China and other countries, given the availability of existing export-orientated infrastructure and facilities in China and elsewhere, these firms are more willing to incur short-term losses to penetrate domestic markets in Africa.[73] To accommodate this preference for the domestic market, restrictions frequently found in SEZs on the proportion of goods produced within the zones that can be sold domestically are not common in cases of China-associated EDZs.[74] This focus on domestic consumers can be valuable economically to the host country, for example by boosting production capacity and increasing the availability and lowering the prices of goods in African markets. However, it is not clear that the core purpose of most EDZs is achieved by offering incentives and tax benefits to firms selling primarily to the domestic market, since this potentially undercuts companies located outside of the zone.

In sum, some China-associated EDZs in Africa have generated additional exports, but at modest levels. Instead, most EDZs are primarily inward orientated, with most investors there focusing on servicing the domestic market. China-associated EDZs appear not to offer any better conditions for export generation compared to other EDZs across the continent. They certainly do not appear able to replicate China's own experience of utilizing zones to massively boost exports. It remains to be seen to what extent the recent establishment of the African Continental Free Trade Area (AfCFTA) might induce a greater export-orientation of African economies and EDZs in the future.

3.4 Jobs and income

Of paramount importance for most EDZs is job and income generation for local populations and internal (as

64 Sun, 2017
65 Xu et al., 2017; Calabrese et al., 2017
66 Interviews with firm managers in Lekki, Nigeria and Liaoshen, Uganda, February 2024
67 Calabrese et al., 2017
68 Siba & Gebreeyesus, 2017
69 Moreover, with the suspension of AGOA for Ethiopia in 2022, the future of export-led manufacturing in the country, in particular for textile and garment, is now bleak. See USTR, 2022.
70 Africa Economic Zones Organization, 2022
71 Calabrese & Tang, 2023
72 Pasquali & Xu, 2023; interviews in Lekki, Nigeria and Liaoshen, Uganda, February 2024
73 Calabrese & Tang, 2023
74 For examples, see Ghana Revenue Authority, 2024; Uganda Free Zones Authority, 2024

Zone	Country	Expected	Realised
Luanda-Bengo SEZ	Angola		7,712 (D)
Daheng Textile Industrial Park	Botswana	8,000 (D)	
Djibouti International FTZ	Djibouti	12,000 (D)	
Kribi Deep Sea Port	Cameroon		1,125 (D)
Suez Canal Economic Zone	Egypt	85,000	
Suez Economic and Trade Cooperation Zone (ETCZ)	Egypt		6,000 (D); 50,000 (I)
Eastern Industrial Zone	Ethiopia		23,000 (D)
Hawassa Industrial Park	Ethiopia		16,000 (D)
Atlantic Free Zone	Morocco		36,000
Lekki FTZ	Nigeria	170,000 (D&I)	5,000 (D)
Diamniadio Industrial Park	Senegal	4,500 (by 2019) +23,000 (in phase II)	
South African Energy Metallurgical SEZ	South Africa	37,000 (D) 600,000 (D&I)	
Sino-Tan Industrial Park	Tanzania	600,000 (D&I)	
China–Africa International Industrial Cooperation Free Zone	Uganda	500 (D)	
Liaoshen Industrial Park	Uganda	10,000 (D)	3,500 (D)
Sino-Uganda Mbale Industrial Park	Uganda	12,000 (D)	5,000 (D)
Zambia China Economic & Trade Cooperation Zone (Lusaka)	Zambia	100,000 (D)	

Table 3.3 Number of expected vs realised jobs in China-associated EDZs D: direct jobs from employment in EDZ; I: indirect jobs from employment in connection with the EDZ. Source: China-associated EDZs database, Adarga

well as sometimes international) migrants. One of the most widely cited positive impacts of zones for host countries is their employment contribution. Employment generation by EDZs can be either direct employment – that is, creating actual jobs within the zone – or indirect employment, which results from broader economic activities that support industries in the zone.

China-associated EDZs, just like other zones, have made a positive impact in African countries by generating many direct jobs. In Ethiopia, this has been particularly successful, with the Hawassa Industrial Park creating 16,000 jobs by 2019,[75] and Ethiopia's EDZs in total creating around 90,000 direct jobs.[76] China-Egypt TEDA Suez Economic and Trade Cooperation Zone has created 6,000 direct jobs.[77] Other EDZs also report the creation of thousands of jobs, sometimes from single projects.[78] These are important contributions that matter considerably to those employed and their families, and are of great significance in the many African countries that have growing, youthful and under-employed populations.

Because of Ethiopia's low levels of job creation in the private sector and high number of China-associated EDZs with a focus on labour-intensive manufacturing, the country's zones may account for as many as one in seven new formal private sector jobs, with jobs directly created to date by economic zones standing at just below 5 per cent of Ethiopia's annual labour force growth. Yet, in other African EDZs, the jobs created are far fewer.[79] The numbers of jobs generated by the EDZs are also generally lower than the expected numbers communicated by host country governments and zone developers – see Table 3.1 for available examples. Nonetheless, the jobs created are valuable additions to economies struggling with high rates of unemployment and under-employment, confirming the usefulness of EDZs in supporting employment generation.

75 Gebremariam & Feyisa, 2019
76 Fanuel et al., 2022
77 Zhang et al., 2023
78 Further Africa, 2021
79 Fanuel et al. 2022

Direct employment in zones can benefit certain demographic groups. China's own SEZs were known from the 1980s to have preferential hiring policies for rural women aged 18–25, with mostly positive societal and economic outcomes despite frequent exploitative working conditions. Similarly, in Ethiopia, China-associated EDZs like Hawassa have stimulated employment of young women, a group with on average nearly double the unemployment levels of the wider Ethiopian population.[80] Many of these women are able to enter the formal economy for the first time through finding zone-based work, commonly in textile manufacturing.

A common pattern in zones across the African continent, as elsewhere in the world including China, is that zones employ a predominantly migrant workforce. That EDZs (whether China-associated or otherwise) tend to generate far fewer formal within-zone employment opportunities for locals appears to have been overlooked by much of the existing literature on economic zones. There has been widespread concern about the numbers of Chinese international migrants employed in EDZs, particularly during the initial phase, where Chinese contractors typically bring engineers and technical workers as well as, occasionally, lower-skilled labour from the PRC to engage in construction work. However, these jobs have a limited duration; by contrast, longer-term employment within African zones overwhelmingly employs citizens of the host country. What is important to note, however, is that these citizens are typically not locals of the area where the zone is located but are internal migrants from less developed regions (or, less commonly, migrants from neighbouring countries).

These internal migrants are the preferred labour force for much factory-based employment, since they may be higher skilled, will usually accept lower wages, and are less well-connected locally, meaning that they are less likely to take time away from work for family- or social-related reasons or to engage in any form of collective action.[81] The preference for non-local recruitment, while stimulating job creation at the country level, may pose challenges for the local area, particularly if alternative livelihoods or indirect employment opportunities are not created for dispossessed locals. In many cases, promotional narratives surrounding zones emphasise jobs to be created locally, raising expectations of sustainable, well-paid formal sector employment for local people.[82] However, in reality, zones may create few direct positions for locals, and even where reservations are made for those evicted from the land for zone construction, these are typically in the least well-paid, lowest skilled types of work for which no formal qualifications are required; for example, security guards, cleaners and janitors.

The number of indirect jobs created by EDZs is much more difficult to estimate. Evidence on zones globally suggests that, for every 100 direct jobs created, indirect jobs may range from 200 (for zones that are closely integrated with the surrounding areas) to just 25 (where zones operate as virtual enclaves).[83] The China-Egypt TEDA Suez ETCZ, for example, has created an estimated 50,000 related employment opportunities (next to the 6,000 direct jobs).[84] The number of indirect jobs created depends in part on the sectors and type of production undertaken in an EDZ. While firms producing garments generally import most inputs and barely anything is sourced locally, agro-processing firms usually buy inputs domestically, thereby creating jobs and boosting incomes, potentially for hundreds if not thousands of farmers, fishermen and so on. Moreover, where zones are located near or within the boundaries of existing cities, and where workers are mostly housed within local communities rather than in zone-based accommodation such as dormitories, they may be better integrated within the local economy, leading to greater indirect employment creation.

3.5 Spillovers

EDZs have the additional objective to attract FDI that generates spillover effects for the local economy in the form of knowledge transfer, skills development for local workers and employees, and productive linkages with local firms that also transfer know-how. Systematic studies of such spillovers in China-associated EDZs are limited. The few existing studies suggest that there is evidence of such spillovers, but there are also considerable limitations.[85] There are occasions where companies train local staff or send them to China for specialised training, as has been the case with employees and managers at Ethiopia's Eastern Industrial Zone,[86] or even bring skilled workers from China to train locals, as has occurred in Egypt's TEDA Suez ETCZ and Uganda's Liaoshen Industrial Park.[87] Such training is usually organised by individual investing firms, rather than through any formal mechanism of the zone, thus there is a high degree of variance and a lack of coordination in training opportunities.

Workers also benefit from additional skills acquired through their employment on EDZ production lines, though these are usually practical and relevant to factory

80 Fanuel et al., 2022
81 Interviews in Lekki, Nigeria and Liaoshen, Uganda, February 2024
82 Interviews in Lekki, Nigeria, February 2024
83 Wagner & de Féligonde, 2021
84 Zhang et al., 2023
85 Calabrese & Tang, 2023
86 Fei, 2018; Xinhua, 19 March 2024
87 Xia, 2019; Zhang et al., 2023

work rather than sophisticated skills in areas such as management. On-the-job training is a common feature of assembly-line work in both Nigeria's Lekki Free Zone and Uganda's Liaoshen Industrial Park. Yet the roles occupied by African workers in Chinese firms remain mostly low- and semi-skilled, with the few African managers in Chinese firms mostly working as mediators between Chinese executives and African labour, for example in human resources, and have little in-depth knowledge of sophisticated production systems.[88] Although some zones have specific policies mandating skills transfer, such as the Ethiopian requirement that investors must gradually substitute foreign personnel with Ethiopian staff by transferring skills and knowledge, most do not have such regulations.[89]

Formal education and training programmes are relatively few. Some zones have aimed at setting up skills training programmes jointly with Confucius Institutes or local vocational institutions, yet these have either not yet commenced (as in Uganda's Liaoshen) or have been abandoned owing to lack of local students able to pay the course fees (as in Nigeria's Lekki).[90] Broader Chinese training and education programmes, for example through the Luban Workshops vocational training courses, have contributed to capacity-building and knowledge transfer in African countries, but this has not been explicitly connected to EDZs, instead forming a part of more general China–Africa cooperation efforts.

An important problem for the generation of positive spillover effects from China-associated EDZs is that the domestic content of products made in the zones often remains low.[91] Some countries have explicitly legislated on this issue: for example, the Nigerian Exports Processing Zones Authority (NEPZA) requires investing firms to commit to 35 per cent local content in their production. However, the development of these kinds of 'backward linkages' has been successful only in certain sectors, in particular those involving the use of raw materials widely available in Nigeria, such as kerosene, kaolin, timber and agricultural products.[92] The supply of these inputs to EDZ firms in raw material form without additional processing thus negatively impacts the depth of linkages that can be formed. Instead, many firms manufacturing in both the Lekki and the Ogun Guangdong Free Zones remain reliant on inputs imported from China. This is partly a function of the lack of reliable, high-quality manufactured parts available from local suppliers, but may also be incentivised by the duty-free concessions that firms enjoy when they invest in Nigerian zones, which allow them to import their inputs duty-free.[93]

Moreover, a negative spillover effect might also result when foreign investors outcompete domestic companies. By importing inputs from China and assembling them locally within EDZs, many Chinese firms are able to sell more cheaply to the host country's domestic market as they avoid paying higher duties. Competition of these Chinese goods with those produced by host country firms may thus contribute to a degree of local deindustrialisation in some sectors, by squeezing African firms out of the market.[94] This may be less of a concern in the least industrialised African nations, where very limited local manufacturing is taking place in any case, but is a relevant consideration for those African countries with an already developed industrial sector, most notably South Africa.[95] In such cases, not only can domestic firms not compete with Chinese manufacturers' greater expertise, capital and access to finance, they may also be unable to take advantage of the incentives available to foreign investors in EDZs, which are typically subject to minimum size and investment requirements. Ethiopian firms, for example, have been shown to be unable to afford to invest in Ethiopia's Eastern Industrial Zone.[96] Thus, only foreign (Chinese and non-Chinese) firms are able to benefit from the zone, potentially placing them in an advantageous position compared to Ethiopian firms.[97]

Overall, China-associated EDZs are not yet a strong vehicle for the transfer of know-how and the generation of local skills. Some positive spillover effects occur, but the extent of knowledge transfer remains limited. For example, Ethiopian firms have registered improvements in technological efficiency and scope of business resulting from linkages with foreign investors, albeit not usually at a high level.[98] Local integration of EDZ-based manufacturing is mostly weak, except in the supply of raw materials. There is no indication that spillover effects are stronger or weaker in China-associated EDZs.

3.6 Discussion

China-associated EDZs have made meaningful contributions to the economies of African countries,

88 Interviews in Nigeria and Uganda, February 2024; Auffray & Fu, 2015
89 Ethiopia Law No. 886/2015
90 Interviews in Nigeria and Uganda, February 2024
91 Fanuel et al., 2022
92 Ogbonna, 2021
93 Interviews with firm managers, Lekki, Nigeria, February 2024
94 Edwards & Jenkins, 2014
95 Calabrese & Tang, 2023
96 Giannecchini & Taylor, 2018
97 Ikpe, 2021
98 Tang, 2019

such as attracting some productive investments by companies from China and elsewhere, achieving some industrialisation, expanding production and exports to a certain degree, creating jobs (albeit fewer than anticipated) and raising incomes, and generating some positive spillover effects. These contributions have been meaningful and valuable for local and national economies, yet they have not been transformative. Investments in zones have ranged from a few dozen to above 100 investors; industrialisation has occurred but has mostly been below anticipated capacities; exports have been generated, but a greater focus in many zones has been on servicing domestic markets and reducing imports; jobs created have been significant, though there is scope for further job increases; and spillover effects have occurred but remained at lower technological levels.

The contributions made by China-associated EDZs to African countries mirror those of other EDZs. No significant distinctive strengths or weaknesses of China-associated EDZs have been identified, with regards to their economic contributions. It may be that the EDZs are still in relatively early stages of development and will have more transformative impacts in the future, in line with further growth of African economies. For now, the picture remains that African EDZs have achieved below their anticipated potential, regardless of whether they are China-associated or not.

The narratives propagated by China and many African governments about EDZ-led growth in Africa are therefore only partially accurate. EDZs have certainly enabled productive economic collaborations between China and Africa that have encouraged more Chinese companies to produce and manufacture on African soil. They can also be seen as a 'win' for African host countries, as they have to some extent increased investments, industrialisation, production and exports, jobs and incomes, and technologies – all meaningful contributions to African economies. However, the excessive positive enthusiasm that some Chinese and host country narratives convey about the potential of 'China model' EDZs to transform African economies is exaggerated. Contributions in most zones have so far been piecemeal, and there has been no widespread macroeconomic impact from these zones. The narratives from China, commonly reproduced by governments in host economies, convey many future-directed aims of what 'will' happen in terms of investments, jobs and exports. Much ink has been spilled on conveying such ambitions to enthusiastic audiences. The positive but much less impressive realities of where things stand today have been far less frequently expressed in prevailing accounts about EDZs in Africa.

4. Social impacts

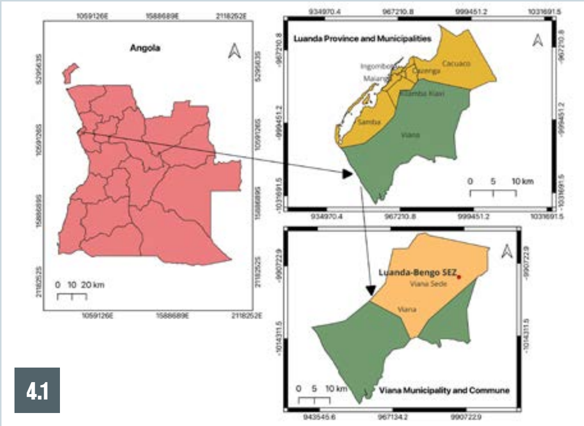
While economic impacts of EDZs are often examined at the national level, they also have a variety of social outcomes, both positive and negative, at a more local level, that is, for their neighbouring districts, villages and towns. This section examines how urbanisation has taken place in the areas where China-associated EDZs have been established and the extent to which this has affected local infrastructure, transport networks and amenities to the benefit of local populations. It outlines how large-scale acquisition of land from the pre-existing population impacts these people's livelihoods, especially when they may not be adequately compensated; and how the resettlement that follows land transfer creates inequalities and potentially social unrest. The shift from farmland to industrial land typically reduces local agricultural production, with knock-on effects for other aspects of local life, including living costs, diets and gender relations. In addition, internal or cross-border in-migration for EDZ employment may lead to ethnic and social tensions and an increase in inequality, both between locals and migrants and within the local community. The section examines how some locals effectively respond to the changes brought about by EDZ development, by finding alternative economic opportunities related to incoming industries and providing services to migrant workers.

4.1 Urbanisation and amenities

Through detailed GIS mapping of the areas around China-associated EDZs, it is possible to examine how the local landscape has changed, in particular through the development of residential and industrial areas, the construction of transport infrastructure and the establishment of other urban amenities. Using GIS mapping of various EDZs, it appears that the establishment of EDZs is associated with the construction of strong transport links – in particular, roads – with positive impacts for the connectivity of local areas. Many also have good existing or developing links with rail networks or ports. There is a wide variety of outcomes relating to urbanisation and amenities more broadly, with some zones seeing rapid residential and commercial development whereas others remain as industrial enclaves or remote outposts.

In many China-associated EDZs, the outcomes of associated urbanisation are growing residential spaces, urban sprawl, commercialisation of land in neighbouring villages and increased road and railway connectivity to the nearest large cities. This mirrors the approach taken by the SEZs in China, which were commonly developed as integrated townships that incorporated residential and commercial amenities into the geographic area of the zone.

For example, GIS mapping of the Luanda-Bengo SEZ in the Viana municipality of Luanda Province, Angola (see Image 4.1), shows that the SEZ is well-served by major



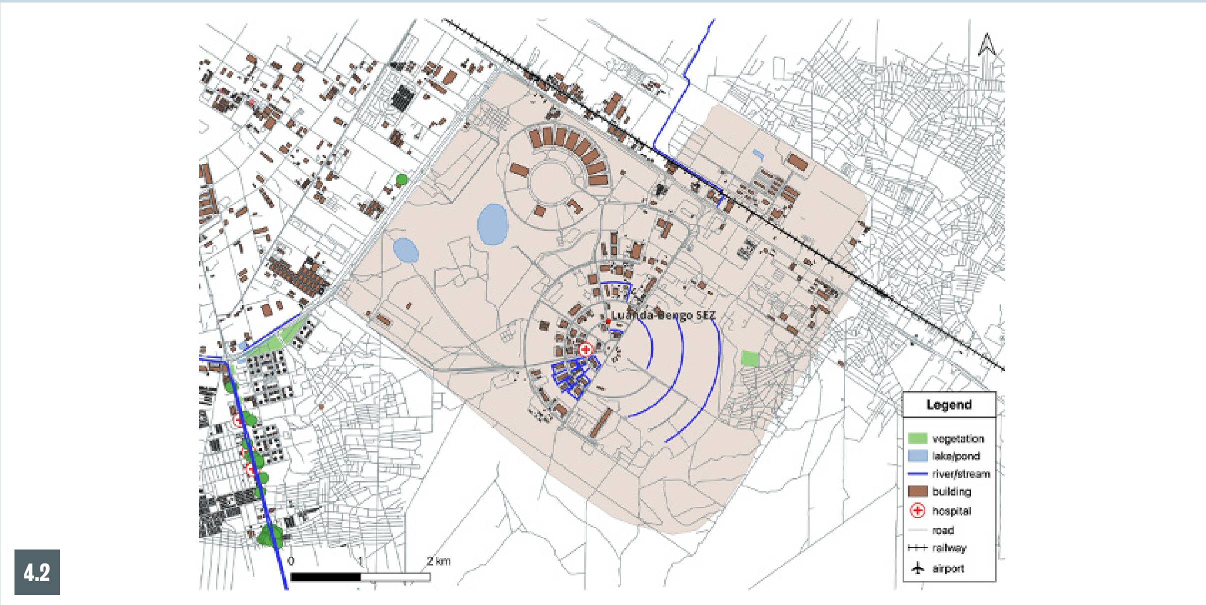
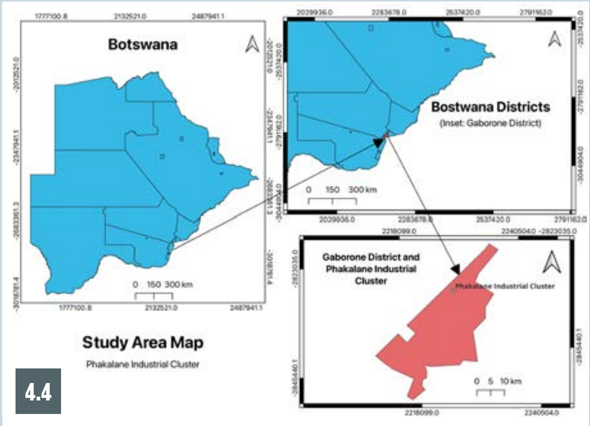


Image 4.1 Map of Angola with the Viana Municipality and Luanda-Bengo SEZ **Image 4.2** Road, rail and transport networks with built-up areas around Luanda-Bengo SEZ **Image 4.3** From mostly agricultural land in 2003 (left) to urbanised in 2024 (right) Luanda-Bengo SEZ, Angola. Source: Google Earth Pro (Maxar Technologies/Image Landsat/Copernicus, 2024; Airbus, 2024)



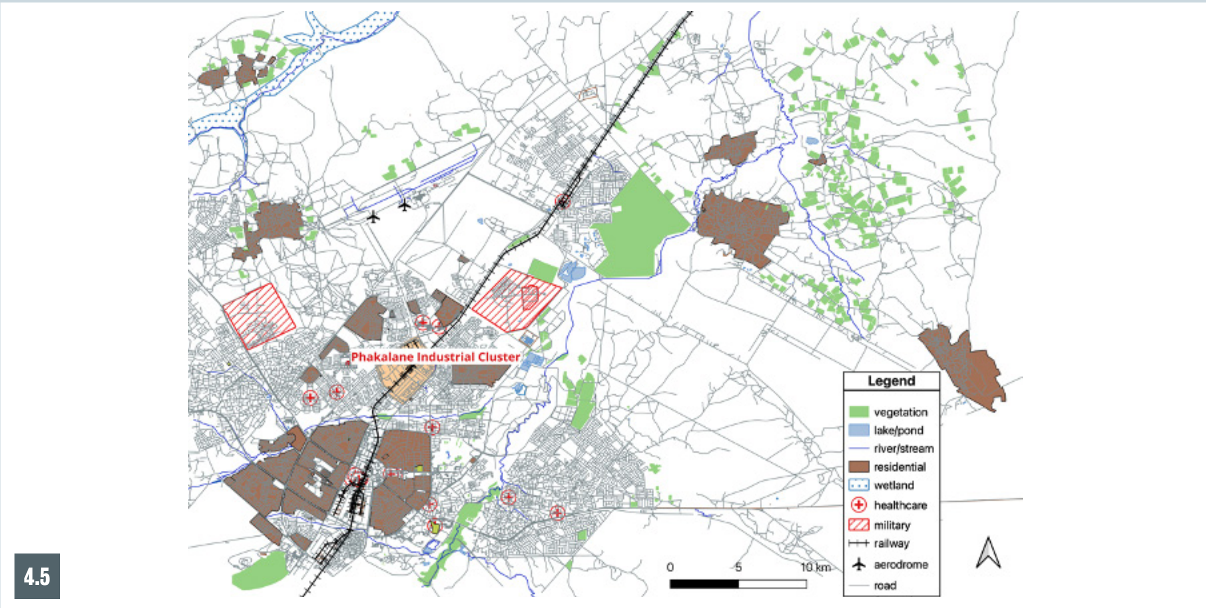
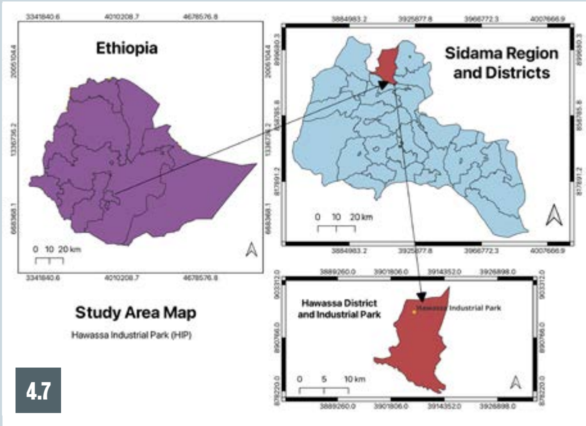


Image 4.4 Map of Botswana with Gaborone District and Phakalane Industrial Cluster **Image 4.5** Road, rail and transport networks with built-up areas around Phakalane Industrial Cluster **Image 4.6** From existing industrial cluster in 2005 (left) to full industrial, commercial and residential complex in 2024 (right) Phakalane Industrial Cluster. Source: Google Earth Pro (Maxar Technologies, 2024; Airbus, 2024)



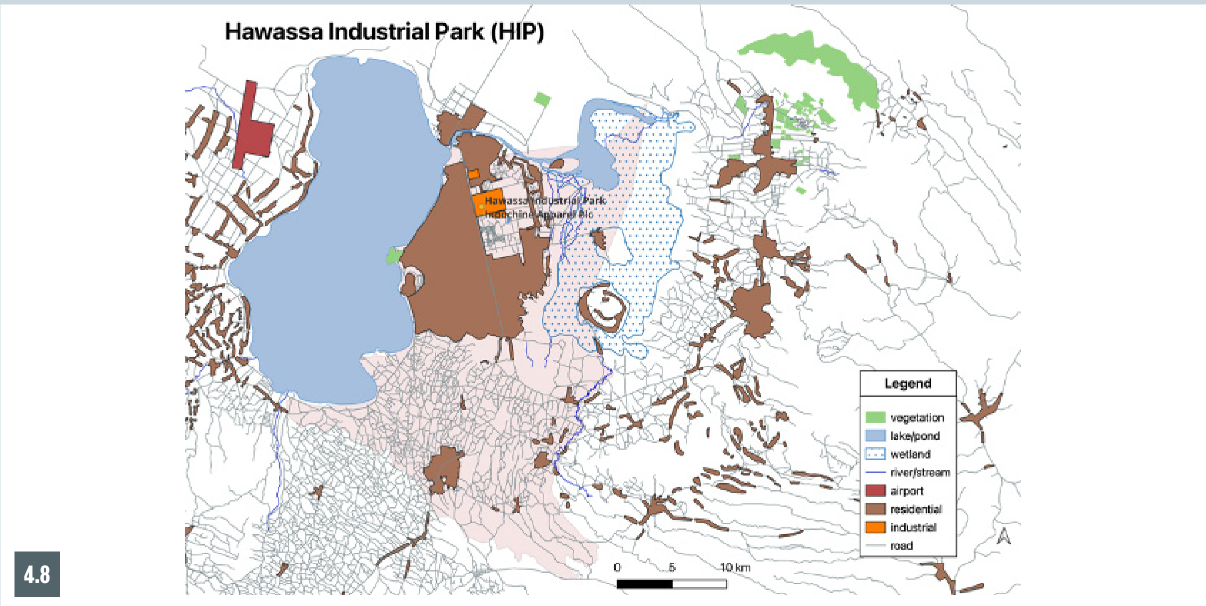


Image 4.7 Map of Ethiopia with Hawassa Industrial Park **Image 4.8** Road, railway and transport network around Hawassa Industrial Park **Image 4.9** Factory construction in Hawassa Industrial Park from 2014 (above) to 2023 (below). Source: Google Earth Pro (CNES/Airbus, 2024; Maxar Technologies, 2024)

expressways, especially to the northeast and northwest, and railway networks to the north connecting the EDZ to Malanje, a major city 380 kilometres to the east (see Image 4.2). The zone is already served by the port of Luanda (not connected to the EDZ) located 33 kilometres away. With a total area of 4,718 hectares, it is the largest industrial centre in Angola, having been set up in 2009 in collaboration with the Queensway Group, a group of mostly private Chinese developers based in Hong Kong. The area has transformed from mostly agricultural land prior to zone construction to a significantly more urbanised and built-up area today (see Image 4.3). GIS mapping of the zone also indicates that the zone benefits from a hospital in the vicinity, and residential areas have emerged in nearby neighbourhoods to the northeast and southwest (see Image 4.2).

Similarly, according to GIS mapping of the Phakalane Industrial Cluster in the Gaborone district of Botswana (see Image 4.4.), the zone is well served by road and railway networks linking it to Francistown, Botswana's second largest city, and to the Zimbabwean and South African borders (see Image 4.5). There is also an airport to the northwest of Phakalane, and two existing military bases to the northeast and northwest. The zone was set up in 2009 by two private Chinese firms, Daheng Holdings Group and Touch International Holdings group, on the site of a small existing industrial cluster. Phakalane Lagoon, a wetland area, is adjacent to the zone.

The case of the Phakalane Industrial Cluster clearly illustrates how urbanisation of the region where EDZs emerge has effects in neighbouring towns and villages. A residential area has emerged in the neighbourhood of the zone, and Gaborone district has become a manufacturing hub that draws job-seeking migrants from other parts of Botswana. The incoming population usually settles down in rural areas on the periphery of Gaborone, leading to the creation of 'commuter' or 'satellite' towns that have a lower cost of living and rental spaces – resulting in rural settlements that have been largely agricultural assuming urban characteristics such as commercialisation of land for rental markets (see Image 4.6. showing the area's urbanisation).[99]

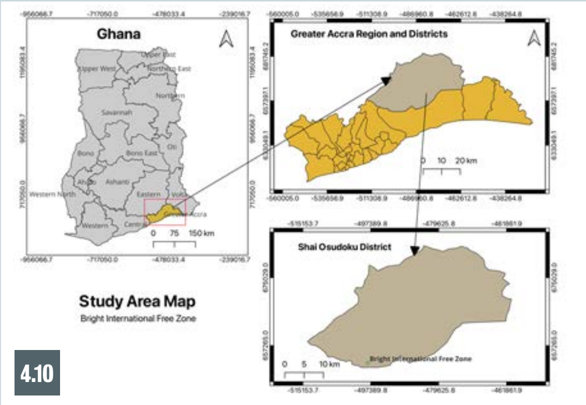
Another example is the Hawassa Industrial Park in Ethiopia, which was set up in 2016 as a textile and garment park, having been built by China Civil Engineering Construction Corporation (CCECC). The park, which is owned by the national Ethiopian government and is considered Ethiopia's flagship industrial park, is currently 130 hectares in size, with plans to grow to 400 hectares. It is located on the outskirts of the existing city of Hawassa, in the Rift Valley of central Ethiopia, at the eastern edge of Lake Awasa, and 275 kilometres south of the capital Addis Ababa (see Image 4.8). The city is situated on the Trans African Highway-4, an international road from Cairo to Cape Town. GIS mapping suggests mixed land use, with residential development mixed with commercial and industrial activities. The zone has excellent connections to a major highway, A8, to the southwest, connecting to Shashamane city to the north and the large town of Dila to the south. Existing residential areas are concentrated in the area to the southwest of the A8 highway, with limited new residential development in the area around the zone. An airport is located around 7 kilometres to the northwest (see Image 4.9). Image 4.10 shows significant factory construction in the zone since 2014.

The Bright International Free Zone is located at Afienya, about 10 kilometres north of Tema city on Ghana's coast, which is itself 35 kilometres from the capital Accra (see Image 4.11). The zone is currently an enclave of 485 hectares in size but is planned to become a new modern 'city' integrating Chinese manufacturing with residential and commercial development. GIS mapping demonstrates that the built-up area has increased, with enhanced road connectivity, particularly to the main trunk road linking Tema to the town of Akosombo 55 kilometres to the north. A railway line linking Tema port to Akosombo is under construction. The area has both industrial and residential spaces marked out, though actual residential occupation and the development of amenities appear so far limited (see Image 4.12). The zone started operations in 2020 and has seen significant factory construction (see Image 4.13). It was developed by a private Chinese firm, the Greenhouse International Development Group, established in Ghana in 2011 by a Chinese subcontractor for a provincial SOE.

Despite many China-associated EDZs having spurred considerable urbanisation in the area of the zone, there are also cases where urbanisation outcomes have been more modest. For example, Cameroon's Kribi Deep Sea Port, the first large-scale deep-water port in the country, became operational in 2018, with an attached export processing zone developed by Chinese investors including the SOE CHEC. The port and zone are in the Kribi area in southeast Cameroon, about 30 kilometres south of the resort town of Kribi, on the site of a now-resettled village, Lolabé (see Image 4.13). GIS mapping indicates that the port and zone are connected to one major highway, linking them to the border of Equatorial Guinea to the south, the capital Youndé to the northeast and the coastal city of Douala to the north. However, there is as yet no rail link to the zone, and only minimal residential development in the area (see Image 4.14). Construction appears to have focused primarily on the port and associated infrastructure (see Image 4.15).

Similarly, the Djibouti International FTZ was set up in 2018 as a collaboration between the Chinese SOE China Merchants Group, and the Djibouti Ports and Free Zone Authority. The zone is currently 240 hectares in size. It is located adjacent to Djibouti Port, the railhead for the recently completed Djibouti-Addis Ababa railway (see

99 Sebego & Gwebu, 2013



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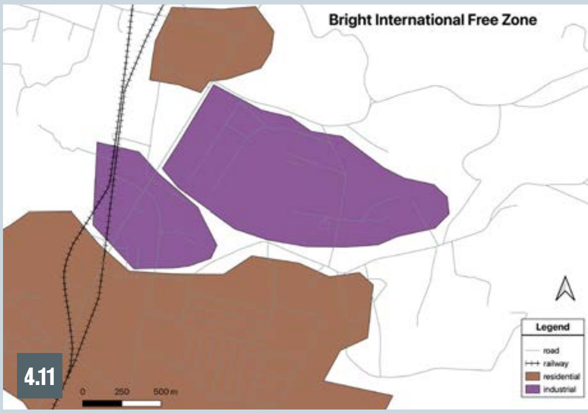

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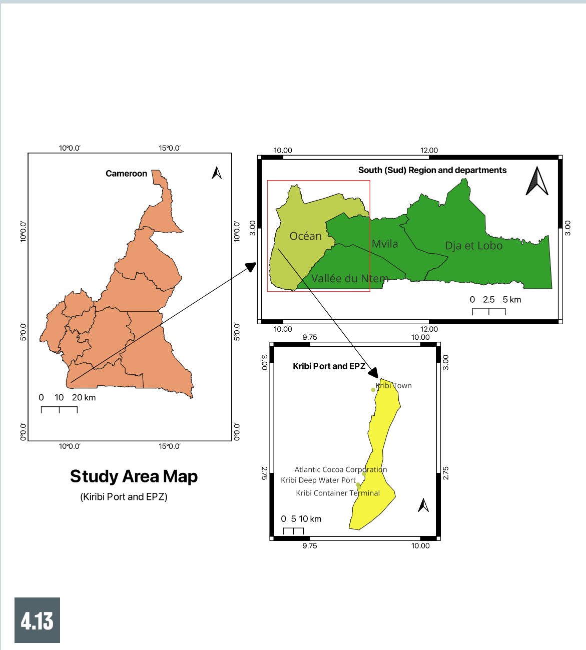

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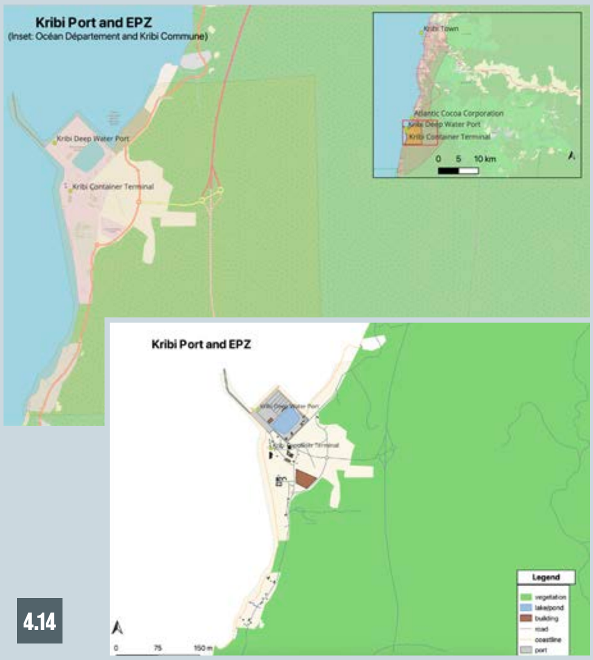

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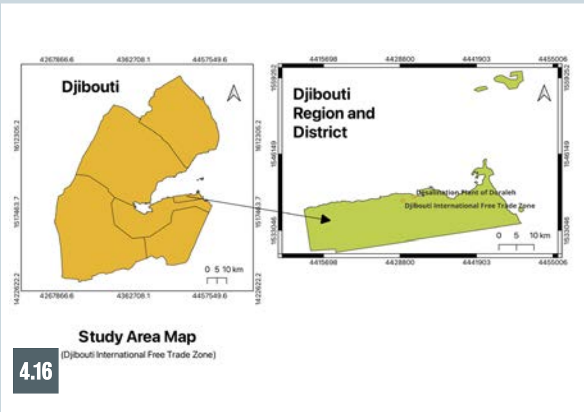
Image 4.10 Map of Ghana with Bright International Free Zone in Shai Osudoku district **Image 4.11** Road, railway and transport networks with built-up area around Bright International Free Zone **Image 4.12** Factory construction in Bright International Free Zone from 2017 (above) to 2022 (below). Source: Google Earth Pro (Maxar Technologies, 2024; CNES, 2024; Airbus 2024) **Image 4.13** Map of Cameroon with Kribi Port and industrial complex in Southern region **Image 4.14** Overview of Kribi Port in Cameroon



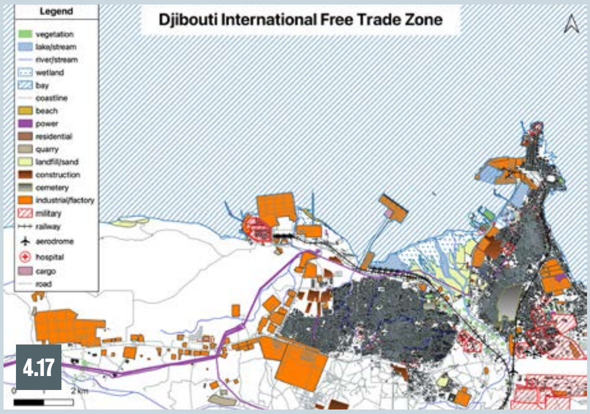


Image 4.15 Kribi Port under construction in 2017 (left) and in operation in 2019 (right, with ships and containers) Later images are unavailable. Source: Google Earth Pro (Maxar Technologies, 2024; CNES, 2024; Airbus, 2024) **Image 4.16** Map of Djibouti with the Djibouti International FTZ **Image 4.17** Road, railway and transport network around the Djibouti International FTZ **Image 4.18** Djibouti International FTZ prior to construction in 2009 (left) and in operation in 2022 (right). Source: Google Earth Pro (Maxar Technologies, 2024; Airbus, 2024)

Image 4.17). GIS mapping shows that the zone is located to the west of Balbala city, with excellent access to the N1 highway to Ethiopia and to Djibouti International Airport. It has no rail connection and not much residential development, but it is well-supplied with dedicated power lines (see Image 4.17). Here also, construction has focused on port development (see Image 4.18).

It is evident from the GIS mapping that the construction of EDZs fosters urbanisation and commercialisation of land in the area, with spillover effects on neighbouring towns and villages. EDZs foster the generation of greater road, railway and port networks to support movement of the goods produced in them. This enhanced connectivity also makes it easier for people to access the areas and it generates agglomeration effects. In many but not all cases, residential areas emerge, often with better amenities such as hospitals and schools, making the location more suitable for living. This mirrors the development of SEZs in China, which formed integrated townships that incorporated residential and commercial amenities into the zone area.

4.2 Dispossession

One recurring issue with the establishment of an EDZ, whether China-associated or otherwise, is the accompanying dispossession from the land of previously existing agricultural communities. Large-scale land expropriation was a feature of China's own urban and SEZ-related development, from the 1980s to the mid-2010s. Dispossession causes disruption and loss of livelihoods to farmers, herders and other groups relying on the agrarian economy. Due to the nature of land acquisition and the presence of overlapping customary land titles and legal regulations, land transfers may bring serious challenges in identifying and adequately compensating the rightful owners and occupiers of land. While it is a general outcome of industrial and urban development, dispossession becomes a larger problem when local land governance regimes and weak institutional mechanisms for the monitoring of land acquisition, as well as other issues, result in unfavourable outcomes for local communities.

Many China-associated EDZs across Africa have faced land-related challenges. In Nigeria, the construction of the Lekki Free Zone resulted in the un- and under-compensated displacement of 26 rural communities from their ancestral land and source of living.[100] Similarly, the acquisition of land for the Ogun Guangdong Free Zone, also in Nigeria, led to the eviction of settlers without full compensation.[101] In Ethiopia, the setting up of the Eastern Industrial Zone caused the displacement of hundreds of farmers,[102] and the expansion of the zone through the Huajian Group's acquisition of an additional 320 hectares of land near Addis Ababa caused further evictions.[103]

In the case of Angola, land acquired for the development of the Luanda-Bengo SEZ has been mired in conflict. The deal between the 'Office for National Reconstruction' (GRN) headed by the Angolan military and the Chinese Queensway Group faced multiple allegations of illegal sale and occupation of agricultural land belonging to the towns of Icolo and Bengo. Municipal and provincial governments issued land titles for the same land parcel to multiple individuals, causing disputes, and land remained idle more than 10 years after acquisition, raising suspicions about land grabbing for speculative purposes.[104]

In Mauritius, when the Jin Fei Zone in Riche Terre was planned as an industrial area in 2007, the Mauritian government compensated sugarcane farmers for the land but not their crops, which would be harvested before eviction. However, after compensation disputes, land was set ablaze without warning, leading to uncompensated crop loss, and farmers were ordered to vacate the land.[105] Contestation continued after the failure of the industrial zone: in 2017, remaining residents repeatedly protested the erection of a boundary wall by Chinese developers that encroached on pastoral land and prevented livestock grazing, while those evicted complained over lack of prospects for long-term sustainable livelihoods.[106] Such lack of sustainable alternatives to agricultural livelihoods has been a significant source of discontent for many zones.

Land dispossession and disputes over ownership and compensation can create political volatility and violent protest, as seen in the case of the Lekki Free Zone in Nigeria, where disputes led to the fatal shooting of the zone manager in 2015.[107] Crime and other forms of social disorder may also emerge, especially where local populations find it difficult to sustain their livelihoods, and may thus take to informal rent-seeking activities to generate incomes, such as extorting money from those passing through their neighbourhoods.[108] Outcomes of such dispossession may be complex and multi-layered. In Lekki, formerly a farming and agrarian community, men fished or farmed while women sold produce in local markets. The collapse of both farming and fishing (due to the impact of the Lekki Port) has meant a decline in market vending

100 Tagliarino, et al., 2018
101 Guardian Nigeria, 2024
102 Giannecchini & Taylor, 2018
103 Gardner, 2018
104 Lippolis, 2022
105 Cowaloosur, 2015
106 Hamuth, 2017
107 Ugbodaga, 2015
108 Adeyemo, 2023

and the loss of women's autonomy, which has indirectly contributed to cases of domestic violence.[109]

Issues around land acquisition may create hostilities towards Chinese developers and investors among host communities, even though it is typically the host country government that is responsible for land acquisition, resettlement and compensation. Extortion or violence by dispossessed locals may target Chinese firms; zone construction and occupation can be extensively delayed; and local criminal gangs or even local officials may engage in defrauding investors, as in the case of Namanve Industrial Park in Uganda.[110] During the process of dispossession, competing authorities and complex negotiations with communities, middlemen, developers and officials create multiple opportunities for corruption, which can imperil the smooth establishment and operation of the zone as well as leading to long-term ill effects for those affected.[111]

4.3 In-migration

High levels of un- and under-employment generally within African countries, particularly among large populations of young people, as well as existing regional inequalities, create a flow of people towards any industrialising spaces, such as China-associated EDZs. This is compounded by a common preference on the part of industrial employers, both Chinese and from elsewhere, for the recruitment of non-locals from poorer regions of the host country, as such migrants are seen to be more willing than locals to work hard for low wages, are dependent on their wage to sustain their accommodation near the zone and are less likely than locals to engage in any form of labour agitation. This pattern mirrors China's own development path, in which massive waves of rural–urban labour migration were triggered by industrial development in the eastern provinces, including in SEZs.

Such large-scale in-migration by young people from poorer regions, often of different ethnic groups from the local communities, can have significant impacts on livelihoods, social cohesion and ethnic tensions in the areas around zones. Yet this aspect of zone-related development has been largely overlooked by most studies, which tend to concentrate more broadly on the number of jobs created. This is compounded by a lack of data on internal migration for most African countries, making it difficult to establish patterns of movement.

Large-scale in-migration was found through on-the-ground fieldwork in both in-depth case study zones: Lekki Free Zone in Nigeria and Liaoshen Industrial Park in Uganda. In Lekki, most factory workers are migrants from northern conflict-prone states of Nigeria.[112] Though many migrate spontaneously in search of jobs, tribal and ethnic ties may also play a role in recruitment strategies of firms, especially those with specific local linkages or who hire through local recruitment agents. For example, it was widely reported that the Dangote oil refinery, owned by Nigerian businessman Aliko Dangote, hires primarily from Hausa communities in Kano State, his own place of origin.[113] This in-migration and preferential recruitment was a source of resentment among local people, especially since (as is common for EDZs) the promise of job creation was a major incentive for locals to vacate lands for zone construction.[114] Similarly, in Cameroon, the displaced villagers of Lolabé were disappointed when Kribi Port did not hire locals, instead opting to hire better-qualified migrants from other parts of Cameroon. This was contrasted with French companies that visited nearby villages to prioritise filling positions with locals, whereas CHEC, the Chinese firm building Kribi Port, filled the positions through an online public listing. This created tensions between the displaced locals of Lolabé and migrants from other parts of Cameroon.[115]

Similarly, in Uganda's Liaoshen, there has been a high degree of in-migration, including from war-torn neighbouring countries. Although most factory workers in the zone are migrants from poorer and less secure districts in the north of Uganda, who have migrated spontaneously looking for work, it was also reported that the landowner has brought many people from the Acholi, Karimojong and Lugbara tribes of Northern Uganda, to provide labour in the zone, which is located in the heart of Buganda, the home of the Baganda tribe. Tensions between northern and southern ethnic groups in Uganda date back to the colonial period, when northern tribes were relied on primarily as surplus labour and military recruits; current labour recruitment thus has the potential to reproduce and possibly exacerbate long-standing ethnic tensions.[116] In Hawassa in Ethiopia, climate change, declining agricultural incomes and lack of government support have led to the migration of thousands of young women from small towns and rural areas to find work in the zone.[117]

109 Interviews with locals and local NGOs, Lekki Free Zone, Nigeria, February 2024
110 New Vision, 2018
111 Interviews with locals and local NGOs, Lekki, Nigeria, February 2024
112 Interviews in Lekki, Nigeria, February 2024
113 Interviews with NGOs in Lagos, Nigeria, February 2024
114 Interviews in Lekki, Nigeria, February 2024
115 Schenkel, 2018
116 Wyrod, 2019
117 Mains & Mulat, 2021

By contrast, a 2018 study of Ethiopia's Eastern Industrial Zone suggests that large-scale, systematic labour migration has not yet occurred.[118] This may in part be because of lack of accommodation for migrant workers in and around the zone. In Botswana, the population of Gaborone has increased due to rural to urban migration resulting from industrial growth of the area, with migrants living in nearby towns such as Tlokweng, Gabane, Gaborone North and Phakalane and commuting for work.[119]

4.4 Inequality

Urbanisation, dispossession and in-migration can heighten existing inequalities in and around EDZs. Faced with uncertain outcomes, those with higher social and economic status are better able to respond to such changes. For example, those who can prove ownership of land before EDZ construction – usually those of higher social standing within their communities – are in a better position to receive higher compensation during land acquisition. Landless labourers who toil on the land, by contrast, are unlikely to receive any form of recompense or resettlement. With increasing urbanisation, this pattern is exacerbated as those able to buy alternative land can make use of the escalating real estate market, such as by building rooms to let to incoming migrant workers and benefiting from associated housing price rises. Those with capital to invest can also engage in new commercial ventures, including offering services to the growing urban population. By contrast, those who have lost all access to land, and in the worst cases received no compensation, find it hard to find alternative stable incomes.[120]

This pattern is exacerbated in cases where industries show a preference for hiring migrants over locals, since landless locals find it harder to survive in the transitional economy in the absence of alternative employment opportunities. Meanwhile, migrants are exploited within factories and may also be subject to extortionate rent regimes in local communities. Where migrants belong to already marginalised groups, ethnicities or tribes, they are likely to have limited social power among the dominant locals. For example, in the Nigerian case, the Yoruba group is dominant in the Lekki region and therefore extracts higher rents from non-Yorubas.[121] In Uganda, in-migrants from northern Uganda have lower social status than Baganda locals in Kapeeka, and those who fail to find sustainable jobs in the factories of Liaoshen typically end up as domestic servants or farm labourers for wealthier Baganda.[122] All of those interviewed in the surrounding areas of both zones agreed that economic and social inequality had increased since the EDZs had been established.[123]

4.5 Health and safety

Rising urbanisation, inequality and rapid in-migration resulting from EDZ establishment may have negative impacts on health and safety. A rapid influx of migrants may put pressure on local healthcare facilities, especially if the zone is in a remote, rural or peri-urban area and cannot draw on a well-established urban healthcare infrastructure. Living conditions in migrant accommodation and informal settlements can be unsanitary, and the large numbers of young migrants living in informal accommodation may lead to new sexual freedoms, with the potential for unwanted pregnancies and the spread of sexually transmitted diseases, again posing a challenge to under-resourced local health facilities.[124]

Dietary changes may also create health problems, since the reduction in agricultural land typically associated with EDZ creation can result in new nutritional deficits, due to declining local availability of grains and fresh fruit and vegetables as well as changes in food-related production such as fishing, beekeeping and livestock farming. In Nigeria, this has led to a decrease in healthy produce for natives of Lekki, and increased the cost of food that has to be brought in from villages further from the zone.[125]

Moreover, other changes in livelihoods may also raise health-related concerns, particularly for already marginalised groups. Examples include the shift from farming to unregulated, informal waste collection work around zones, which carries a high risk of skin disease through contact with harmful chemicals; and the decline of the fish and farm produce trade in informal markets, which leaves local women out of work and subject to increased domestic violence by male family members.[126]

The safety of areas surrounding EDZs may also be compromised in the urbanisation process, with increases in tensions, crime and violence. In the case of Liaoshen Industrial Park in Uganda, villagers complained of thefts from their land by migrant workers, who found it difficult to exist on the low wages paid in the zone's factories.

118 Fei, 2018
119 Sebego & Gwebu, 2013
120 Interviews in Lekki, Nigeria, February 2024
121 Ibid.
122 Interviews in Kapeeka, Uganda, February 2024
123 Ibid.
124 Ibid.
125 Interviews in Lekki, Nigeria, February 2024
126 Interviews with locals and local NGOs, Lekki Free Zone, Nigeria, February 2024

Violent crime also increased, with fights between young men particularly common.[127] Village administrators complained that migrant workers who committed crimes within the zone were typically simply dismissed from employment and deposited at local police stations, but since factory managers failed to engage with formal crime reporting procedures, perpetrators were quickly released into local communities, where existing populations would then be subject to increased criminality.[128] In Nigeria's Lekki Free Zone, an economy of extortion had emerged in surrounding areas, where dispossessed locals would demand monies from the land's new owners and occupiers.[129]

Moreover, ethnic differences and inter-tribal competition tend to be exacerbated by increasing inequalities, differentiated hiring practices and rapid shifts in internal migration. Where host countries are emerging from protracted ethnic conflicts, enhanced ethnic tensions may be a particular risk. Migrants of ethnicities that differ from those of local communities find it harder to integrate socially in the destination areas, and even where long-term settlement occurs this may be in ethnic-based shantytowns and informal settlements. Where migrants are from a region of ongoing conflict, it is unlikely that labour migration will transfer economic and social gains to the origin community through remittance-sending and eventual return migration, in the way that contributed so successfully to the development of China's interior provinces during the 1980s–2000s.

4.6 Discussion

The construction of China-associated EDZs may bring both positive and negative social impacts for local communities, both of which are commonly overlooked in the overwhelming policy and academic focus on zones' national-level impacts. An analysis of the spatial features of EDZs, aided by GIS mapping, shows that zones are often well-connected to existing infrastructures, particularly in terms of transport, since this is essential to the distribution of goods produced in the zone. Local communities may benefit from these improved road and rail linkages, allowing greater local mobility and supporting commercial development of the area. Other local amenities may also be introduced with the development of EDZs, for example new hospitals and residential areas. Some zones, particularly those located more remotely and functioning more exclusively as industrial enclaves rather than town- or city-style developments, bring more limited public amenities, even after many years in operation.

Even where new amenities are created, it is essential to consider to what extent local communities have access to these. For example, where zones are walled and gated, it is unlikely that locals are able to access green spaces, and they may lose access to traditional routes through the zone area even where new roads are constructed. New health facilities, as well as schools and housing developments, may be targeted at wealthy investors and international migrants, and inaccessible to local populations.

The most problematic impact for most local communities is dispossession from land. Forced acquisition, inadequate, improperly distributed and delayed compensation, corruption in land titling and compensation, and resettlement are major problems for many zones that lead to resentment, protest, crime and outbreaks of violence. These issues typically do not stem from the role of Chinese developers, since it is usually local governments who manage land acquisition and compensation processes, and the failure to deliver adequate compensation rests with them. Indeed, interviews suggest that these land-related issues are a frequent headache for Chinese developers and a potential source of tension in their relations with local host states (and with locals more generally). Such issues can also cause major problems for investors and developers through extended land disputes and delays in construction.

For local populations, evictions and the related loss of typically agricultural livelihoods pose a major disruption to communities and exacerbate existing social and economic inequalities. Although secure factory jobs in EDZs are frequently promised to encourage locals to leave lands, for most these do not materialise. Instead, migrant workers are preferentially hired, and large-scale in-migration can bring new problems to host communities, including increased ethnic tensions, crime and inequality as well as pressure on health and other facilities. Though some locals may benefit from participation as landlords in a new rentier economy, or in new entrepreneurial activity, this tends to be the better-off, while more marginalised locals lose out. In the absence of well-developed support for dispossessed populations from local and national governments, it is likely that resentment, disputes and negative long-term localised impacts will remain a feature of EDZ development.

127 Interviews with locals in Kapeeka, Uganda, February 2024
128 Interviews with village leaders, Kapeeka, Uganda, February 2024
129 Interviews in Lekki, Nigeria, February 2024

5. Labour impacts

The overall impacts of China-associated EDZs in generating employment have undeniably been positive, with many jobs created for workers from the host country, even if total numbers have fallen short of expectations. However, in many cases labour relations are strained by abuse and exploitative work conditions. This usually reflects the broader labour conditions of the host country rather than a feature of specifically Chinese zonal development and investment; in some cases, though, distinctive forms of labour exploitation appear to have emerged. The types of jobs created are not limited to manufacturing jobs but also include related work such as catering services, where locals set up kitchens to sell lunches and meals to factory workers. In Uganda, such self-employment usually generates much better incomes than factory jobs, but is typically much more informal and less stable.

5.1 Recruitment

The recruitment methods for enterprises within China-associated EDZs differ from country to country, from zone to zone, and even from firm to firm. Some use labour contractors to bring migrant workers from remote regions, others rely on spontaneous labour migration but engage labour agencies to vet applicants at the zone, while others again use only direct recruitment.[130] Recruitment methods also vary according to the skill level of the work: for lower-skilled roles, relying on spontaneous migration and informal labour contractors is more common than for higher-skilled, white-collar jobs, which are more typically advertised online and via social media. In some of the cases, such as Ethiopia, vocational training programmes may be set up for students, with a view to recruiting them after graduation; while broader training schemes such as the Luban workshops have provided enhanced skills development in countries including Egypt, Cote d'Ivoire, and Djibouti.[131]

Recruitment methods and skills (and other) requirements are often somewhat opaque, with would-be workers queuing outside factory or zone gates to find a position, but sometimes finding themselves rejected for unknown reasons. There may be a level of recruitment coordination between firms manufacturing within the same zone, such that a worker who has been blacklisted by one firm is unlikely to be recruited by another.[132] In Nigeria's Lekki Free Zone, additional layers of vetting of workers are carried out through the zone management committee and local police stations in the EDZ.[133] In Uganda's Liaoshen, some locals complained that despite multiple attempts at finding work in the zone, and despite having the required level of qualification, they were not selected for a post.[134] Other workers reported having to pay bribes of around 10,000 shillings (USD 2.62), more than a day's wages, at the factory gates in order to be selected for work in the factory.[135]

5.2 Pay

A positive outcome of zone-based employment in the case studies investigated is that wages paid to host country workers in China-associated EDZs may generally be higher than wages in other factories outside the zones.[136] This is likely to be a function of the types of firms that invest, with relatively larger and more formal enterprises setting up in zones more often than smaller, less formal types of manufacturing. In less formal EDZs, typically smaller, privately owned and operated zones with no minimum size or investment requirements, low wages are likely to be more prevalent.

Moreover, many Chinese firms are known to pay better wages for assembly line and other work in comparison to domestic firms, even those that also manufacture within EDZs.[137] The reasons for this may relate to the fact that many Chinese factories are engaged in relatively more technical and precision-orientated manufacturing and assembly work, with a high speed of processing, and thus are keen to retain experienced workers beyond a minimal period. These findings contrast with many well-known works on the wages paid by Chinese firms in Africa. One of the most widely cited studies concludes that Chinese firms in Angola, Ghana, Namibia, South Africa and Zambia tended to pay lower wages compared to local and other foreign companies.[138] However, more recent large-scale surveys have indicated a higher, or at least not lower, rate of pay in Chinese manufacturing firms, with wage differences driven primarily by individual worker characteristics, location effects, and sector of employment.[139]

130 Interviews with firm managers and workers in Lekki Free Zone and Liaoshen Industrial Park, February 2024
131 Xinhua, 17 January 2024
132 Interviews with firm managers and workers, Liaoshen Industrial Park, February 2024
133 Interviews with zone managers, Lekki Free Zone, February 2024
134 Interviews with local villagers near Liaoshen Industrial Park, February 2024
135 Interviews with workers, Liaoshen Industrial Park, February 2024
136 Interviews with workers in Lekki Free Zone and Liaoshen Industrial Park, February 2024
137 Ibid.
138 Baah, Jauch & African Labour Researchers Network, 2009
139 Oya & Schaefer, 2023

Note that wages may be considered too low by workers for the hours, speed and type of labour, while still being above average for the sector or region. Surveys of Ethiopia's Eastern Industrial Zone suggest that average wages among Chinese factories there, though considered 'low' by workers, are well above reported national averages in the formal sector, and above sector standards.[140] Similar investigations in Ghana have indicated that Chinese manufacturers paid above the national minimum wage and above the rate offered by Indian comparator factories.[141]

In the Lekki Free Zone in Nigeria, casual low-skilled labourers in Chinese factories were paid daily wage rates of 5,000–10,000 naira (USD 5–9) with payment made on a weekly basis. Wages for workers hired on a longer-term basis ranged between 50,000 and 100,000 naira (USD 43–87) per month. This compares favourably to Nigeria's national monthly minimum wage of 30,000 naira (USD 26). If a casual labourer were selected every day for work, and took on additional overtime work wherever possible, he or she could earn around 90,000 naira (USD 83) a month.[142]

In Uganda's Liaoshen Industrial Park, workers started at rates of 3,000 shillings (USD 0.78) per day, which could go up to 10,000 shillings (USD 2.62) as workers gained skills and experience. Wages were paid fortnightly. Although Uganda has no national minimum wage, starting wages appear to be significantly lower than the United Nations Educational, Scientific and Cultural Organization's (UNESCO) estimated 2019–20 national average monthly wage for uneducated workers of 143,045 shillings (USD 26 at 2020 currency conversion rates). For workers on longer contracts, monthly salaries were up to 100,000 shillings (USD 26). The proportionally much higher rate of pay in Lekki compared to Liaoshen may relate to the location of the zones, with Lekki close to Nigeria's largest city of Lagos while Liaoshen is in a predominantly rural area, as well as to the nature of the zone, with the large, state-owned Lekki imposing minimum size and investment requirements on firms compared to much smaller, privately owned Liaoshen with no such restrictions on investors.

Moreover, although China-associated EDZs – particularly the larger, more formal zones with some degree of state ownership – may offer somewhat higher rates of pay than factories elsewhere in host countries, it is important to note that, owing to the typical EDZ legislation that qualified application of national-level labour law, there are often significant restrictions on the ability of workers to engage in any form of unionisation or collective bargaining, thus limiting workers' ability to negotiate higher wages.

5.3 Working conditions

Much literature on working conditions in Chinese firms in Africa tends to emphasise poor working conditions, which are often described as 'worse' than elsewhere, even in the absence of a clear comparator.[143] A number of third sector reports provide evidence on labour abuses including excessively long working hours, lack of written contracts, resistance to unionisation and frequent breaches of labour regulations.[144] However, other studies have suggested that Chinese firms may start operations with relatively poor working conditions but may then adapt to meet demands from worker organisations or from host country states.[145] It should also be emphasised that labour abuses take place within the wider context of labour market deregulation and privatisation following structural adjustment reforms across much of the African continent, which has led to the systematic weakening of labour institutions and mass casualisation of labour.[146] Many forms of poor working conditions are thus not unique to Chinese firms or China-associated EDZs, but can be also found in similar manufacturing facilities owned by host country or other foreign investors.

Interviews with workers in both Nigeria's Lekki Free Zone and Uganda's Liaoshen suggest a wide range of labour problems, including especially long hours with few breaks, an extremely fast pace of work, and (in Liaoshen) a range of punitive deductions from wages.[147] Workers complained of an extreme disciplinary and efficiency-orientated ethos in factories, inducing much stress among workers and leading to verbal and occasionally physical abuse from Chinese managers when African workers were unable to meet their expectations for speed and accuracy of labour. Reports from other Chinese projects in Africa suggest a similar dynamic, likely owing at least in part to factory managers' lack of experience with local workers new to low-paid, labour-intensive manufacturing.[148] While verbal abuse of workers may be a common feature of poorly regulated labour regimes, specific and sometimes racialised aspects of abuse in China-associated EDZs may be distinctive to African–Chinese labour relations. Even where physical violence was absent, many workers felt that

140 Fei, 2018; Thiel & Giese, 2015
141 Akorsu & Cooke, 2011
142 Interviews in Nigeria, February 2024
143 Oya & Schaefer, 2023
144 Carciotto & Chikohomero, 2022; Sun et al., 2017; Rounds & Huang, 2017
145 Lee, 2017; Tang 2016
146 Lee, 2017; Oya, 2019
147 Interviews in Lekki, Nigeria, February 2024
148 Wyrod & Chang, 2023

labour relations were demeaning, inhumane and lacking a sense of dignity.[149] Chinese managers were described as being 'like machines' and lacking any form of 'care for their workers'.[150] Persistent verbal abuse, sometimes with racist overtones, contributed to this issue, as did the frequent language barriers between Chinese managers, who almost universally lacked facility in local languages (both African and colonial languages), and host country workers. Errors in translation led to significant misunderstandings and mistakes in production, which were usually blamed on worker carelessness, leading to fines and further abuse.[151]

Lack of attention to occupational health and safety provisions was also a common feature of Chinese factory work in EDZs. On factory visits, personal protective equipment was found to be almost entirely absent, except for heavy-duty gloves in one factory in Uganda's Liaoshen Industrial Park. These, however, interfered with workers' speed of processing so they tended to remove them for fear of not meeting production and packing quotas. Other workers using a range of machinery had no face masks, ear defenders, protective clothing or even, in some cases, shoes.[152] Similar findings have emerged from Chinese manufacturing in Malawi and South Africa.[153] In Uganda, interviewed workers reported that industrial accidents were common, in particular due to the high speed of machine work, and that although factory managers would ensure that injured workers were taken to local hospitals where their medical bills would be paid, they would not receive further support or be rehired by the firm.[154]

These poor working conditions are not consistent across Chinese factories. The size of the firms and the management of the EDZ also play key roles. Larger firms, investing in larger zones with state involvement or ownership, are more likely to have corporate social responsibility (CSR) policies in place. Smaller firms, and those with less experienced factory managers, were more likely to experience verbal and even physical abuse of workers.[155] Yet, implementation of these standards in specific factories is dependent on local managers and may not be subject to any form of enforcement.[156] Moreover, local enforcement of labour standards by the host country state is also often deficient, especially where there are competing incentives in terms of the desire to attract further Chinese investment.

Much research suggests that the Chinese state policy of non-intervention in partner country politics results in deferring to the host country's practices for labour relations, rather than employing international standards.[157] Chinese firms in Egypt, for example, largely comply with existing Egyptian minimum standards, but do not go beyond these, instead taking advantage of the weak regulations governing labour conditions to extract more profit from labour-intensive manufacturing.[158] In the case of EDZs, the issue is compounded by the exemptions from various forms of labour regulation that typically accompany the establishment of zones and function as inducements to investors. In some cases, no entity is authorised to enter zones for labour inspection: for example, Nigeria's federal labour regulation agency was formally denied access to Calabar Free Zone.[159] In others, the usual labour laws may apply on paper, but regulatory bodies lack access in practice: for example, in Uganda's Liaoshen, due to the close connection of the ruling family with the zone, government bodies are unable to participate in labour inspections.

5.4 Dormitory labour

One frequent concern over the development of China's own SEZs from the 1980s onwards has been the emergence of a 'dormitory labour regime' in which rural migrant workers are housed in dormitories within the factory site, and are thus available 24 hours a day for 'just-in-time' production schedules, and subject to intense regulation of their non-working time.[160] There are signs that small-scale use of factory dormitories may be emerging in China-associated EDZs in both Nigeria and Uganda, with similar reports from Angola and parts of Ethiopia. Because of the preferential recruitment of internal migrant labour from other parts of host countries, as well as sometimes from other neighbouring countries, provision of dormitories has become a useful tool for zone manufacturers, particularly in more remotely located zones.

The construction of factory dormitories allows firms to attract workers who would otherwise not be able to find available or affordable accommodation in the areas around EDZs, as well as, of course, to impose strict labour discipline including ensuring that workers attend

149 Interviews in Nigeria and Uganda, February 2024
150 Ibid.
151 Interviews in Uganda, February 2024
152 Fieldwork observations, Uganda, February 2024
153 Chinguwo, 2009; Guliwe et al., 2009
154 Interviews in Kapeeka, Uganda, February 2024
155 Interviews with workers, Liaoshen Industrial Park, February 2024; Zong, 2023
156 Tan-Mullins & Mohan, 2013
157 Chen & Landry, 2018; Yankson et al., 2018; Chen, 2021
158 Springer et al., 2023
159 ILO, 2011
160 Smith & Pun, 2006; Goodburn & Mishra, 2024

work on time daily. In some cases, dormitories were first constructed from necessity. In Uganda, for example, EDZ dormitories were built as a result of COVID-19 restrictions, which prevented workers from travelling to and from work.[161] Elsewhere, such as in the Tigray region of Ethiopia, provision of dormitories was related to ongoing conflict that prevented migrant workers from reporting to work in the region's industrial parks.[162] Once dormitories have proved useful to firms, they are likely to be expanded. In Angola, a large proportion of Chinese manufacturing firms have now set up dormitories, operating a dormitory labour regime similar to China's own model, strengthening control of migrant labour and depressing demands for wage increases.[163]

The spread of Chinese dormitory labour regime practices in Africa is thus reminiscent of its Chinese counterpart, even though it is subject to the regulatory context of the host country and region. Since employment conditions in EDZs may be disconnected from local norms, regulatory frameworks and the possibility of labour unionisation, they tend to operate as semi-autonomous territorial units such that the rights of those who live (as well as work) within them become uncertain and unenforceable.

This is a particularly acute issue for migrant labourers who are often unfamiliar with local labour regulations, lack social support networks, and may not speak local languages, thus increasing their dependence on their employer. Firm managers become de facto governors of workers' living spaces as well as their working lives and may impose harsh restrictions on personal freedoms. In neither Nigeria nor Uganda were those who occupied EDZ factory dormitories permitted to leave during the working week, instead remaining within the compounds 24 hours a day from Monday to Saturday. Living conditions in the dormitories in Uganda were reported to be poor, with crowded quarters and indoor solid fuel stoves for cooking.[164]

However, failure to provide dormitories could also pose problems for some workers and firms. In Ethiopia's industrial parks beyond Tigray, factory dormitories have not emerged on the same scale, in part because the Ethiopian government has discouraged them on the grounds of preventing labour exploitation, instead expecting workers to find private accommodation. While this may benefit local communities through the emergence of a local rental economy as well as preventing excessive labour control by employers, in practice it has also led to recruitment difficulties, with a lack of suitable and affordable housing preventing some migrant workers from taking up positions.[165] The Ethiopian state has now announced plans to construct new housing for 2,000 workers in Hawassa Industrial Park.[166] It remains to be seen how this zone-based accommodation compares to factory dormitories in terms of labour control and affordability.

5.5 Discussion

Employment generation has been a major benefit of China-associated EDZs in Africa. In countries like Nigeria and Uganda, where around 70 per cent of the population is below the age of 35, youth under-employment has been a major issue that the establishment of economic zones has addressed. This has particularly benefited those from poorer regions who have migrated for work in the zones, rather than local populations who are not preferred for factory work. Moreover, it seems likely that much Chinese factory work pays as well as, or better than, available alternative sources of employment, and that wages in zones tend to be higher than those outside them. Almost all EDZ workers interviewed in both case study countries reported earning more after taking a job within a zone than they had been previously. This may vary between zones, however, with longer-established, larger, more formal EDZs with some degree of state ownership offering typically better wages than smaller, private, less regulated zones where there are less strict requirements for investment from firms.

While employment generation and, often, wages are appreciated by labourers, working conditions appear mostly poor. In Nigeria in particular, it was noticeable that labour conditions appeared much better in the Lagos Free Zone, which is not China-associated and hosts manufacturers from several global brands, compared with the China-associated Lekki Free Zone next door.[167] In Uganda's Liaoshen, labour abuses were common, including some practices distinctively associated with Chinese firms such as an expected speed of production that local workers found difficult, stressful and potentially hazardous, as well as a degree of racialised abuse. The emergence of a 'dormitory labour regime' in some EDZs also raises concerns about the exploitation of migrant workers in particular.

161 Interviews in Kapeeka, Uganda, February 2024
162 Sahlu, 2021
163 Oya & Schaefer, 2023
164 Interviews in Nigeria and Uganda, February 2024
165 Oya & Schaefer, 2023
166 Invest for Jobs, 2021
167 Field observations, Lekki, February 2024

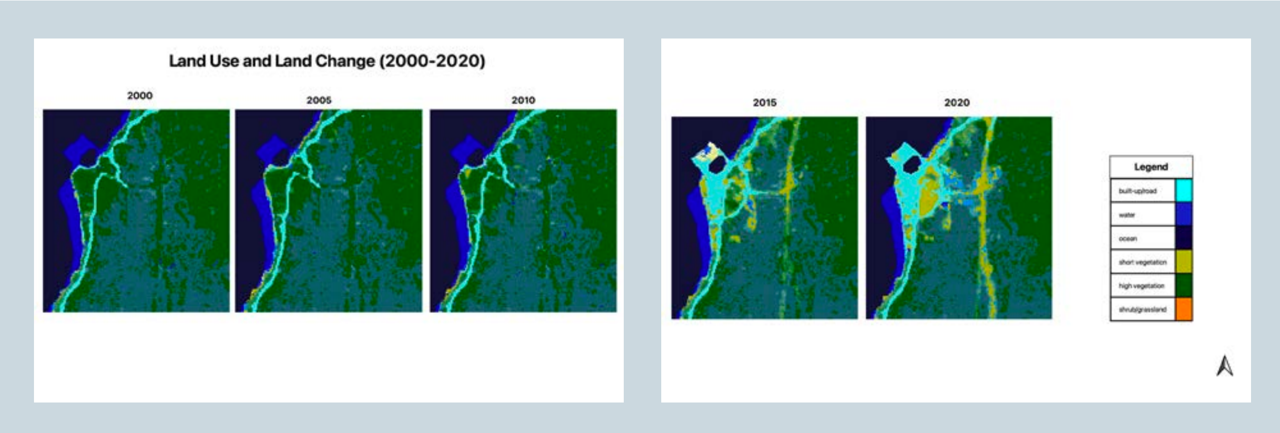


Image 6.1 Land use and land change for Kribi Deep Sea Port EDZ (2000–20). Source: GIS Mapping, King's College London

6. Environmental impacts

The setting up of EDZs requires large scale unfragmented land. In biodiversity-rich regions, it is difficult to demarcate such a space without causing negative effects. Therefore, while due diligence is required with environmental impact assessments (EIAs) being carried out, it is also crucial to take steps to mitigate any possible damages. However, it is expensive both monetarily and timewise, when the projects are expected to start soon with aims of helping the economy take off – the goal of economic development overshadows any consequences for the environment. Therefore, in the short-run there are significant damages to the environment, which have a tendency to become bigger problems if not tackled. In the case of China-associated EDZs in Africa, we see similar problems. African nations are particularly rich in biodiversity and industrial sites that border with Wetlands. Frequently, when the EIAs are carried out there is a lack of understanding of long-term impacts of some changes.

EDZs produce negative environmental impacts at all stages of their development, including in the construction phase, where the clearing of vegetation and building of factories and zone infrastructures may result in biodiversity loss, land degradation, air and water pollution, and use of fossil fuels to power machinery; in the operational phase, when climate emissions and industrial air, water and soil pollution is a major risk; and in the post-operational phase if the zone is abandoned and buildings, machinery and other resources are not disposed of adequately, thus continuing to contaminate their surroundings. These issues are not unique to China-associated EDZs, of course, but affect most such industrial projects across Africa and indeed the rest of the developing world.

6.1 Biodiversity changes

During the phase of construction of EDZs, building of new infrastructure without mitigation measures can interfere with ecosystem balance. This effect is particularly pronounced in deep sea ports, where a complex interdependency between human settlements and the ocean is disrupted. The Kribi Port EDZ (Cameroon) is an ambitious project that started in 2011 and will be completed by 2040, aiming to become a trading hub serving all Central African countries. However, Cameroon's one and only marine protected area, Manyange na Elombo-Campo National Marine Park, is located 30 kilometres away and is home to species of turtles that face escalating levels of threat: olive ridley (vulnerable), green (endangered) and hawksbill turtles (critically endangered).[168] New construction of infrastructure along the coast stresses the ocean, causing higher waves towards the mainland in recent years.[169] The beaches and related biodiversity are negatively impacted by such changes as well as the wildlife in the marine protected area, reliant on beaches and sea for lifecycle completion.[170]

The Port Authority of Kribi constructed a dike in 2014 which softened waves; however, it did not mitigate ongoing erosion, in which the coast has been shrinking by 2 metres per year since the port became operational.[171] While the dike has been effective in some parts that gained 15 metres of sand, other parts have lost just as much,

168 Toto, 2024
169 Ibid.
170 Romain et al., 2017; Okafor-Yarwood et al., 2020
171 Fendoung et al., 2022

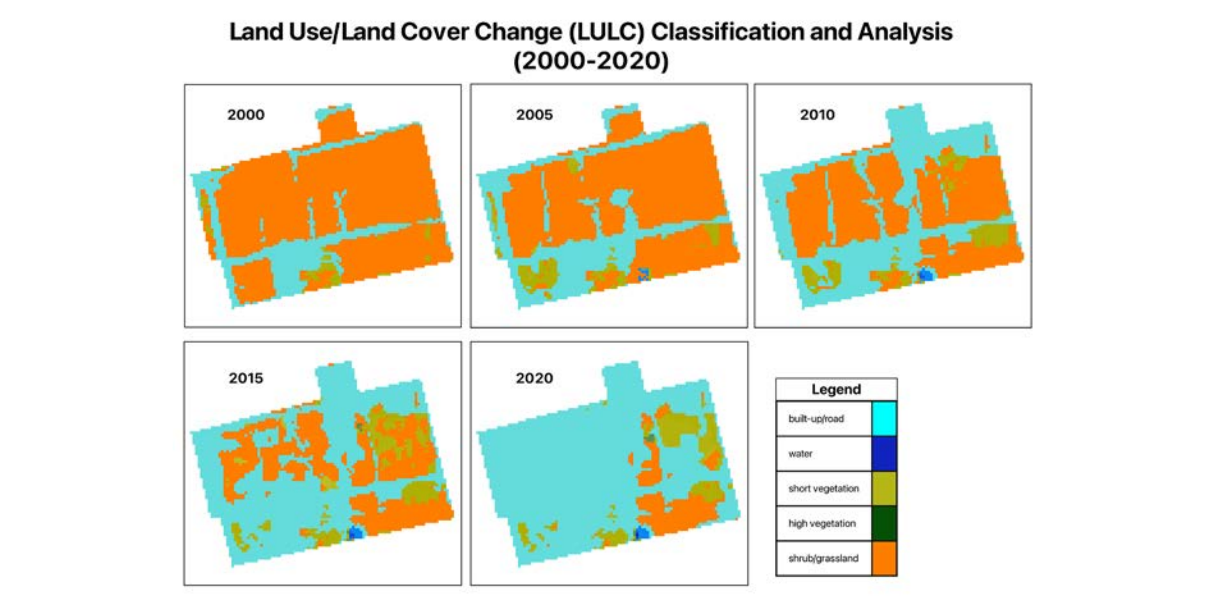


Image 6.2 Land use and land change for Hawassa Industrial Park (2000–20). Source: GIS Mapping, King's College London

creating a jagged coastline.[172] Coastal regions such as Kribi are particularly vulnerable to climate change and sea level rise, which can have serious detrimental effects. The coast is rich in protective mangroves; however, a rapid increase in human settlements as migrants from other parts of Cameroon arrive to work in the EDZ has put pressure on housing and fuel, both of which affect the mangroves through increases in sand-mining for construction and rapid consumption of mangrove wood for fuel.[173] The Lekki Deep Sea Port has witnessed similar changes, covered in detail in Section 9. Coastal erosion in Lekki and Kribi has increased frequency of flooding.[174] Image 6.1 on page 41 shows land use change in the Kribi Deep Sea Port in Cameroon.

Other types of inland EDZs also face challenges with biodiversity. Liaoshen Industrial Park area is near inland wetland areas, where there have been complaints of sand mining for raw materials in the tile-making factories of the zone as well as for the booming real estate market in the villages, as increasing numbers of migrants arrive to work in the area.[175]

6.2 Pollution and health hazards

Industrial waste and pollution are a problem globally, with developing countries often lacking the resources, equipment and mechanisms for proper treatment and disposal of effluents and discharge. However, in the case of EDZs that are often close to (indeed, give rise to) urbanisation and population growth, harmful toxins can cause long-term damage to vulnerable populations. In Ethiopia, the Hawassa Industrial Park houses several textile factories that discharge waste into the Boicha stream and the nearby biological lagoon. The populations living downstream are affected as they use the water for drinking, irrigation and domestic purposes.[176] Cattle also drink from these polluted streams, affecting dairy produce.[177] The levels of heavy metals are high enough to cause neurological damage, kidney failure or cancer in people who consume fish or water from these sources.[178] Factories in Hawassa have been found to contribute significantly to the pollution of streams.[179] A lack of regular monitoring of the soil prevents proper evaluation of the effects. Image 6.2 on page 42 shows how the Hawassa Industrial Park has expanded close to the water body in the south.

172 Toto, 2024
173 Ibid.
174 Interviews in Lekki, Nigeria, February 2024
175 Interviews in Uganda, February 2024
176 Bekele et al., 2021
177 Ibid.
178 Bekele et al., 2020
179 Ibid.

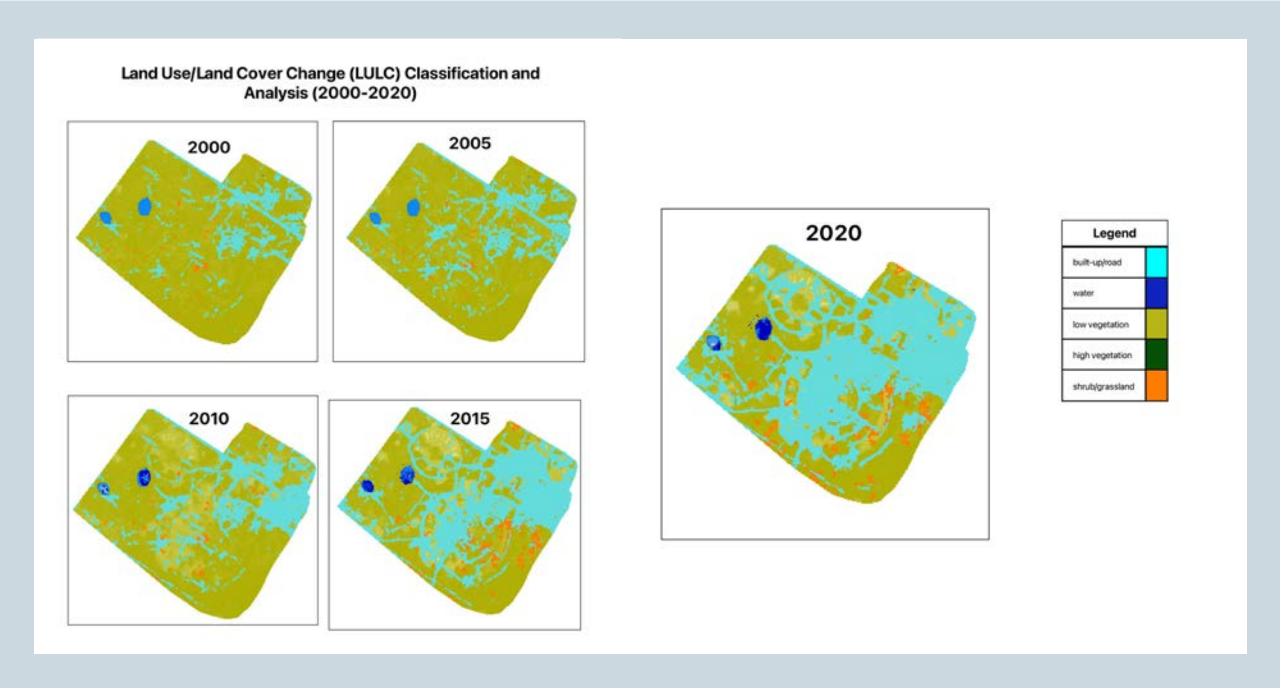


Image 6.3 Land use and land cover change for Luanda-Bengo EDZ (2000–20). Source: GIS Mapping, King's College London

In the case of Djibouti, the port and FTZ are mostly surrounded by desert area. However, an increased traffic in shipping vessels causing excessive smoke pollution has decreased air quality, and the local port authority is reportedly struggling to manage air pollution.[180] In the case of Kribi (Cameroon), too, there have been similar reports of groundwater pollution, impacting on produce and the health of populations.[181] Rising oil pollution in sea waters has also led to the decline of three endangered species of turtles in Kribi.[182]

6.3 Food security

While there are direct negative health-related outcomes due to water, soil and air pollution from the release of toxic untreated waste from industries, there are also indirect outcomes for health due to the lack of fresh and nutritious food. The EDZs, like most large-scale industrial projects, are developed on previous farmlands or plantations, with farmers typically being given monetary compensation (see Section 4 on problems in managing fair compensation). The reduction in farming in the area as well as impacts on fishing create a change in people's dietary patterns, with inferior quality of food replacing fresh produce. In the case of Cameroon's Kribi Deep Sea Port, locals saw a decline in fishing of nearly 50 per cent in some cases due to port infrastructure making the sea more turbulent.[183] In the case of Lekki Deep Sea Port and EDZs, similar changes in people's livelihoods have led to rising food prices.[184] In the case of Luanda-Bengo SEZ, shown in Image 6.3 above, there has been a drastic reduction in farmland as it is replaced by built-up areas of the zone. The decline in farming also affects dietary changes and nutrition in neighbouring towns that were dependent on farmlands where the EDZs are established.

The only exception in our sample is Uganda's Liaoshen Industrial Park, which involved extensive agro-processing and has seen an increase in farming at the district level (even as farming has declined on the land where the industry is set up).[185] Most local farmers find it beneficial to continue agricultural production since agro-processing factories will pay a good and relatively stable price for crops (and since the expansion of the population through in-migration also provides a market for local fruit and vegetables in particular).[186]

180 Crossley, 2023
181 Paterne et al., 2021
182 Toto, 2024
183 Ibid.
184 Interviews in Nigeria, February 2024
185 Interviews in Kapeeka, Uganda, February 2024
186 Ibid.

6.4 Discussion

The environmental Kuznets curve is an inverted U-shape graph denoting a rise in environmental degradation accompanying a rise in economic growth until a certain level of GDP per capita, when society begins to prioritise the environment.[187] Variations notwithstanding, Western countries have followed broadly similar trajectories and, in some cases, have outsourced polluting industries to the developing world. Therefore, problems of pollution are expected with industrialisation and are difficult to mitigate fully. However, with climate change there is a threat of irreversible damage, including extinction of endangered species or a rise in sea levels that could drown coastal populations. While economic development is the main goal of the EDZs, then, long-term, unintended negative consequences for the environment must be mitigated. Three main concerns are raised in this section. First, there is a significant risk to biodiversity as seen in cases where the EDZ is close to water bodies or wetlands, while ports are vulnerable to sea level rise. Even the process of construction and operation of an EDZ can cause destruction of flora such as mangroves, making populations more vulnerable to extreme climate events such as flooding. Second, soil, air and water pollution can cause health hazards in the populations living downstream from the zone or in its vicinity, and is not limited to the geographical area if the produce such as fish is exported worldwide. In the long term it may even reduce the nation's comparative advantage in agriculture or fisheries if products are found to be toxic. Third, the overall reduction in farmland raises questions of unsustainability as prices of staple foods rise, posing a risk of malnutrition in the absence of a good-quality diet.

7. Political and sovereignty impacts

Most analyses of the implications of China-associated EDZs in Africa have focused on the economic impacts, with only a more limited attempt to scrutinise the political and sovereignty-related impacts of China's role. There has of course been extensive study of China's geopolitical ambitions across the continent, and the implications of these for the rest of the world, but little of this has been directly connected with economic zones. Yet the tendency of China to exacerbate, or at least not to mitigate, governance problems can be observed in the development of EDZs, in particular through the ways in which Chinese developers interact with host country states, individuals and systems. Not only do China-associated EDZs have implications for host country corruption and patrimonialism, they also have distinctive but commonly overlooked impacts on relations between different parts of host country states. Moreover, the presence of actors associated with the Chinese state in providing security services, and constructing and operating ports, raises questions about the potential undermining of local state sovereignty.

7.1 Intra-state and centre-local relations

Conceptually, an EDZ is subject to different and usually liberalised regulatory frameworks. At least some of the taxation laws, customs laws, labour regulations and/or environmental compliances are reduced to attract foreign investment. Aside from the challenges this poses in terms of economic, labour and environmental impacts, in the case of China-associated EDZs in Africa, a further, underexplored consequence is that the semi-autonomous existence and operations of zones can place strain on the federal and broader institutional structure of host states.

In the case of Huihong Development Zone in Nigeria, in 2007, federal labour inspectors were turned away from entering the zone, and warnings were issued from the national NEPZA to the Federal Ministry of Labour not to interfere in the functioning of the zones, since this would otherwise violate the clause of the Federal Export Processing Zones Act that directs maintaining harmonious relationships.[188] A clear conflict of interest exists between NEPZA, which aims to attract and support international investors, and the Ministry of Labour, which is tasked with ensuring labour compliance. Pressure from the former as well as the more limited institutional capacity of the latter ensured that the issue was dropped and no further labour inspections were conducted.[189] Here, existing tensions between two national-level state institutions, the parastatal

187 Stern, 2004
188 ILO, 2011
189 Ibid.

body NEPZA and the Ministry, were exacerbated by the presence of the EDZ.

Other instances of intra-state conflict over EDZs can occur between central and subnational levels. Lekki Free Zone, also in Nigeria, was created in 2006 at the initiative of the Lagos state government, under the former state governor Bola Ahmed Tinubu. The Lagos state has an existing history of conflict with the Nigerian federal government, most notably in legal wrangling over jurisdiction of waterways, which required adjudication by Nigeria's Supreme Court.[190] Since the Lagos state government has a significant stake in the ownership of Lekki Zone, and engaged directly with China's central government over the conceptualisation, funding and construction of the zone, it can thus be seen to have bypassed the Nigerian federal state in an important area of inter-state relations. The Ogun Guangdong Free Zone, a China-associated zone in Nigeria's Ogun State, demonstrates a similar pattern, having been established in 2008 between the subnational Ogun state government and the China African Investment Company (CAIC), led by China's Guangdong provincial government.[191] In this scenario, then, collaboration between China-associated EDZs and host country subnational governments can serve to distort centre-local relations and weaken institutional mechanisms.

7.2 National and local oversight

In addition to cases of weakened federal regulatory mechanisms, set out above, China-associated EDZs can evade host country government oversight at both local and national levels. This may be particularly the case for private zones, as in the case of Liaoshen Industrial Park in Uganda, where a private company owned by a Chinese national was able to register in Kampala and thus to present his firm's involvement as an example of Ugandan investment.[192] This was aided by the fact that the land on which the park is built was owned by an important Ugandan political and military figure, with whom the company had good personal connections, facilitating a range of informal exemptions for the EDZ and marginalising the role of both local and central government institutions. The location of the zone next to military barracks controlled by the landowner, and the deployment of army personnel to guard individual factories, means that regulatory authorities are unable to enter the premises without invitation. Local district officials complained of lack of access to the zone and that its construction had not factored in broader local development plans; and while national-level ministries could visit the zone by appointment, they lacked access to key figures about its economic outputs.[193]

In this case, both national and local state government bodies can play only a very limited role, and the association of the zone developer with a key political figure allows the bypassing of formal institutional mechanisms. This can have economic as well as political consequences. Since the private developer has sole jurisdiction over the cost of plots within the zone, these may be set at prices that are appealing to Chinese firms, some of which have benefited from low-interest loans from within China, but which are unaffordable to domestic investors. The zone then becomes occupied almost exclusively by Chinese factories, many directly associated with the zone managing director, reducing the potential for positive spillovers for Ugandan business.

There is evidence that similar practices of evading oversight take place in other host countries, and by Chinese state-owned or state-connected firms as well as small private enterprises. Findings from Angola, for example, point to Chinese state-owned entities posing as private firms, acquiring numerous companies within a complicated organisational structure to gain control of Angolan assets 'unnoticed'.[194] Again, the case indicates that aspects of the China–host country relationship can be organised through enclaved and semi-autonomous institutions that are detached from national institutional processes.

7.3 Local mediators and corruption

The role of local, host country mediators is important in allowing Chinese developers to navigate the complexities of setting up EDZs. Foreign investors typically rely on well-connected local politicians or individuals who can enable access to informal channels of negotiation, thus reducing red tape and facilitating the smooth running of operations. They may also help Chinese developers in knowing whom to bribe and how to navigate the local corruption landscape. While some research suggests that the presence of Chinese firms increases host country corruption,[195] case-study analysis reveals that Chinese developers are often highly adaptable and willing to work according to the local practices. If the existing system is corrupt, developers rely on local mediators to manage these interactions on their behalf.

190 Ejekwonyilo, 2024
191 Amusan & Nel, 2023
192 ULSIP, 2018
193 Interviews in Kapeeka, Uganda, February 2024
194 Mohan, 2014
195 Isaksson & Kotsadam, 2016

The use of local mediators may further weaken domestic accountability structures. In Ghana, for example, Chinese investments appear to have had little discussion with related-sector host country companies or within government, but to have been facilitated through the development of relations with local elites.[196] In Nigeria, training opportunities were provided by Chinese investors, nominally for local populations displaced by the zone, but in fact went to the children of local officials.[197] In Namibia, a similar pattern of Chinese scholarships for the children of officials was observed.[198] While Chinese investments are not the source of these patterns of corruption, and it should be emphasised that host country actors are key to directing the flow of benefits in selected directions, China's role may nonetheless be seen to enhance existing forms of patrimonialism at local and/or national levels.

7.4 Policing and security

Many countries of sub-Saharan Africa are either experiencing conflict or are post-conflict. These host country situations may pose challenges to industries, especially where foreign investors have been targets of attack by host country actors, including kidnappings, terrorist attacks and anti-foreign violence. Several of these attacks have specifically targeted Chinese nationals, including in the Central African Republic, Uganda, Nigeria, Angola and elsewhere. Some Chinese industries have therefore turned to hiring private security companies from China to offer protection for individuals and assets, while China-associated zones may additionally rely on host country private security services as well as national police or army protection. The deployment of Chinese security firms in Africa lacks a strong regulatory framework, thus posing risks to African citizens and to host country security and sovereignty, while the engagement of host country security services raises additional questions about their responsibilities to foreign actors versus national citizens.

Multiple forms of Chinese private security firms operate in Africa. Leading firms tend to operate in relatively stable regions such as Egypt, Kenya and Uganda, and are heavily regulated by the Chinese (though not the host country) state. There are also numerous smaller Chinese private security companies, some active in more volatile environments, which are typically less regulated by Beijing.[199] Nonetheless, even these smaller outfits are closely connected with the Chinese state, since Chinese regulations mandate that at least 51 per cent of their capital must be state-owned.[200]

Although Chinese security services are most associated with guarding extractive industries such as mines, there is evidence that they are also employed to protect EDZs in at least some countries, where they tend to work in configuration with local security apparatuses. In South Africa, Chinese security companies commonly work through local subsidiaries, whereas in Kenya they work directly with local security forces to whom they provide supplementary pay, training and support.[201] Such collaborations have at times been problematic: in 2018, two Chinese nationals were arrested in Zambia for giving illegal military training to a local security firm.[202] Chinese security forces have also been implicated in putting down labour disputes in Zambia,[203] as well as using military-grade equipment in Kenya.[204] The proliferation of such forces has policy implications for Africa, as it undermines host country governments' role as primary security providers and heightens the risk of human rights violations.

China-associated EDZs also tend to employ host country private security forces, both at the zone level and sometimes also at the individual firm level. In some cases, these private sector security firms operate in tandem with local police and/or military protection. In Nigeria's Lekki Free Zone, multiple levels of security were deemed necessary to protect investors, including a dedicated police station within the zone, a Nigerian private security firm employed to patrol the zone, and individual security agents hired by firms to guard their factory premises.[205] The overall effect is that the zone functions like a fortified compound, preventing integration with local communities and depriving them of access to the zone's amenities. There may also be potential tensions between these various layers of security services, each acting within the same jurisdiction but with different regulations and reporting structures. By contrast, in China-associated EDZs in Uganda, private security services are not commonly found, since state military protection was formally granted to Chinese investors in 2018 after a series of attacks on Chinese nationals. This again serves to deny access to the zone to Ugandans and has prompted criticism over differential treatment of locals and Chinese.[206]

196 Mohan, 2014
197 Interviews in Lekki, Nigeria, February 2024
198 Alden, 2005
199 Arduino, 2023; Nantulya, 2020
200 Nantulya, 2020
201 Ibid.
202 Africa News, 2019
203 The News Day, 2018
204 CitizenTV Kenya, 2018
205 Interviews in Nigeria, February 2024
206 BBC, 2018

7.5 Ports

A feature of a significant minority of China-associated EDZs is the use of Chinese SOEs to construct and sometimes operate port infrastructures across Africa, thus tying together China's economic and maritime goals for the continent. The bulk of China's port activity has been focused on construction rather than operation, but certain key Chinese actors – particularly the state-owned China Merchants Group – also play a key role in operating at least nine ports in Africa, with more than one port in each of Djibouti, Morocco and Tanzania.[207]

Port expansion and rehabilitation projects are a crucial part of promoting African development, with 90 per cent of the extra-continental exports dependent on ports.[208] Since most EDZs in Africa struggle to enhance their export capacity, in part because of weak transport infrastructures, Chinese investments that improve port development may play a major role in host country and broader regional growth, and are therefore highly attractive to African governments, especially in the absence of other sources of funding for such projects. Port projects therefore not only fuel African growth, but also tend to reinforce China's image as a development partner, which boosts its political influence.

Research suggests that China Merchants Port Holdings (CMPH) has aimed at replicating the 'Port-Zone-City' model first developed from the late 1970s and 1980s in Shekou, in China's Shenzhen SEZ, in African host nations such as Djibouti. Such ports are a strategic feature of Chinese zones, as they allow for naval presence of the Chinese state. In the case of Djibouti International Free Trade Zone, China opened its first naval base in the associated port in 2017, with drills being carried out since then.[209]

However, despite concern over the potential impacts for local sovereignty of China's involvement in port operations, it is interesting to note that some Chinese SOEs take a relatively low-key role in the actual operation of ports. In Lekki Deep Sea Port in Nigeria, for example, the contract for port operation went to a French firm, CMA-CGM, rather than to CHEC, despite the latter's substantial stake in the port's ownership and having led the construction. The desire for commercial profitability, to be gained from the appointment of an experienced European port operator, thus outweighed any strategic desire for greater Chinese state involvement. Moreover, the port project involved no inter-governmental collaboration, being essentially a collaboration between other non-Chinese international firms, CHEC and the Lagos state government.[210]

7.6 Discussion

Broadening analysis of China-associated EDZs beyond the economic dimension raises a range of questions about the political and sovereignty implications for African host country states. It appears that the involvement of Chinese developers in negotiations with local states and host country mediators, especially when combined with the semi-autonomous nature of most economic zones and typically weak governance mechanisms, can strain the institutional structure of host states, potentially exacerbating conflicts between different levels and bodies within African governments.

Moreover, where China-associated EDZs exacerbate, or at least do not mitigate, governance problems, there may be negative implications for host country corruption and increasing inequality connected with EDZs. Finally, the presence of Chinese actors in security services as well as in port construction and operation raises concerns about the undermining of local state sovereignty, though it is apparent that commercial factors such as the protecting of Chinese assets and the profitability of ports tend to outweigh solely political objectives in much Chinese decision-making.

207 Herlevi, 2021
208 Devermont et al., 2019
209 Xie, 2023
210 Chen, 2021

Image 8.1 Lekki Free Zone gateway. Source: Author's photograph

Figure 8.1 Lekki Free Zone ownership structure
Source: Author's diagram

In-depth case study 1: Lekki Free Zone, Nigeria

The Lekki Free Zone is located in the Ibeju-Lekki area, around 60 kilometres to the east of Lagos city centre on a sandy peninsula with the Atlantic Ocean to the south and Lekki Lagoon to the north. The total area is a huge 16,500 hectares, of which around 3,000 hectares (the 'southwest quadrant') is formally operating as Lekki Free Zone. With substantial investment from China's central state, and as one of Africa's few official OETCZs formally designated by China's Ministry of Commerce, Lekki is a significant and high-profile example of a China-associated EDZ.

8.1 Ownership and establishment

The proposal for an EDZ in Lekki did not come from China. The free zone was first suggested in 2004 by former governor of Lagos State, Bola Ahmed Tinubu (now President of Nigeria). Tinubu visited Beijing in May 2006 seeking Chinese funds to establish the Lekki Free Zone, with the total project cost estimated at USD 400–500 million.[211] The Chinese side agreed to invest USD 200 million in the zone, and a Chinese consortium, the China–Africa Lekki Investment Company, was set up.
The consortium comprised four Chinese state-owned shareholders (see Figure 8.1): China Railway Construction Corporation, China Civil Engineering Construction Company, Nanjing Jiangning Economic and Technology Development Company (developers of a zone in China) and the China–Africa Development Fund (solely funded by China Development Bank, a Chinese state policy bank). This consortium owns a 60 per cent stake in Lekki Free zone.[212] The other 40 per cent is owned by the Lagos state government, both directly (20 per cent) and through Lekki Worldwide Investment Ltd, a privately held company set up by the Lagos State Government Development Corporation (20 per cent).

The zone partnership is managed by the Lekki Free Zone Development Company, a joint venture with a 50-year lease on the site. Its leadership team consists of three Chinese nationals (Managing Director, Commercial Controller and Engineering Controller) and two Nigerians (Deputy Managing Director and Controller). Of the broader management staff, 14 are Chinese and 30 Nigerian – an unusually high proportion compared with other overseas cooperation zones, and perhaps a result of the comparatively large ownership stake of the Lagos state government.[213] Most Nigerian staff are sent to China

211 World Bank, 2012
212 LFZDC, 2023
213 Bräutigam & Tang, 2011

Figure 8.2 Map of Lekki Free Zone showing planned development of the Lekki Peninsula. Source: Lekki Free Zone Development Company

for training on SEZ management.[214] Lekki Free Zone was approved as an official OETCZ by the Ministry of Commerce of China in 2007, indicating its importance to the Chinese government. It is also promoted by the Chinese side as having the largest development area of any overseas cooperation zone.[215]

However, some of the figures usually quoted for the zone – even by the OECD and World Bank – are misleading.[216] Although the total land area allocated for development in the region is around 16,500 hectares, and promotional maps show this full area, in reality only a small proportion has actually received Chinese investment (see Figure 8.2). The operational area is Phase 1, known as the southwest quadrant, and is around 3,000 hectares in size. The other three quadrants are not managed by the Lekki Free Zone Development Company and do not have Chinese state investment.

Instead, the southeast quadrant hosts Nigeria's Dangote oil refinery and fertiliser plant, and Lagos Free Zone, a successful private zone operated by Singapore-based Tolaram Group. Lekki's new deep-water port is attached to this zone. In the northwest quadrant, Alaro City, a high-end mostly residential development is being constructed by international firm Rendeavour and the Lagos state government. The northeast quadrant is largely still undeveloped land.[217]

8.2 Construction and planning

Construction of Lekki southwest quadrant began in 2007 after a delay due to disagreement between the Chinese and Nigerian sides over financing and operations. The Lagos state government had anticipated that all Chinese funding would be delivered up front, but the contract did not specify that. By April 2009 only USD 50 million had been provided, forcing Lagos State to allocate USD 67 million from its 2009 budget.[218]

Although Phase 1 had originally consisted of the development of 1,176 hectares over five years with a start-up area of 780 hectares, this plan now had to be revised and was scaled down considerably to a start-up of 154 hectares.[219] The southwest quadrant is now projected to be completed by 2025 rather than the original date of 2014, later revised to 2018.[220]

214 Interview with Lekki zone management staff, February 2024
215 China–Arab States Expo, 2023
216 World Bank, 2012; Egbula & Zheng, 2011
217 Interviews with Lekki zone managers, February 2024
218 Mthembu-Salter, 2009
219 World Bank, 2012
220 LFZDC, 2023

Figure 8.3 Lekki Free Zone southwest quadrant masterplan. Source: Lekki Free Zone Masterplan

In 2008, complaints from Lagos state government over perceived construction quality under the Jiangning Economic and Technology Development Company led to a dispute within the Chinese consortium, halting construction and prompting direct intervention from Beijing's Ministry of Commerce.[221] The consortium was unilaterally restructured by the Chinese state to give China Civil Engineering Construction Company leadership of the project with a 75 per cent stake, under an experienced Chinese head who had worked in Africa since the 1970s.[222] Around 200 Chinese engineers and technical workers were assigned to the project, and construction resumed in 2009. Although Chinese reports suggested 80 per cent of construction workers were Nigerian, there was initially no cap on the numbers of Chinese construction workers who could be employed on the project. A 2009 agreement was negotiated by Lagos state government that at least 40 per cent of the construction workforce should be Nigerian. As a result, many Chinese construction workers were sent home.[223]

The Master Land Use Plan for Lekki southwest quadrant was designed by China's state-owned Shanghai Tongji Urban Planning and Design Institute, and loosely modelled on the Jiangning Economic and Technology Development Zone in Nanjing.[224] In contravention of Nigerian law, this plan was completed only in 2010, three years after construction began, and was provided only in Chinese.[225] The plan was developed with very limited input from the Nigerian side, beyond an insistence that the quadrant should comply with the broader development plan for the Lekki peninsula (including the other three quadrants), designed in 2009 by Lebanese consultants Dar al-Handasah.[226] The layout of the Lekki Free Zone thus represents a typical Chinese-style development plan, planned by Chinese urbanists and executed by Chinese companies. Under the slogan 'one axis, six parks', the quadrant is based around a symmetrical central axis with an exhibition centre, large plots with substantial setbacks, and a man-made lake (see Figure 8.3). In the promotional literature, all reference pictures for future buildings are Chinese.

The development of Lekki's southwest quadrant accelerated after 2012, with the completion of 14 kilometres of internal roads, water supply from six bore wells and power supply from a 1,750-kilowatt diesel generator. The quadrant aimed at housing light manufacturing, textile production, warehousing, logistics and car assembly, as well as real estate development. By 2016, 'six connections and one levelling' had been achieved, including electricity, water, gas, roads, port access and communications, as well

221 UNDP, 2015
222 Mthembu-Salter, 2009
223 Ibid.
224 Interviews with Lekki Free Zone managers, February 2024
225 Lawanson & Agunbiade, 2018
226 Interviews with Lekki Free Zone managers, February 2024

as site levelling. The first Chinese firms took part in ground-breaking ceremonies and factories began to be erected.[227]

A new airport for Lekki was planned from 2012, as well as a light rail line from Lekki to the mainland, to be funded through private–public partnerships estimated at a cost of at least 1 billion USD.[228] Neither has yet materialised.

8.3 Evictions and resettlement

A major area of contention throughout the construction of the Lekki Free Zone has been the compensation and resettlement for affected local communities. Okunraiye, Tiye, Mobido and 23 other villages on the Lekki Peninsula owned lands that began to be forcefully acquired by the Lagos state government from the early 2000s when the Tolaram-run Lagos Free Zone was initiated, five years before the involvement of Chinese investors or the initiation of the Lekki Free Zone.[229] Expropriation expanded further with the development of the Chinese-funded southwest quadrant, and while Chinese investors and the Lekki Free Zone Development Company relied on the Lagos state government to provide appropriate compensation and resettlement for affected locals, this was not forthcoming. Protests and demands for compensation have led to outbreaks of violence, including most notably the fatal shooting of the Lekki Free Zone general manager in 2015, and discontent continues to rumble.

In the early 2000s, when the Lagos state government sought to force people from their farmlands and homes for ‘overriding public interest’, this dispossession was resisted. The state government was pressed to negotiate with community representatives:[230] an MoU was signed in March 2007, promising not only compensation and resettlement for those affected but also training and jobs in the new free zone, scholarships for their children, enhanced education, healthcare and recreation facilities, and a 2.5 per cent share in Lekki Worldwide Investment Ltd, with one director to be nominated jointly by the local communities.[231]

However, very little of what was promised proved forthcoming. One-time payments were made only for the value of buildings and crops on the farmlands, rather than the rental value of the land as set out in the 1979 Land Use Act. Almost half of those who were compensated received less than USD 67.[232] Furthermore, even these low payments largely did not reach those most affected: instead, corruption meant that funds disappeared into the pockets of local leaders and heads of large families.[233] Resettlement allocations were insufficient: 39 communities displaced from 830 hectares of land were resettled into just 15 hectares of land, while many of those who were allocated resettlement land found their plots already in use by other communities, leading to tensions between villages. In early 2024, at least three communities had yet to access land allocated to them.[234]

Other items in the MoU also failed to materialise. Representatives of the communities were not consulted on issues affecting them; scholarships and training opportunities were few and seized by the children of local leaders; representation on the board of Lekki Worldwide Investment was available only to one, carefully selected local leader; and the provision of schools and other social infrastructure has been absent in most villages.[235]

Most notably, despite the commitment to train and employ dispossessed farmers, only a few locals have found employment in the Lekki Free Zone. Those that are employed there tend to work as security guards and cleaning staff, with most better-paid factory jobs going to migrant workers from other parts of the country. Local young men, known as *omo-onile* (‘sons of the soil’), now disaffected and without formal occupation, have turned to extortion of funds from those who are seen to be buying or upgrading property in the area, or even parking their car at the roadside.[236] Some have also targeted Chinese and other investors in the Lekki Free Zone.[237]

The failure to compensate dispossessed local communities in a proportionate or sustainable manner has resulted in growing tensions in the area, with mass protests from the communities, forced evictions and increasing violence. In October 2015, violent clashes erupted near Okunraiye village. Police attempted to quell the unrest, but a stray bullet fatally injured Tajudeen Disu, the general manager of Lekki Worldwide Investment. Many arrests were made, including the Baale (chief) of Tiye and Okunraiye.[238]

Since 2015, local communities have remained mostly uncompensated but there has been a sharp increase in the securitisation of the Lekki Free Zone. The southwest

227 LFZDC, 2023
228 Business Day, 2022
229 Interviews with Lekki locals, February 2024
230 Interviews with local traditional rulers, February 2024
231 LSG, 2007
232 Adunbi & Stein, 2019
233 Interviews with local chiefs, February 2024; interviews with Lekki locals, February 2024; Lawanson & Agunbiade, 2018
234 Interviews with local chiefs, February 2024
235 Interviews with Lekki locals, 2024
236 Field observations, Lekki, February 2024
237 Interviews with Lekki locals, February 2024
238 Ezeamalu, 2015

quadrant is now fenced off and fronted by an imposing gate complex, with guards carrying AK-47s. It is guarded by a dedicated police station, and employs multiple private security firms to ensure security both for individual factories and for the management team (see Image 8.2).[239] The Lekki Free Zone is thus completely fenced off from the rest of Nigeria, including the surrounding local communities on whose former ancestral lands it was built.

Image 8.2 Lekki Free Zone dedicated police station
Source: Author's photograph

Local communities who have lost their farmland also suffer from indirectly related problems. Fresh food is no longer available in abundance, and former farmers must travel long distances to Epe or Ijebu to buy fruit and vegetables. Some produce is brought to market in the Lekki area, but locals complained that the vegetables are intensively farmed with heavy chemical use, and the fruit is wrinkled and not fresh. There has been an increase in consumption of dried and packaged foods.[240] Combined with the reduction in local fishing, largely because of the Lekki Deep Sea Port development, this represents a potentially significant overall negative impact in terms of local diet. The disruption of fishing as a traditional livelihood has also had knock-on effects for gender relations within local communities: while some fishermen have been able to engage in alternative economic activities, for example in transportation, many women have lost their sole source of income generation with the decline of fish-vending. As a result, their position within households has weakened and an increase in domestic violence has been observed.[241]

8.4 Investment, jobs and economic development

Lekki Free Zone has a range of investment incentives for firms, derived from Nigeria's federal export processing zones policy. These include a 100 per cent tax holiday from all federal, state and local government taxes, rates and duties; a one-stop approval for permits, operating licences and incorporation papers; duty-free and tax-free import of raw materials and components for goods destined for re-export; and no restrictions on the amount of goods that can be sold to the domestic market in Nigeria.[242] In addition, Lekki investment brochures highlight the reliable electric power generation, gas pipelines, water availability, sewage treatment and easy access to roads and the new Lekki Deep Sea Port.[243] Firms can lease a plot for construction within the Lekki Free Zone for 5–20 years, or a ready-built factory for a minimum of 3–5 years.[244]

Lekki promotional materials have long claimed that 116 firms are operating in the Lekki Free Zone, but it seems likely that most of these have merely expressed an interest in setting up.[245] In April 2015, 21 companies were operating in the Lekki Free Zone, in construction, manufacturing, trading and assembling, with a total investment of USD 12.4 million. A further 79 companies had apparently registered but not yet started operations.[246] By August 2018, however, the Lekki website only listed 26 operating enterprises, all but three of which were Chinese. Of the 2015 firms, only eight were still in operation – an extremely high turnover rate.[247] In 2024, the Lekki website still lists all 26 enterprises, as well as three new Chinese firms in the process of setting up, but the additional 79 firms highlighted to UNDP investigators in 2015 are not listed. The zone appeared mostly unfilled when we visited in February 2024, though zone managers emphasised the presence of 76 enterprises in total, including new smaller-scale Nigerian firms as well as large Chinese manufacturers.

The investing firms span a diverse range of sectors with no apparent critical mass in any one area, thus preventing any form of sectoral clustering and its potential positive effects for the zone. Of course, avoiding clustering may be an advantage from the perspective of individual Chinese firms, which may rate lack of competition for the Nigerian market more highly than the possibility of economic linkages such as joint distribution. It is this large local market that is the main attraction for most investors, and actual export from the zone appears very limited. It is also apparent that, despite the preferential policies of the Lekki

239 Field observations, Lekki, February 2024; interviews with Lekki Free Zone managers, February 2024
240 Interviews with Lekki locals and local officials, February 2024
241 Interview with Lekki NGO, February 2024
242 NEPZA, 2024
243 LFZDC, 2023
244 Interviews with Lekki Free Zone managers, February 2024
245 China–Arab States Expo, 2023
246 UNDP, 2015
247 Adunbi & Stein, 2019

Free Zone, some Chinese investors choose not to locate in the zone. This is especially the case with smaller firms that do not meet the minimum size threshold for a plot within the Lekki Free Zone, and thus tend to concentrate elsewhere including in private industrial zones. However, even some large companies prefer to purchase their own land for factory sites outside the zones, sometimes in collaboration with a Nigerian counterpart.

Almost every Chinese firm in the zone employs predominantly Nigerian workers, countering the notion that Chinese companies import their own labour force for production as well as construction. Although senior management teams are mostly Chinese, HR managers are almost always local as are more junior staff. Zone management noted that on average firms in the zone had a labour ratio of at least 80 per cent local Nigerians.[248] An estimated 5,000 jobs have been created overall (in the China-associated southwest quadrant of Lekki).[249] While it is not possible to assess the overall number of jobs across all quadrants, which would include the non-China-associated Lagos Free Zone as well as the Dangote oil refinery and Lekki Port, it appears highly unlikely that the projected 170,000 jobs have materialised.[250] Recruitment of the workforce in the southwest quadrant is done through Lagos-based recruitment companies, with workers coming from all across Nigeria as well as from within Lagos State.[251] Many arrive spontaneously at the gates of the zone seeking work. It is noticeable, though, that a minority of workers are locals from the Lekki-Ibeju area. Despite the promise of jobs for displaced indigenous people, they are not preferred for recruitment: explanations range from 'they are unqualified', 'they are too lazy to work hard' and 'they will only cause trouble in the factories' to 'they won't take paid jobs on their own former land'.[252]

Jobs in the Lekki factories are undeniably hard work. Most are assembly line positions, with long shifts six days a week, typically 7am–7pm or 7pm–7am, with only a one-hour break. Workers complained that the pace of work was much faster than they were used to, and the risk of industrial accidents was high. Many workers are employed through contractors on a casual basis, with a high degree of precarity. After passing initial screening, they are asked to wait at the factory gates each morning to see which workers will be needed that day.[253] Other firms, typically those in which more training is provided, offered more secure employment, but reports of labour abuses were common in most types of firm. Workers complained of low and delayed pay, long working hours, stressful pace of work, lack of protective equipment and verbal abuse by managers.[254]

It is difficult for Nigeria's federal labour inspectors to conduct inspections inside the country's free zones, owing to the hostility of zone management as well as the limited number of factory inspectors – barely 19 per cent of those statutorily required.[255] In 2007, NEPZA ruled that free zones were outside the jurisdiction of the Federal Ministry of Labour and Employment, claiming that allowing inspections would violate section 4(e) of the Federal Export Processing Zones Act, which calls upon the Ministry of Labour and Productivity to establish harmonious industrial relations in zones.[256] There are no available records to suggest that any of the firms in the Lekki Free Zone have been inspected, let alone labour abuses addressed. Moreover, trade unions are not active inside the zone, since section 18 (5) of the Act bans strikes and walk-outs for a period of 10 years following the commencement of operations in a zone.

Zone managers spoke approvingly of this provision, highlighting the much more relaxed labour laws in the Lekki Free Zone as an attraction to investors, and interpreting the law as barring all forms of labour organisation.[257] The prohibition on strikes was also highlighted repeatedly in zone promotional materials (see Figure 8.4). The only recognised form of grievance redressal available to workers is to bring their complaint before the management of the zone, who would intervene if anything needed to be done. In reality, the only worker concerns zone managers had received were a handful of complaints related to low pay, which they dismissed as ungrounded since they felt that wages within the Lekki Free Zone were already higher than those for similar work outside the zone.[258] Workers were thus unable to seek effective redressal of labour abuses through the absence of a functioning mechanism for inspection, complaints and resolution.

Formal training opportunities for assembly line workers are scarce, limiting the possibility for skills transfer, though informal on-the-job training is common. Some firms brought in specialists from China to train locals to use the production line machinery, after which they returned to China while the newly trained Nigerians would train further new recruits. However, levels of skills transfer

248 Interviews with Lekki Free Zone managers, February 2024
249 Interviews with Lekki Free Zone managers, February 2024
250 Eletuo, 2022; China Communications Construction Company (CCCC), 2023
251 Interviews with Lekki Free Zone managers, February 2024
252 Interviews with firm managers, Lekki Free Zone managers and Lekki locals, February 2024
253 Interviews with workers and Lekki Free Zone managers, February 2024
254 Interviews with workers, February 2024
255 ILO, 2011
256 Ibid.
257 Interviews with Lekki Free Zone managers, February 2024
258 Ibid.

Figure 8.4 Lekki Free Zone Development Company incentives for investors. Source: Lekki Free Zone Development Company

Image 8.3 Migrant worker accommodation in village 'face-me-face-you' blocks. Source: Author's photograph

seem typically fairly low, with many of the factories engaging only in assembly of semi-knocked-down goods and with much of the process automated, thus requiring only basic training.[259] One firm had developed plans with the Confucius Institute in Lagos to establish a vocational training centre offering certified courses, but this had not materialised for lack of demand from those able to pay for vocational training.[260] Very few Nigerian employees appeared able to set up their own enterprises as a result of their work experience in Lekki: apart from the relatively limited skills transfer, most Nigerian workers lacked access to capital, limiting the prospects of spin-off investments.

There have been rare cases of collaboration between Chinese and Nigerian firms in the Lekki Free Zone; for example, Chinese manufacturers assisting Nigerian firm owners with equipment or even lending machine parts.[261] However, such benefits may be outweighed by the possibility of 'crowding out'. Since Nigerian firms typically lack capital and expertise, they may easily be outcompeted by Chinese enterprises with better technology and know-how. Indeed, this has already taken place in some sectors, including ceramics and increasingly furniture, where the primary competitors for Chinese firms in Nigeria are now other Chinese firms.[262] Beneficial 'forward linkages' to markets, such as through local distributors, were fairly limited; and although 'backward linkages' to supply chains were more abundant, these were relatively superficial and limited to certain sectors, where local materials could easily be supplied, such as food, wood and fabric. Many firms were instead dependent on imported inputs from China, inhibiting the potential formation of backward linkages.

Aside from potential direct economic benefits through creation of jobs, knowledge transfer and industrial collaborations, some indirect economic benefits have also accrued to the local area. Although few locals have found formal sector employment in the Lekki Free Zone, more have benefited economically from the broader development of the local area. An influx of migrant workers has provided rental opportunities to local communities, with wealthier *omo-onile* constructing small 'face-me-face-you' blocks of rooms to let (see Image 8.3), and the villages nearest the zone have seen an increase in market stalls, street vending and small enterprises. Though large-scale in-migration of other ethnic groups has caused a degree of tension with the predominantly Yoruba locals in some villages, the population increase has led to commercial development in the area, benefiting those locals who could afford to construct rooms or engage in small businesses. Those without the capital to invest in construction or entrepreneurship have not experienced the same benefits, leading some locals to complain of increased inequality in the area.

8.5 Lekki Deep Sea Port

Lekki Deep Sea Port, with a 17-metre draught, has been touted as a 'game changer' for Nigeria, since the main existing port in Lagos, Apapa, was too shallow to receive large container ships. As a result, large ships needed to dock in neighbouring countries before trans-shipping cargoes to and from Nigeria in smaller vessels. Trucks from Apapa would then spend days on nearby congested roads, exacerbating Lagos's notorious traffic problems and making Nigeria's shipping costs some of the most expensive in Africa. Construction of the new Lekki Port

259 Interviews with workers, firm managers and Lekki Free Zone managers, February 2024
260 Chen, 2021
261 Interviews with firm managers, February 2024
262 Chen, 2021; interviews with firm managers, February 2024

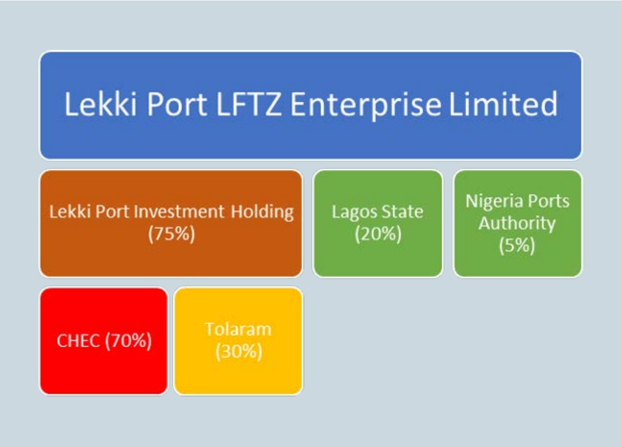


Figure 8.5 Lekki Deep Sea Port ownership structure
Source: Author's diagram

was completed in October 2022, with operation starting in April 2023.[263] The new port is intended to serve not only Nigeria but the wider West African region and even AfCFTA.

It is too soon to say whether or not the new port will enable substantially greater exports from the Lekki Free Zone. Currently, as has been said, most firms manufacturing in the zone prefer to target the Nigerian domestic market, and export opportunities have been limited. Firm representatives spoke approvingly of the greater ease with which they can now import machinery and production inputs, but few had concrete plans for increasing exports when interviewed in February 2024.[264]

Although Lekki Port was branded as a 'key achievement project' in China's 2019 Belt and Road Summit, it should be noted that it is a commercial project rather than the result of any inter-governmental collaboration between China and Nigeria. While it is partly financed by a loan from the China Development Bank, the borrower is Lekki Port Investment Holdings, in which a Chinese SOE is the majority shareholder, and the loan is thus not a sovereign loan.[265] Nor was the port initiated by China, instead being proposed by the multinational firm that owns the Lagos (not Lekki) Free Zone, and the major Nigerian investor is the sub-national Lagos state government.[266]

Lekki Port was the first 'integrated investment, construction and operation' (IICO) overseas port project of the Chinese SOE CHEC.[267] CHEC had already constructed at least 13 ports across Africa yet had little previous experience of investment or operations. It played no role in the original push for the port: instead, the original developer was Tolaram Group, a Singapore-based business, which had considered building a jetty for its goods in Lekki as far back as the 1990s and had excellent connections with the Nigerian federal government. The port finally became legally feasible with Nigeria's 2005 Infrastructure Concession Regulatory Commission Act, which established the institutional framework for a public-private partnership.[268] Tolaram's long-term engagement in this project was primarily motivated by its involvement in the Lagos Free Zone, which is located next to the port.[269]

Tolaram selected CHEC as the contractor for the port in 2012, but construction was delayed and key stakeholders withdrew, including funders Stanbic IBTC bank, the African Development Bank and the European Investment Bank, as well as Filipino port operator ICTSI. According to a Nigerian ports official, governance conditions imposed by the European Investment Bank, such as the need to prepare a sanctions list, were responsible for the delay and loss of funding.[270] As an alternative, in 2017 Tolaram turned to CHEC to provide equity investment and operate as well as construct the port.

Ownership of the port, with a 45-year concession period and preferential right for a 25-year renewal, is by a joint venture SPV, Lekki Port LFTZ Enterprise Limited (see Figure 8.5). This joint venture is divided between Lekki Port Investment Holdings (75 per cent), in which CHEC owns a 70 per cent stake and Tolaram Group 30 per cent, the Lagos state government (20 per cent) and Nigeria Ports Authority (5 per cent). Overall, the China SOE thus owns 52.5 per cent of Lekki Port – the first project in which CHEC holds a controlling stake in Africa.[271]

Other shareholders were concerned at the extent of CHEC's role, however, and demanded the involvement of a different operator to ensure balance.[272] Ultimately, an 80 per cent stake in the operation of the container terminal was granted to CMA Terminals, a subsidiary of the French shipping conglomerate CMA-CGM, with CHEC a minority shareholder. This arrangement suited both parties: CMA could develop new shipping lines without having to invest in physical infrastructure, while CHEC could reassure Chinese state investors that an experienced international operator would counter its limited experience in port operations overseas.

Although the port is branded a 'key achievement' for China's BRI, the project has involved no inter-governmental collaboration. Overall, China's achievement

263 Zhang, 2023
264 Interviews with firm managers, February 2024
265 Zhang, 2023
266 Interview with Lagos Free Zone/Tolaram managers, February 2024
267 Zhang, 2023
268 ICRC, 2005
269 Interview with Tolaram managers, February 2024
270 Zhang, 2023
271 Interviews with Lagos Free Zone managers, February 2024
272 Zhang, 2023

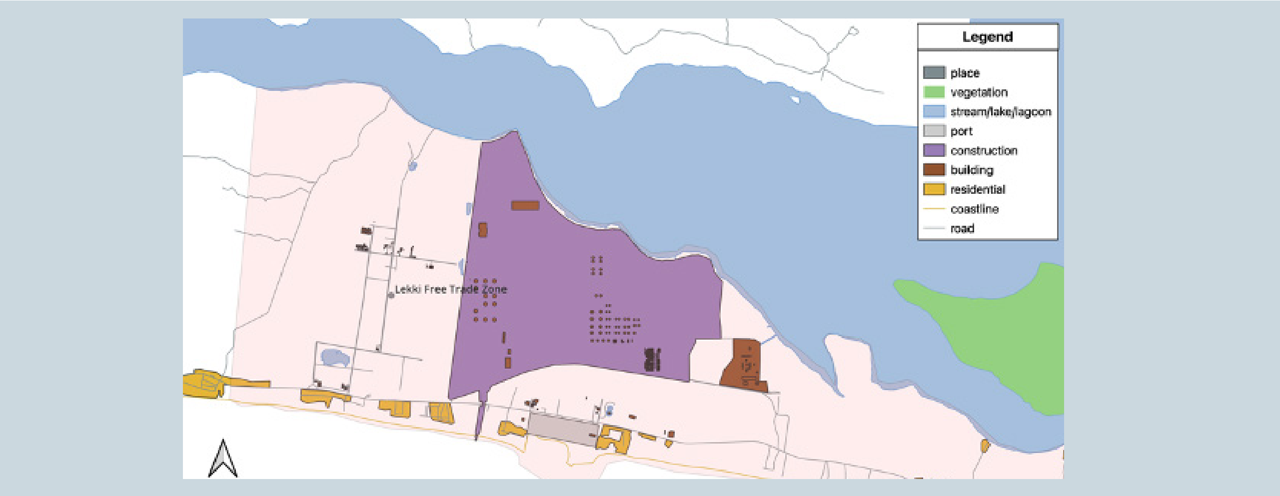


Figure 8.6 A physical overview of the Lekki Free Zone**.** Source: GIS Mapping, King's College London

of the IICO model in Lekki Deep Sea Port has depended critically on contingent factors and especially the key roles of other international firms, Tolaram and CMA. Despite their dominant market position as construction contractors, and their ability to mobilise capital from China, Chinese infrastructure companies may still be in a relatively marginal position globally.[273]

8.6 Environmental change

Before the construction of Lekki Port, an EIA was conducted, predicting adverse impacts on fishing during dredging and marine infrastructure construction. The EIA observed that the project would harm the terrestrial ecosystem of the local vegetation, soil and wildlife habitat, and highlighted an adverse impact on the marine ecosystem resulting from the maritime shipping activity, noting that the landscape's biodiversity would also be in danger, primarily due to increased urbanisation.[274]

The EIA document set out substantial commitments to mitigating environmental hazards on the Lekki shore. Yet the impacts on local fishing communities have been severe, with limited mitigation in place. These stem not only from the port construction but also from the Lekki Free Zone itself, the construction and operation of the Dangote oil refinery, and the Lagos Free Zone next door.

Fish have become much scarcer, obliging local fishermen to fish more frequently and further from the shore in more dangerous waters. Some fishing communities have moved inland, to the lagoon, but even there, fish have disappeared – most likely a result of the sand-filling that has changed the local ecosystem. Those who continue to fish at sea complain that some of the fish they now catch are toxic and inedible, while those with outboard engines have reported the engines need frequent replacement because of water pollution.[275] Sources of this pollution include discharge from ships as well as spills of oils, lubricants, fuels and other liquids.[276] Some of these liquids may come directly from the zone, since satellite imagery has identified that Lekki industries have two main drainage channels where they dispose of industrial wastewater into the sea.[277]

It is not only the sea that has been affected. Swamp lakes in Idotun, a village on the Lekki peninsula, have dried, with only one of the original two lakes remaining. The construction of the deep sea port has entirely depleted the swamp lake on the western side of this community, since construction engineers sand-filled the lake to level the ground to create a dock area. In Idotun and Magbon Segun communities, palm and coconut trees have also died since the drying of the lakes, harming the local trade in coconuts and palm kernels on which many locals depended.[278]

Satellite images show not only the compromised lake ecosystem, but also large-scale destruction of mangrove vegetation in the area. Riverine mangrove vegetation in Lekki decreased from about 7 to 2.5 acres between 2015 and 2023.[279] This destruction has caused enhanced flooding in Idotun, Magbon Segun, and some other areas of Ibeju-Lekki, which has been worsened further

273 Chen, 2021
274 Goodwill House, 2010
275 Interviews with Lekki locals and NGO, February 2024
276 Adeyemi, 2023
277 Ibid.
278 Interview with NGO, Lekki, February 2024
279 Adeyemi, 2023

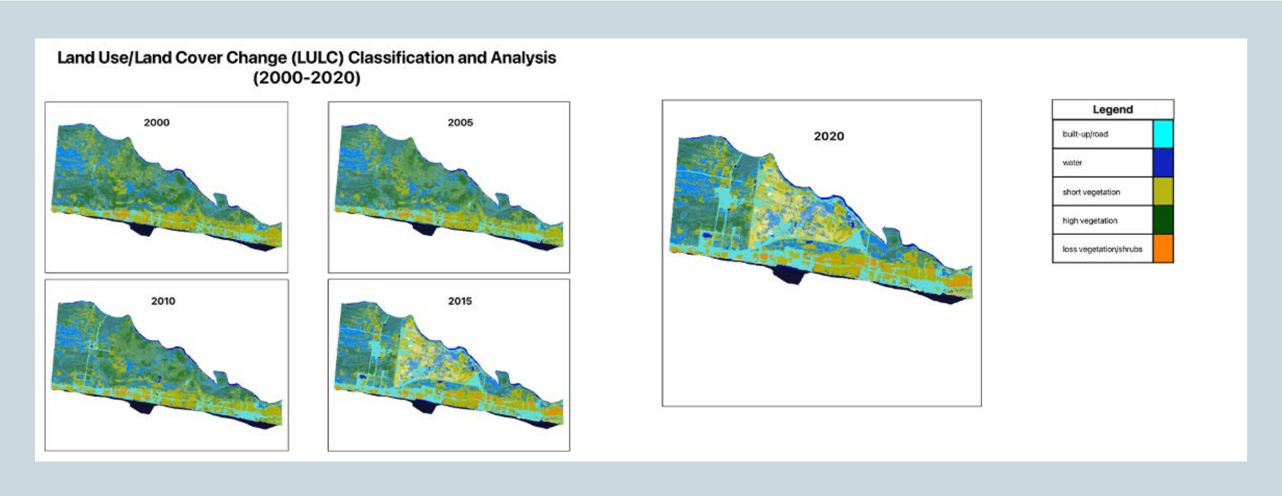


Image 8.4 Land use changes in Lekki, 2000–20. Source: GIS Mapping, King's College London

by the barriers to erosion erected to guard the port site. These barriers have redirected erosion towards the local communities, making them more vulnerable to flooding.

Some CSR activities by the zone have targeted local fishing communities, for example by providing nets and a donation of outboard motors.[280] Reports also suggest that some fishermen were compensated for the damage caused by the construction of the port, and that palliative outreach was provided to villagers during COVID-19.[281] Yet the response has been inadequate to address the long-term damage to the local ecosystem and major damage to local livelihoods, with many people no longer able to depend on fishing or coconut or palm farming for the majority of their income.

The land-use shifts are captured in Image 8.4 above, demonstrating how the vegetation and water bodies in the area have been affected by increases in the built-up area, with industrial development now dominating the landscape, with some short vegetation. This evidences the decrease in farming and horticulture.

Above, the images demonstrate the progression of the normalised difference vegetation index (NDVI) from a higher extent of vegetation (greener hues) to a lower extent (yellow to orange hues). The NDVI is calculated on a scale of –1 to +1, using the difference between light reflected by vegetation cover and light absorbed by vegetation cover. This helps to capture the changes in vegetation cover and intensity. The images on page 58 demonstrate an extreme reduction in vegetation cover closer to the coastline where the Lekki Free Zone is based.

The changes brought by human activity, urbanisation and loss of vegetation create higher surface level temperature, which can increase the loss of moisture from trees (evapotranspiration). Figure 8.7 demonstrates the increase in evapotranspiration between 2000 and 2024, indicating drier soils.

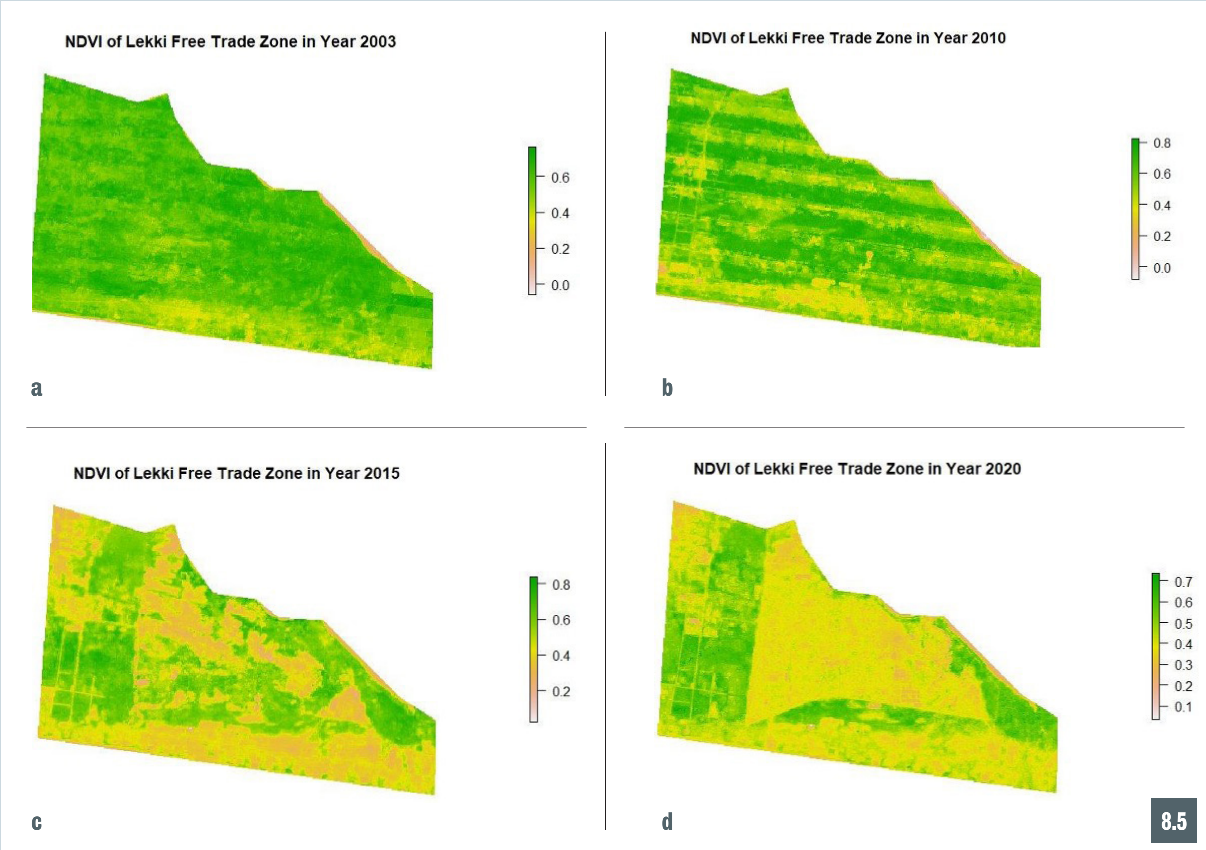
Waste management has also been a problem for the zone. Since the Lekki Free Zone operates autonomously, Lagos Waste Management Authority lacks jurisdiction and can enter only at the invitation of zone or firm managers, making it difficult to monitor environmental or waste disposal compliance.[282] The zone produces various types of industrial waste requiring special handling, which has mostly been taken to the Epe Landfill area by a network of small private contractors, each operating independently and contracted directly by the factories.[283] However, due to the landfill's recent closure, there is an urgent need for an alternative disposal site with proper monitoring of waste management. An additional concern relates to some of the communities resettled from the area of the zone, which do not have reliable waste collection in their new locations, particularly for food- and agriculture-related wet waste, suggesting a further environmental dimension of the extensive and unpopular land expropriation.

8.7 Discussion

In conclusion, three recurring themes stand out in the analysis of the Lekki Free Zone: overall economic gains with potentially mixed effects; negative social and environmental consequences; and a gulf between official narratives and reality.

First, the zone has been an economic success, most notably in terms of creating jobs, increasing industrialisation and indirectly boosting the local economy.

280 Interviews with Lekki Free Zone managers and local officials, February 2024
281 LFZDC, 2020
282 Interview with Lagos Waste Management Authority staff, February 2024
283 Ibid.



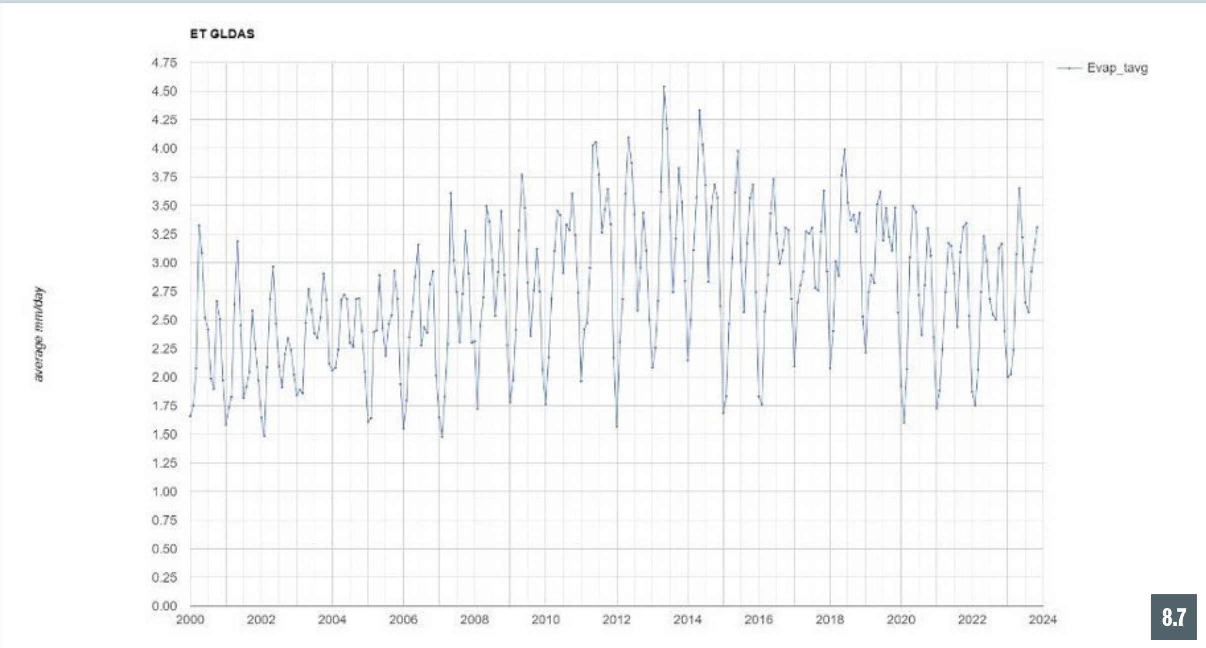


Image 8.5 Normalised difference vegetation index (NDVI). Source: GIS Mapping, King's College London **Figure 8.7** Changes in evapotranspiration. Source: GIS Mapping, King's College London

Image 8.6 The above images demonstrate the change in the Ibeju-Lekki area between 2009 and 2019 (later images are unavailable). Source: Google Earth Pro (Image Landsat/Copernicus, 2023) **Image 8.7** Close up of the Lekki Free Zone area in 2015 (left) and 2022 (right). Source Google Earth Pro (Maxar Technologies, 2024; CNES, 2024; Airbus, 2024).

This should not be understated. However, it is unclear whether or not these benefits provide a path to sustainable development for Nigeria. Although the zone has facilitated exports, economic returns are primarily to international companies, with domestic firms facing competition from Chinese manufacturers. Moreover, there is little evidence that the zone has had a positive impact on fostering the long-term development of domestic firms through skills transfer. Most jobs have gone to internal migrants, who are willing to work for lower wages, rather than to locals, fuelling social unrest in the local area despite the overall employment gains. Moreover, although many locals have benefited indirectly from the zone, for example through renting property to workers, these gains have been unequally distributed, with some locals lamenting increasing social divides. Overall, behind the positive economic consequences of the zone there may be a complex picture of growing economic inequality and related social tensions, which, coupled with rising inflation and the slowdown of the Nigerian economy, may not bode well for the future.

Second, looking beyond economic indicators, the zone has boosted local infrastructural development with the potential for further road and rail transport to come. Yet construction and operation of the zone has also led to a series of negative consequences locally. These include environmental damage (increasing flood risk through mangroves removal, harmful effects on fishing, and release of chemicals), and dispossession and displacement of local populations. In turn, these changes have had negative impacts on the health and livelihoods of local communities. Furthermore, within the zone, there is evidence of labour abuses. The legal framework of the zone implicitly prioritises the rights of employers, making it difficult for workers to challenge abuse.

Many of these consequences stem from existing local challenges in governance and management, including a degree of corruption and a lack of transparency in the institutional environment. Some of the social problems generated by the zone's construction are also related to power imbalances between local authority figures and the villagers under their jurisdiction. These problems are thus not directly the responsibility of Chinese zone developers (who are, in any case, involved in only one of four quadrants of the total zone area). However, Chinese actors, maintaining the principle of non-interference in host country affairs, are willing to adapt to and work with local systems, rather than challenge them. Their willingness to navigate local corruption and other problems may thus maintain and exacerbate the structures that lead to negative outcomes.

Third, there is a significant gap between the narratives of the Lagos state government and Chinese state developers on what the space *will* produce and the reality on the ground. Promises of a bustling port, a large number of investing businesses, a world-class infrastructure, a residential space, a fully urbanised locality, and so on, bear little relationship to the actual zone as it stands in 2024, 18 years after establishment. More fundamentally, the promises of economic development are in tension with the reality of ongoing social unrest and lack of sustainable linkages between factories and communities.

Image 8.8 Lagos skyline, Lagos Island. Source: Shutterstock

Image 9.1 Liaoshen Industrial Park entrance sign
Source: Author's photograph

Figure 9.1 Liaoshen Industrial Park ownership structure
Source: Author's diagram

In-depth case study 2: Liaoshen Industrial Park, Uganda

The Liaoshen Industrial Park is located in rural central Uganda in Nakaseke District in the sub-county of Kapeeka, about 65 kilometres northwest of the country's capital, Kampala. Covering a total area of around 520 hectares, this privately run park is much smaller than the southwest quadrant of Lekki or other official Chinese OETCZs. It was established in 2015 as Uganda's first Chinese-funded industrial park. Although formally established as a partnership between the government of Uganda and the government of China's Liaoning Province, the project is effectively a private initiative of the China-based Zhongda Group, Ugandan-registered Zhang Group (owned and operated by Chinese national Zhang Hao), and the Ugandan president's brother Caleb Akandwanaho, known as General Salim Saleh, on whose land the park is built. Liaoshen is a significant contrast to Lekki and a key example of a nationally important, privately operated China-associated zone.

9.1 Ownership and establishment

The original proposal for an EDZ in the area again did not come from China. In the early 2000s, General Salim Saleh moved to Kapeeka and began developing the Namunkekera Rural Industrial Centre, a 600-hectare zone that was intended to combine large agricultural processing facilities with an agricultural/industrial park.[284] In 2006, he began collaborating with a Chinese businessman, Shen Zhongyuan, to develop agricultural projects there. These projects were unsuccessful, but in 2013 they successfully launched an industrial facility making roof tiles, employing local villagers. A second Chinese businessman, Zhang Hao from Liaoning, had come to Uganda in 1999 and begun selling imported TV sets in the area. Eventually he built a small plant to assemble semi-knocked-down TV units on site.[285]

Together with General Salim Saleh, these individual 'anchor investors' slowly built a substantial Uganda–China business partnership, with only limited involvement of any official state actors. In 2013, they invited Bin Zhigang, the Vice Governor of Liaoning Province, to visit Uganda, and, during his trip, the establishment of a Chinese-funded industrial park was proposed. In 2015, the Ugandan president, Yoweri Museveni, announced that Kapeeka had been selected as the site. A 240-hectare parcel of the Namunkekera Centre was initially allocated to Liaoshen Industrial Park, with the goal of hosting 50–80 industrial enterprises from a range of sectors by 2020.[286]

Liaoshen Industrial Park is owned by two China-associated private firms, Zhongda Group and Zhang

284 Wyrod, 2019
285 Interviews with Liaoshen Industrial Park managers, Kapeeka, February 2024
286 ULSIP, 2018; interviews with Liaoshen Industrial Park managers, Kapeeka, February 2024

Group, in collaboration with General Salim Saleh (see Figure 9.1). Zhongda Group is a fully Chinese private enterprise, registered in Liaoning province, and known for its production of industrial aluminium. Zhang Group is owned and operated by Zhang Hao but registered in Uganda. The exact ownership stake of each party is difficult to ascertain. The park is operated by an SPV, Liaoshen Industrial Park Company Ltd, which is a joint venture between the three parties, headed by Zhang Hao.[287] Zone managers refer to Zhang Group as 'the developer' and General Salim Saleh as 'the landlord', both of whom are represented on the management team.[288] Day-to-day management of the zone appears to be carried out by at least 50 per cent Ugandan staff, all of whom have received training in China on SEZ management.[289] Zhongda Group appears to have led the park's construction but not to play a role in day-to-day operations.

With 25 years of business experience in Uganda, developer Zhang Hao thus acts as a key intermediary between Uganda and China. He not only directs Liaoshen Industrial Park Company Ltd but also holds the official lease on the park land and is director of overseas activities for the Liaoning Provincial People's Association for Friendship with Foreign Countries.[290] The role of the Liaoning government appears minimal: though originally slated to provide financial support for 50 per cent of the up-front costs for investing enterprises, this funding did not materialise, and zone managers reported that Liaoning's role has been limited to encouraging businesses from that province to invest.[291] Despite the personal involvement of the president's brother, the Ugandan government's role has also been limited to providing lease of the land, infrastructure such as power and water supplies, and incentives such as export and import tax exemptions and 10 years of corporate income tax exemption.[292] Thus, reports of the park as a form of inter-governmental collaboration or public–private partnership may be over-emphasising the role of Chinese and Ugandan government entities in what appears to be essentially a privately invested and operated economic zone.

9.2 Construction and planning

Construction of Liaoshen Industrial Park began in December 2015 by Zhongda Group, with the first phase of 240 hectares to be completed by the end of 2016, including power plant, water supply, 10 factories and office buildings, as well as preliminary living and commercial facilities at a cost of around USD 40 million.[293] Phase 2 of the park was planned to add another 200 hectares by 2018, with Phase 3 expanding eventually to 520 hectares.[294] Construction work was mainly undertaken by Chinese workers.[295]

A central part of the developer's vision was that manufacturing should begin as soon as practical, before feasibility studies and even before factory buildings were completed, where possible, to facilitate economic success.[296] In July 2017, the park's largest factory, owned by China's Wangkeng Ceramics Group, broke ground, and by August a further four Chinese firms were setting up to engage in fruit processing, electrical appliance assembly, packaging and steel structure assembly, while park construction continued around them.[297] A maize processing plant connected to General Salim Saleh was also established. After COVID-19-related delays, the park is now projected to be completed and operating at full capacity by 2025–26 rather than the original date of 2020.[298]

The masterplan for Liaoshen Industrial Park was designed by China's state-owned China Northeast Architectural Design and Research Institute, and loosely modelled on several economic zones in Liaoning province including the new China-German Equipment Manufacturing Park in Shenyang.[299] As in the Lekki case, the planning was done rather late, with the design contract being announced only in 2016 after initial construction was already underway.[300] Again, similarly, the plan was developed with no input from the Ugandan side and the layout represents a very typical Chinese-style zone, with the structure of 'one belt, two centres, multiple axles and multiple nodes'[301] (see Image 9.2). All reference pictures for future buildings were again Chinese, and a comparison of these with those already built reveals significant discrepancies.

287 Interviews with Liaoshen Industrial Park managers, Kapeeka, February 2024
288 Ibid.
289 Ibid.
290 Wyrod, 2019
291 Interviews with Liaoshen Industrial Park managers, Kapeeka, February 2024
292 Interviews with Liaoshen Industrial Park managers and local district authorities, February 2024
293 ULSIP, 2016
294 ULSIP, 2018
295 Interviews with locals, Kapeeka, February 2024
296 Interviews with Liaoshen Industrial Park managers, Kapeeka, February 2024
297 ULSIP, 2018
298 Interviews with Liaoshen Industrial Park managers, Kapeeka, February 2024
299 Ibid.
300 ULSIP, 2016
301 ULSIP, 2018

Image 9.2 Liaoshen Industrial Park masterplan and projection. Source: USLIP, 2016 (top and left) Liaoshen Industrial Park management building with Chinese and Ugandan flags. Source: Author's photograph (right)

The Liaoshen Industrial Park Company negotiated its development plans directly (and typically informally) with Ugandan national government bodies, bypassing local Nakaseke District planners.[302] Amid growing concerns about the park's environmental impacts, the local authority enlisted Kampala-based consultants to develop a sub-county plan, who found that the district authorities had little knowledge of the park and few if any staff had even visited.[303] District-level officials reported that they had difficulty in accessing the park other than to bring external study tours, and knew nothing about future plans.[304] These challenges for local authorities were exacerbated by increasing land speculation across the district as a result of the park's activity, such that it was difficult for local planning to keep pace with land development.[305]

9.3 Land acquisition and agricultural expansion

Unlike the case of Lekki Free Zone, land acquisition has been almost entirely uncontentious in the establishment of the Liaoshen Industrial Park. This is a function of two key features. First, the land on which the park is located is de facto owned by the president's brother, General Salim Saleh. Although parts were occupied by tenant farmers in 2015, they had no ownership rights and had been warned by the General that the land would eventually be required for industrial construction.[306] Second, and most critically, the widespread availability of fertile agricultural land in the Kapeeka region meant that it was easy for those displaced by the park to be relocated elsewhere, typically onto an alternative parcel of the General's land, again with the warning that the land might be required as the park continues to expand.[307]

No financial compensation was provided for those resettled to other land, but villagers received new plots that were typically larger than their former land, as well as free maize seed and an at-least-market-rate of pay for maize crops to be processed in the new industrial park. Thus, rural people continued farming, and indeed the rate of agriculture across the Nakaseke District increased dramatically from 974 square kilometres under cultivation in 2016 to 2,083 square kilometres under cultivation in 2023.[308] The most major increase has been in maize growing, especially since 2020 – a result of General Salim Saleh's investment in local maize farming, storage and processing through the new maize facilities at Liaoshen, and his more general role in grain dealing nationwide.

Other forms of agricultural production across Nakaseke also increased after the park was established, including livestock keeping, fish farming and beekeeping.[309] A few new large plantations were established as the price of agricultural goods increased, hiring both under-employed locals and incoming migrant workers, but most local farming continued to be small-scale. The influx of migrants from across the Kapeeka sub-county and beyond provided a lively market for agricultural goods, leading to improved incomes from farming and, relatedly, improved diets.[310]

The risk of further industrial park expansion has pushed some tenant farmers into growing annual crops that could be grown and harvested quickly should they be given notice of eviction, leading to a small-scale shift from, for example, slow-growing coffee, bananas and mangoes towards faster maize, pineapples and beans.[311] Overall, though, the short-term impacts of the park have been extremely positive for local agricultural livelihoods, not only through the ready supply of land and seed, but also through the improved agricultural markets and enhanced facilities for processing food products locally within Liaoshen Industrial Park. Whether or not these positive impacts can be sustained in the longer term, particularly with further expansion of the park and a diminishing supply of available land, remains to be seen.

Unlike the Lekki Free Zone, the Liaoshen Industrial Park is not (yet) gated, such that local people can access the roads and spaces between factories freely, leading to some unofficial agricultural production on as yet unused plots. Individual factories, are, however, walled and gated and guarded by armed personnel – in this case, the personnel are employed directly by the Ugandan military rather than through private security firms. These measures are aimed not at controlling local unrest, as in the Lekki case, but at preventing theft. After a spate of violent robberies, some targeting foreign investors, in 2018 President Museveni controversially ordered the Ugandan army specifically to protect Chinese businesses.[312]

302 Interviews with local district authorities, Nakaseke, February 2024
303 Goodfellow & Huang, 2022
304 Interviews with local district officials, Nakaseke, February 2024
305 Ibid.
306 Interviews with locals, Kapeeka, February 2024
307 Interviews with locals and village leaders, Kapeeka, February 2024
308 Nakaseke District Authority, 2023
309 Nakaseke District Authority, 2023
310 Interviews with village leaders and local district officials, Kapeeka, February 2024
311 Interviews with local district officials, Nakaseke, February 2024
312 BBC, 2018

9.4 Investment, jobs and economic development

Liaoshen Industrial Park offers investment incentives for firms, through the Ugandan investment authority, including exemption from duties on all imported equipment, construction materials and other raw materials, and 10 years' exemption from corporate income tax. Unlike Uganda's (separate, non-China-associated) free zones, there are no restrictions on the amount of goods that can be sold to the domestic market.[313] In addition, Liaoshen investment promotion materials highlight the one-stop customs and tax administration facilities to be made available within the park, as well as the robust infrastructure including electric power and water supply, and easy access to both the Ugandan capital Kampala and the major arterial road for export to Kenya.[314] Firms can lease a range of differently sized modular plots for construction of their own factories and, in a few cases, worker dormitories. There are no ready-built factories available.[315]

A total of 22 firms are present in Liaoshen Industrial Park, of which 19 were operational in February 2024. Aside from one Indian clothing factory and one Ugandan maize processing plant (with a Chinese management team), all firms were exclusively Chinese.[316] In sharp contrast to Lekki, there appears to have been little turnover since the first factories arrived in 2017, as all initial investors listed by the Liaoshen Industrial Park Company continue to manufacture in the park. The firms span a range of industries, with a concentration in foods and agricultural processing, taking advantage of the existing high agricultural productivity of the district. Other sectors include electronics assembly, textiles, sanitaryware, ceramics, fishing nets and agricultural equipment.

Very few of these firms are engaged in any significant exporting. Only one of the food processing plants, the fishing nets manufacturer and the ceramic tiles factory export a sizeable percentage of their production: the first two to China and Russia, and the last to Kenya. Some of the maize milled on site is exported to South Sudan through the UN World Food Programme, but this is dependent on relative grain prices.[317] Just as in the Nigerian case, it is the local market that is the main attraction for most investors, and in Liaoshen exports from the zone appear unlikely to increase in any major way, at least in the short-to-medium term. This is partly a function of the inland location of Liaoshen (and indeed Uganda) combined with weak transport infrastructure, and partly the availability of alternative export-orientated manufacturing bases, for example in Southeast Asia.

Park managers estimated that enterprises in Liaoshen had created around 3,500 jobs on site for Ugandan workers.[318] After two years in operation, every Chinese firm employed predominantly Ugandan workers, with no more than 10–15 Chinese in each factory, mostly senior managers and technical experts on placements of around two years. This represents a substantial shift from 2018, when at least 400 Chinese managerial, supervisory and technical staff were based in the park.[319] This employment creation represents a significant benefit of the industrial park, particularly in the context of Uganda's growing youthful and under-employed population.

Recruitment of the workforce is done directly by the factories, with workers coming from across Uganda to find work by waiting at the factory gates.[320] There appeared to be no role for labour contractors or agencies, with workers instead employed directly by firms. It is again noticeable, though, that only a minority of workers are locals from the Kapeeka area. There has been large-scale in-migration from northern Uganda in particular, as well as from surrounding countries including Burundi and the Democratic Republic of the Congo, leading to rapid population increase in Kapeeka and its surrounding villages. Village administrators estimated that their populations had doubled or even tripled over the previous decade.[321] Most villagers looked approvingly on this swelling of the population, since the migrants enhanced local agricultural markets and marriage pools and contributed rental incomes to Kapeeka farmers-turned-landlords.

Genuine collaboration between Chinese and local firms appears even more limited in Liaoshen than in Lekki, with no solely Ugandan firms setting up in the zone at all. Some, like the maize plant, are promoted as Ugandan but appear to be substantially operated (and perhaps also invested in) by Chinese citizens, while others, like the tile manufacturers, are advertised heavily as producing items that are 'Made in Uganda' but are entirely Chinese-owned.[322] To add to the lack of positive spillovers for Ugandan firms, there may also be issues of 'crowding out': manufacturing levels of domestic firms are very low, and they lack both capital and expertise, thus are easily surpassed by Chinese businesses.

313 UFZA, 2014
314 ULSIP, 2018; Yang, 2017
315 Interviews with Liaoshen Industrial Park managers, Kapeeka, February 2024
316 Ibid.
317 Interviews with local district authorities, Nakaseke, February 2024
318 Interviews with Liaoshen Industrial Park Managers, Nakaseke, February 2024
319 Ibid.
320 Interviews with workers and firm managers, Kapeeka, February 2024
321 Interviews with village leaders, Kapeeka, February 2024
322 Interviews with firm managers, Kapeeka, February 2024

Indeed, this competition is a concern not only with manufacturing, but perhaps more importantly with trade, since local traders' associations reported Chinese nationals were able to buy products from Chinese factories in Liaoshen more cheaply than Ugandans, and thus to sell them in Uganda at lower prices than their Ugandan wholesale and retail competitors.[323] There were even suspicions among traders that some Chinese goods were imported from China but sold in Uganda as if produced locally, thus avoiding import taxes.[324] Such concerns over unfair competition have occasionally erupted into protests over Chinese traders, for example in Kampala in 2017.[325]

Forward linkages of Chinese products from Liaoshen, to Ugandan distributors and markets, appear limited. Backward linkages to Ugandan supply chains are more apparent, most noticeably in the supply of food and agricultural products from local farmers, and some of the raw materials for the manufacture of ceramics, though manufactured inputs were lacking. Many firms manufacturing in Liaoshen were heavily dependent on imported inputs, mostly from China.[326]

Just as in the Lekki case, formal training opportunities for workers are scarce, limiting the possibility for skills transfer, though informal on-the-job training is common, often at least initially by Chinese specialists. Again, levels of skills transfer seem low, with many of the factories engaging only in assembly of low-value-added or semi-knocked-down goods, thus requiring only basic training.[327] Where production processes were more complex, for example in tile-making, some workers complained that detailed instructions were deliberately concealed from them, so that they would be unable to set up their own competing enterprises. More broadly, it seems unlikely that many Ugandan employees will be able to set up their own enterprises as a result of their training in Liaoshen, since most lacked access to the capital necessary to start their own business. An additional concern expressed by local teachers was that the availability of low-skilled assembly-line work was encouraging teens to drop out of education in order to start work in the zone.[328]

Aside from potential direct benefits through creation of jobs and purchase of agricultural supplies, there is clear evidence of extensive indirect economic benefits in the local areas around Liaoshen Industrial Park. The most obvious is through expanded agricultural markets, both to supply the zone's food processing plants and to cater to the demands of the rapidly increasing local population. Another major benefit for locals is the rapid growth of the market for rental accommodation in Kapeeka and its surrounding villages. There has also been a large increase in market stalls, street vending and small enterprises such as entertainment and catering supply.[329] Some villagers have begun engaging in scrap recycling and commercial use of factory waste products, including rags, plastics and oil. Kalagala, one of the villages nearest to the zone, has seen its quiet bi-weekly market expanded to a lively daily market until well after dark. In-migration has also led to increased availability of labour in local businesses and homes, since those who fail to make a sustainable living in Liaoshen's factories tend to find alternative local work rather than return-migrating.[330] The Ugandan Investment Authority estimates the number of jobs indirectly created by the park at 12,000.[331]

Image 9.3 Migrant worker rental accommodation in village near Liaoshen Industrial Park Source: Author's photograph

Though large-scale in-migration has reportedly caused some negative social effects, including an increase in crime, some degree of ethnic tension as well as pressure on local health facilities, the major population increase has led to agricultural and commercial development in the area, benefiting many. Those without the capital to invest in construction or entrepreneurship or expand agricultural production have experienced fewer benefits, leading some locals to complain of increased inequality.

323 Interview with traders' association, Kampala, February 2024
324 Ibid.
325 Musoke, 2017
326 Interviews with firm managers, Kapeeka, February 2024
327 Interviews with workers, Kapeeka, February 2024
328 Interviews with local teachers, Kapeeka, February 2024
329 Interviews with locals and field observations, Kapeeka, February 2024
330 Interviews with locals, Kapeeka, February 2024
331 UIA, 2021

9.5 Labour abuse

Though job creation has been a major benefit of Liaoshen Industrial Park, a particular concern is the extent of labour exploitation and abuse within the zone's factories. Many workers complained of low pay, hazardous working conditions, and verbal and even physical abuse from managers. Again, most of those employed are migrants from elsewhere in Uganda, as well as a significant proportion of refugees from the Congo and South Sudan and irregular migrants from Burundi. The local Baganda people mostly avoid working as assembly-line labour in Liaoshen, leading to negative stereotypes similar to those in Lekki, that locals are unwilling to engage in hard work, and to a distinct preference on the part of firms for migrant labour. The explanation from locals is that the pay is too low and the conditions too poor to make work in a Chinese factory an attractive option for any but the most impoverished or inexperienced portion of the Kapeeka population.

Image 9.4 Working conditions in tile factory, Liaoshen Industrial Park Source: Author's photograph

Jobs in Liaoshen factories are undoubtedly mostly low paid, even relative to other low-skilled local jobs such as domestic work or farm labour. Workers complained that there were many 'deductions' from their wages, not only for lunch and (in a few firms) for dormitory accommodation, but also for mistakes in production, breakages, lateness, low productivity and other issues. Some workers ascribed mistakes to errors in translation, with inexpert local translators struggling to interpret Chinese managers' instructions. Some also reported that they were not paid at all during the compulsory training period.[332]

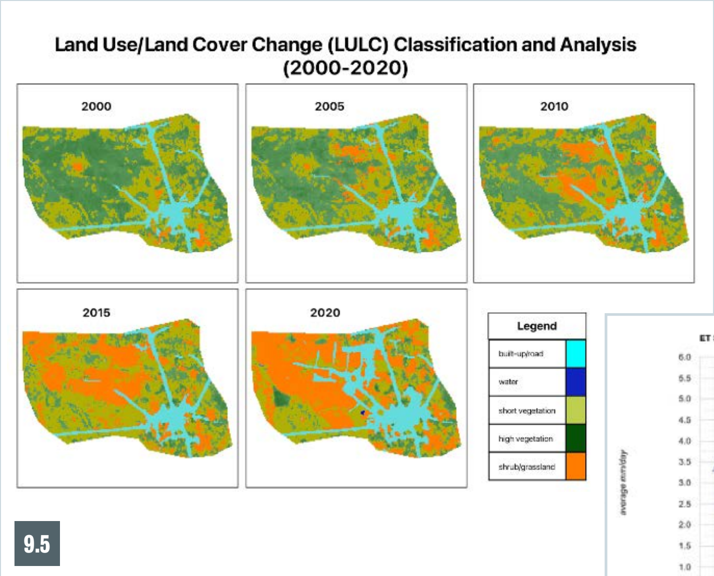
Shifts are long, typically six days a week from 7am–7pm or 7pm–7am, just as in Lekki. Again, workers complained that the pace of work was very fast, causing stress and increasing the risk of industrial accidents. Protective equipment was mostly absent and community leaders reported a number of serious workplace injuries, leading to deaths.[333] In some factories, assembly line labourers eat lunch while standing working at the production line, since they are not permitted to leave the machinery. Workers are afraid to take time off when ill, as they would not be paid for days missed and might not be permitted to return to work at all.[334] There were also several reports of women workers being dismissed for becoming pregnant, including those who had had relationships with Chinese supervisors or managers.[335]

Verbal abuse of Ugandan workers by Chinese supervisors was common, and physical violence also occurred. Many of those interviewed complained of demeaning and derogatory language, as well as, less frequently, slapping, hitting and beating. Incidences of violence had reportedly decreased since 2019 as a result of police mediation and the intervention of local district authorities, who expressed concern at the number of cases of physical abuse.[336] Because trade unions and other forms of worker organisation are not permitted in the industrial park, there is very limited opportunity for workers to express grievances. There exists no formal mechanism for workers to raise concerns, except through reporting the most heinous instances to the local police. As in Lekki, it is difficult for (already insufficient) labour inspectors to gain access to the zone to engage in any review of working conditions. In Liaoshen this situation is further complicated by the role of the president's brother as the zone's landlord and investor, which means that workers may be afraid to raise concerns over working practices for fear of local reprisals.[337] Workers are thus almost entirely unable to seek redressal of labour abuses and typically respond to unbearable working conditions simply by quitting.

9.6 Environmental change

One area of environmental contention that has been widely reported in the Ugandan media is the mining of sand from Uganda's lakes, rivers and swamps to support construction and industrial manufacturing in Liaoshen Industrial Park,

332 Interviews with workers, Kapeeka, February 2024
333 Interviews with workers and village leaders, Kapeeka, February 2024
334 Interviews with workers, Kapeeka, February 2024
335 Interviews with locals and village leaders, Kapeeka, February 2024
336 Interview with village leader, Kapeeka, February 2024
337 Wyrod, 2019



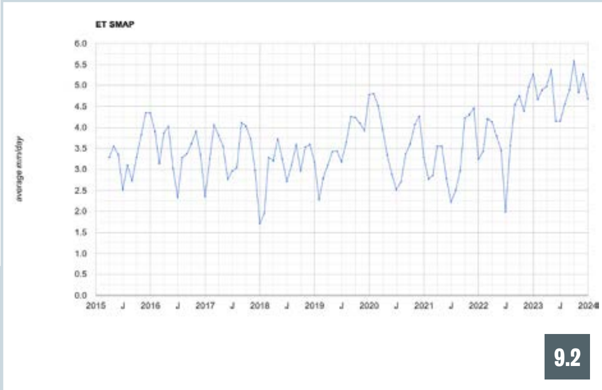


Image 9.5 Land use changes from 2000–20. Source: GIS Mapping, King's College London **Figure 9.2** Increasing evapotranspiration as a result of urbanisation. Source: GIS Mapping, King's College London

particularly in the ceramic tile industry. Sand mining in Lake Victoria has been especially controversial, with reports of illegal dredging and discharge of waste waters into the lake, but wetlands elsewhere across Uganda have also been negatively affected, in particular those in Lwera.[338] These wetlands provide water to a large population, and trap silt and other pollutants, thus making an important contribution to public health. General Salim Saleh, who heads Uganda's Operation Wealth Creation (a central government poverty reduction programme) as well as having a personal stake in Liaoshen Industrial Park, is reported to have commented that the revenue and employment generated will outweigh the environmental concerns raised around sand-mining.[339]

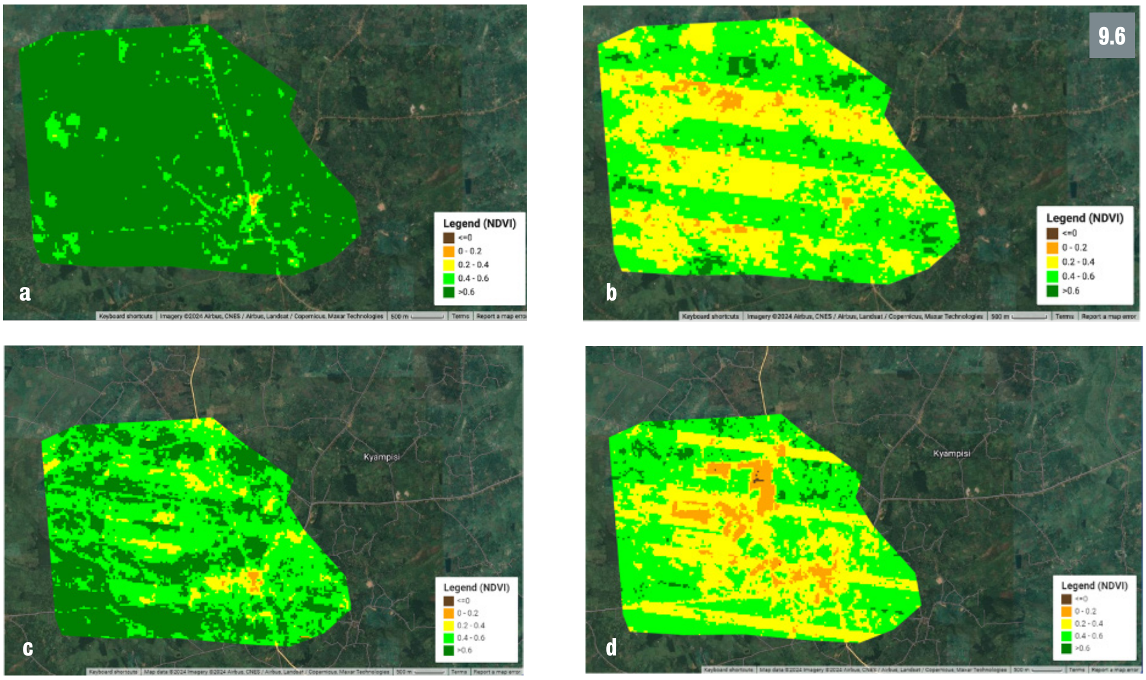
Locals in Kapeeka reported an increase in air and water pollution, as well as the dumping of waste materials, especially plastic bags, in the soil around villages. Liaoshen management confirmed that individual factories were responsible for the removal and disposal of their own waste with a lack of park-level coordination.[340] Industrial pollution of nearby rivers, including most notably the Mayanja, which flows into Lake Victoria, is also a concern. In 2021, a new water supply system in Nakaseke, aimed in part at improving water availability in Liaoshen Industrial Park, was in development, while the construction of a water treatment plant inside the park itself was underway in early 2024.[341] It remains to be seen whether these infrastructural upgrade projects will improve environmental outcomes for the local area.

Liaoshen Industrial Park has experienced some of the typical environmental impacts from intensified urbanisation and factory construction. Image 9.5 demonstrates the land use shifts from an agriculture-dominant landscape to a built-up area of factories with some remaining shrubs in the immediate vicinity of the park.

In the case of the Kapeeka region, human activities have led to land use changes and increased urbanisation, which increases land surface temperatures and dry soil. This increases evapotranspiration from the local vegetation as shown in Figure 9.2.

Image 9.6 depicts the NDVI for Kapeeka. Vegetation cover has reduced over the years due to industrial activity and urbanisation. In the broader Nakaseke District, though (not shown in Image 9.6), agricultural activity has increased owing to the enhanced demand for agricultural produce created by the expanding population and food processing activities within Liaoshen Industrial Park.

338 Monitor, 2021
339 Observer, 2018
340 Interview with Liaoshen Industrial Park managers, Kapeeka, February 2024
341 Monitor, 2024



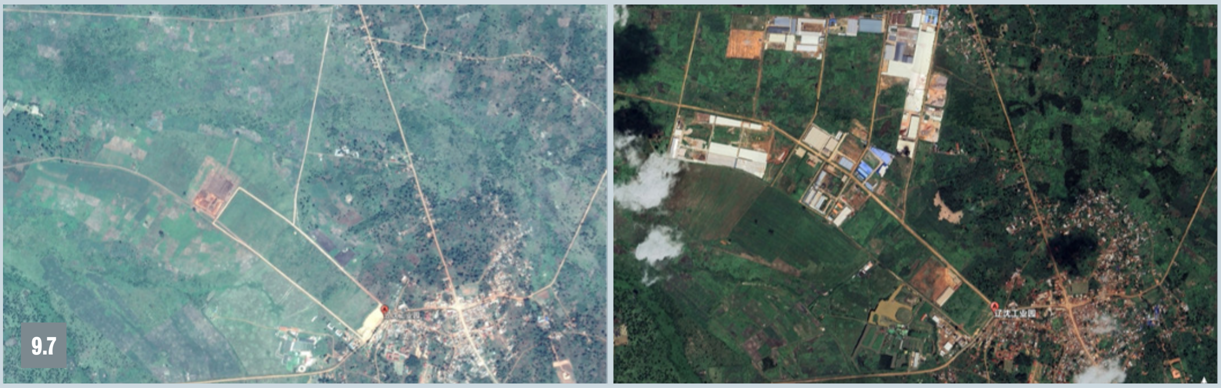


Image 9.6 Normalised difference vegetation index (NDVI). Source: GIS Mapping, King's College London **Image 9.7** Growing urbanisation and industrialisation of the Kapeeka area between 2014 and 2023. Source: Google Earth Pro (Maxar Technologies, 2023; CNES, 2023; Airbus, 2023).

9.7 Discussion

Three themes are apparent in the case of Liaoshen Industrial Park: important economic benefits of the zone for the local community combined with more mixed outcomes on closer examination; limited likelihood of long-term developmental gains for Uganda; and the gaps between rhetoric and reality.

First, it is clear that the zone has had important economic benefits for the local community, with limited negative effects on livelihoods. There has been no problematic land dispossession, commercial opportunities have expanded and, unusually, agricultural production in the wider area of Nakaseke District has increased to cater to the expanding population and food processing industries, as set out above. These positive outcomes are due to a confluence of local factors: the ready availability of land, the de facto ownership of the land by General Salim Saleh, and the zone's focus on agricultural processing. However, this positive story has complexities for the local community. Though jobs have been created, these have largely been taken by internal (and some cross-border) migrants, rather than by locals; furthermore, the indirect benefits of rentiership and commercial development are unevenly spread and tend to favour the better-off. There are thus emerging social tensions, albeit less than in the case of Lekki. Furthermore, given the lack of skills transfer, the non-emergence of Ugandan manufacturing and the growing competition between Chinese and Ugandan traders for local markets, it is difficult to say for certain that the zone will have positive impacts for Uganda's long-term industrial development.

Second, the construction and operation of the zone have had some negative impacts. These include environmental issues, for example through sand-mining and pollution, and egregious examples of labour abuse, with low pay and dismal working conditions that appear considerably worse than in Lekki and may relate to the private ownership and small size of the zone and most of its investors. Given many workers' vulnerable social status as migrants and refugees, lax legal regulations and problems in oversight, there is a striking power differential between employers and employees. As in Lekki, it is not clear that these problems are directly the result of Chinese investors' actions. Rather, they relate primarily to the nature of the zones as spaces with restricted regulatory access, and to lax local implementation of labour standards. Again, however, it seems that Chinese companies are content to work within these problematic local systems and standards, rather than challenge them, hence perpetuating their negative outcomes.

Third, as in the case of Lekki, there is a discordance between the rhetoric used to describe the zone and the reality on the ground. In this case, these tensions are most apparent in the 'Made in Uganda' narrative, which highlights the export orientation and local origin of goods while obfuscating the more limited benefits of the zone for domestic manufacturing by presenting goods manufactured by Chinese firms as exclusively Ugandan.

10. Conclusions and recommendations

On the basis of a multi-method analysis of China-associated EDZs in Africa, this report has provided in-depth discussion and analysis of the characteristics and impacts of such EDZs. Based on our findings, it is possible to draw four key conclusions:

1. **Expectations and reality are mismatched**: Narratives produced by China and some host country governments about the potential success of China-associated EDZs tend to convey excessive expectations that are not matched by the subsequent realities of zone development. Many of the zones are built based on promises of massive employment generation and attraction of large numbers of investing companies, supported by a typical set of positive narratives. However, the findings indicate that zones underperform along these indicators in most cases – jobs, investments and exports are much more limited than predicted, and sometimes ready-built factories in zones are not being used at full capacity. In the worst cases, zones fail to take off entirely. The large-scale planning of zones, with extensive land expropriation at the outset, may be too ambitious, and may exacerbate the impact on local populations. This can result in disappointment among the host country population.

2. **African states have agency in management:** Chinese companies and government entities play more pronounced roles in the financing and construction of China-associated EDZs than in the ownership and management of zones after their establishment. This suggests a certain degree of African agency in decisions about EDZ development, drawing on external support from China when this is needed to finance and build the EDZs, but ensuring direct host country involvement in the operation of the zones once these have been established. This diminishes the possibilities for political, security or sovereignty impacts resulting from involvement by the Chinese state in the development of EDZs.

3. **Impacts are meaningful, not transformative:** The economic impact of China-associated EDZs is meaningful but not transformative for the host country. The investors attracted, the extent of industrialisation, the exports generated and the jobs created are all important contributions that matter for companies, peoples, localities and even the national economy. But the impact is not transformative at the macro-economic level, as was the case with China's own SEZs from the 1980s to 2000s.

4. **New inequalities have emerged:** A key but often underappreciated problem with EDZs is the inadequate consideration of inclusive growth aspects, including failure to take into account the impact on livelihoods of local populations and migrants. While EDZs provide new income generation opportunities for both these groups, such as through factory work and, for locals, new commercial activities, these opportunities emerge in the context of significant hardship in terms of loss of livelihoods, dispossession without adequate compensation, social disruption and lack of social cohesion, poor working conditions, labour exploitation and abuse, health and safety risks and environmental damage. For the most deprived local populations, few opportunities emerge at all.

Some of these problems were similarly present in the development of economic zones in China, whereas other challenges are specific to the attempted translation of this model into the African context. Problematic impacts are not necessarily a result of the EDZs being China-associated, but often reflect much broader problems with the concept, development and implementation of

EDZs that require greater attention from policymakers. Specific advantages in China's own development of SEZs, including both domestic and international economic and political factors relevant to the historic time period, meant that China was fortunate to be able to transform its entire economy whilst enduring these problems. In the case of China-associated EDZs in Africa, many similar problems are encountered but thus far there has been no such transformative impact.

The key problem areas identified in this report should feature as a priority for policymakers to address, as a concern in the reporting of journalists and advocacy groups, and in academic analyses of EDZ establishment and operations. Policymakers aiming to improve the performance of zones should focus on strengthening their record in providing for inclusive growth. In terms of policy recommendations that can assist in this process, we propose an agenda to achieve greater zone-level social responsibility (ZSR), ensuring that zones and their authorities and managers do more to act in a way that benefits society, people and the environment, just as corporate entities aim to achieve through CSR. Within this framework, policymakers and government officials should aim to:

a. **Assert agency** in zone management and ownership to advance their domestic goals, regardless of who finances and constructs the zone;
b. **Realistically plan** zone development, avoiding excessive expectations of economic outcomes that are then not realised;
c. **Foster integration** of zone master plans into regional urban development plans for better coordination of economic and social benefits;
d. **Ensure adequate compensation** is paid to – and received by – those who have been dispossessed of their land in the process of zone development;
e. **Improve communications and outreach** strategies to garner greater public and local support for the project;
f. **Extend benefits from improved infrastructure** to local populations (roads, energy, water, waste management, information and communication technologies, ports and others);
g. **Create linkages to the local economy** by facilitating access of local firms and workers to the zone, port or park, as suppliers, service providers, distributors and recyclers;
h. **Mitigate negative social impacts** of zones, such as by allowing farming to continue on not-yet-developed zone land to boost local livelihoods and food security; and
i. **Strengthen legal and regulatory arrangements**, such as social, labour, environmental and anti-corruption standards, and their mechanisms for enforcement within zones.

Apart from the internal political issues outlined in Section 7, no significant political, security or sovereignty impacts could be identified from specific Chinese involvement in the establishment and operation of EDZs in Africa. EDZs are zones created to achieve economic objectives and do not appear to have specific properties that could significantly advance any political or security aims or compromise national sovereignty in any substantial way. Despite often being funded and built by Chinese companies, the management and operation of such zones post-construction is frequently in the hands of local entities, diminishing the possibilities of political involvement by the Chinese state through the zones. Yet, ports associated with such zones could offer geostrategic benefits to China, perhaps especially where Chinese SOEs have a role in their day-to-day administration, and more research remains to be done on this issue. Moreover, the intensified collaboration between China and host countries in building EDZs, and associated improvements in relations between China and host countries, benefit China and strengthen its influence in Africa. Countries concerned about political, security or sovereignty impacts of China-associated EDZs should therefore focus on China's growing role in Africa and how positive or positively narrated collaborations shift local African perceptions to favour China.

In conclusion, translating a Chinese approach to development through EDZs into the local African context is not straightforward. Drawing on relevant issue areas covered throughout this report, Table 10.1 juxtaposes the approaches commonly taken in China's SEZs from the 1980s to 2000s with those typically found in China-associated EDZs in Africa. The findings show that China-associated EDZs in Africa are much more open to foreign and private ownership and participation in zone development than were the SEZs in China, albeit with a significant role for host country states in initiating and managing the zones. Some African EDZs have followed the Chinese-style layout of zones with the development of integrated townships and accompanying urbanisation effects. China-associated EDZs in Africa, however, rarely yield considerable, economy-wide transformative gains as happened in China, yet they have been found to reproduce many of the social, labour and environmental impacts, both in terms of opportunities as well as the multiple problems associated with such zones. Of course, the China-associated EDZs in Africa may still have transformative impacts in the future, just as it took some time until China's own SEZs took off. Yet, while the future of EDZs in Africa remains uncertain, attempts at replicating China's approach to zone-led development need to be 'smart', factoring in specific contexts in Africa, adapting the zones to local circumstances and the contemporary era, and identifying and preventing potential negative side effects of zones through appropriate ZSR.[342]

342 Knoerich, Mouan & Goodburn, 2021

	Zones in China (1980s–2000s)	**African China-associated EDZs**
Zone characteristics		
Zone ownership (state/private)	State-owned	State-, private-, or mixed-owned
Zone ownership (nationality)	Domestic (some mixed zones not labelled SEZs)	Domestic, foreign, mixed
Zone layout	Wide spatial layout	Some modelled on Chinese-style layout
Construction company	Domestic	Mostly foreign/Chinese construction companies
Zone management	Domestic	Domestic, foreign, mixed
Investors in zone	Foreign, Hong Kong/Macau/Taiwan, domestic	Foreign (often Chinese), some domestic
Economic impacts		
FDI attraction	Large-scale attraction of FDI with transformative impact	FDI meaningful but not transformative
Industrialisation	Massive industrialisation	Industrialisation meaningful but not transformative
Export orientation	Export-orientated with transformative impact No domestic market orientation	Exports may be meaningful but not transformative Strong domestic market orientation
Job creation (direct and indirect)	Creation of millions of jobs	Job creation meaningful but not transformative
Spillovers (skills, knowledge)	Some spillovers	Limited spillover effects
Social impacts		
Urbanisation	Integrated townships	Integrated townships in many cases
Land transfer to zone	Expropriation of collectively-owned land	Variety of land regimes Dispossession with frequently inadequate compensation
In-migration	Internal migrants from rural China employed in factories Business opportunities for locals (services, room rental market) creating indirect jobs	Internal migrants, and some locals, employed in factories Business opportunities for locals (services, room rental market) creating indirect jobs Other locals employed in menial jobs
Inequality	Increased wealth inequality Opportunities for women from zone employment	Increased wealth inequality (some loss of local livelihoods) Opportunities for women from zone employment
Health and safety	New health and safety risks	New health and safety risks
Labour impacts		
Pay	Low, but higher than outside zone	Low, but higher than outside zone
Working conditions	Poor, labour abuse	Poor, labour abuse
Dormitory labour	Restrictive housing in on-site dormitories Local housing in villages	Some restrictive housing in on-site dormitories Local housing in villages
Environmental impacts		
Biodiversity loss	Increase	Increase
Pollution and health hazards	Increase	Increase
Food security	Loss of some arable land	Loss of some arable land

Table 10.1 Similarities and variations of African EDZs compared to SEZs in China

Annexe 1: EDZ database

The descriptive statistics on zone characteristics were drawn from a database of China-associated EDZs created specifically for this report. This China-associated EDZs database was compiled through information obtained from publicly available sources (websites of zones, government documents, reports from inter-governmental and non-governmental organisations, academic articles, consultancy reports, media articles and other sources), using Adarga's Vantage knowledge platform for rapid AI-driven processing of large volumes of unstructured data from multilingual sources. The database included zones where one or more of the following was at least in part undertaken by a Chinese actor, for example an SOE or development bank: (1) ownership; (2) finance; (3) construction; or (4) operation of the zone. A total of 65 zones were initially identified. Fifteen zones that had multiple Chinese firms as investors, or which had been advised by China on zone establishment or operation, but where none of the four criteria above were apparent, were excluded from the analysis, reducing the number of China-associated EDZs to 50.

Annexe 2: GIS methodology

To map changes in the landscape and environment of the zone areas, we analysed the Land Use and Land Cover (LULC) change of eight selected EDZs using the Global Land Cover and Land Use Change Dataset (GLAD), which comprehensively quantifies forest extent and height, cropland, built-up lands and surface water. The analysis was carried out for the period between 2000 and 2020 at a spatial resolution of 30 metres (Landsat Collection).[343] The GLAD tool, derived from the Landsat Analysis Ready Data (ARD), provides a 16-day time series of globally consistent, tiled Landsat normalised surface reflectance data from 1997 to the present, updated operationally every 16 days.[344] We also used the Digital Earth Africa platform to supplement some of our initial analysis.[345] Given the considerable variability in past Landsat-5/7 images over time and across different regions, an Open Street Map was used to map the different road, rail and transport networks. We demonstrate the change over time in urbanisation, industrialisation and growth using satellite images from Google Earth Pro Images and Living Atlas platforms.

Annexe 3: Fieldwork methodology

In Nigeria, we carried out semi-structured interviews in person with local villagers, migrant workers, other workers, local government representatives, state government representatives, traditional authorities, EDZ representatives, and firm managers across domestic Nigerian and Chinese firms in February 2024. The interviews were carried out in a mix of English and Yoruba languages with the help of local collaborators. We adhered to the local custom of approaching villagers through the traditional and government authorities, that is, through village chiefs (baale), local administrators and traditional rulers. A key challenge was the difficulty in interviewing women or entering villages independently to speak to villagers. All methods were approved by the Research Ethics panel of King's College London.

In Uganda, we carried out semi-structured interviews in person with local villagers, migrant workers, local government officials, national ministers, EDZ representatives, and firm managers across Ugandan and Chinese firms in February 2024. The interviews were mostly carried out in English with a few interviews in Luganda and Swahili. We received Research Ethics clearance from our partner Ugandan university through the procedures of the Ugandan National Council for Science and Technology, as well as approval from the Research Ethics panel of King's College London.

343 Potapov et al., 2020
344 Ibid.
345 Digital Earth Africa data is licensed under the Creative Commons by Attribution 4.0 licence.

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