Chapter 3

Industrial Land

Lack of access to industrial land can cripple efforts by both smaller and larger firms to take advantage of market opportunities and attain a competitive operational scale. Smaller firms need land to set up and expand a business, larger firms need it to expand their factories, and both can benefit from using land as collateral to obtain loans.

It is ironic that land is a constraint for most manufacturing firms in land-abundant Sub-Saharan Africa. As all manufacturing firms need industrial land, equipped with utilities and transport links to markets, Sub-Saharan Africa’s huge deficit in industrial land puts land policy at the core of its industrial development agenda (Limão and Venables 2001; Dollar, Hallward-Driemeier, and Mengistae 2004; Hausman, Lee and Subramanian 2005). In the early 1980s similar problems also emerged in China and Vietnam. But efficient government facilitation of access to industrial land, first in special economic zones and then throughout the domestic economy, resolved the land constraint in China and made them less binding in Vietnam.1

Effects of Industrial Land on Competitiveness

This section discusses what kind of land firms need, how land policy shapes the existing pattern of land use, and why the availability of affordable and accessible land is vital for the growth of light manufacturing.

Affordable Land, Reliable Utilities, and Accessible Locations
Qualitative interviews suggest that problems acquiring land often prevent firms in Sub-Saharan Africa with 4–5 employees from growing into businesses with more than 10–15 employees. To do so, they would need a larger workspace connected to affordable and reliable utilities and offering reliable transport links to markets for inputs and outputs. Most small firms are located in the owner’s home or in small workshops. Connecting to utilities requires large fixed investments that are typically beyond the means of small informal operators.
Small business owners typically have insufficient savings and retained earnings with which to purchase industrial land to expand the business. Where the government tries to provide factory shells outside cities, transport costs for hauling raw materials and products are an additional constraint. In a rare model where government allocates small plots of industrial land to small cooperatives, the rules of the cooperatives make it difficult for small firms to grow.

Chinese governments, especially at the local level and in coastal provinces, have gradually developed policies (initially inspired by the early success of a few special economic zones) that enable smaller firms to expand either in organic (naturally developed via market forces) or synthetic (set up by authorities) industrial clusters or in industrial parks that jointly ease land and infrastructure constraints. For firms employing 35–50 persons and looking to expand production, the local governments are increasingly able to facilitate entry into industrial parks that provide “plug-and-play” factory shells to ambitious entrepreneurs.

Problems of access to industrial land diminish for larger firms, although large firms in Sub-Saharan Africa have much more difficulty accessing land than firms in similar size categories in East Asia. In Ethiopia, exporters (typically the larger firms) in the preferred sectors (apparel and leather products) receive preferential access to cheap industrial land. More generally in Sub-Saharan Africa, industrial zones are usually reserved for large exporters, most often firms with foreign ownership (Farole 2011).

Access to Larger Plots of Land and Economies of Scale

The contribution of industrial agglomeration to the growth of firm productivity has been confirmed for the developed countries (Ciccone and Hall 1993; Lall 2004; Lee and Zang 1998), but similar effects are evident in Chinese clusters as well (Fan and Scott 2003; He and Zhu 2007; Pan and Zhang 2002). Industrial agglomerations in China and Vietnam enable firms to avoid problems related to inadequate land markets and difficulty purchasing large plots of land by locating them in industrial parks where they can reap scale economies.

Clustering in China generated large spillovers, most visible in liberalized and export-oriented industries in the 1980s. And by the 1990s, the spillovers from clustering were visible in nearly all industries, confirming the benefits of China’s industrial clustering strategy, fashioned after that of the Republic of Korea (Lee and Zang 1998). The strategy had clear payoffs for the labor-intensive and globalized industries, particularly in coastal regions such as Zhejiang, Jiangsu, and Guangdong provinces (He and Wang 2010). Clustering, often as a direct result of local government initiatives—for example, the effort of county leaders in Xinji Municipality, Hebei Province, to develop a local specialty in leather processing and manufacturing—also contributed more broadly to China’s growing industrial competitiveness (on Xinji, see Blecher and Shue 2001; Wang 2001; He, Wei, and Xie 2008).
The Chinese industrial parks with access to plug-and-play factory shells enable firms to scale up to hundreds or thousands of employees in a few years. By incurring the fixed costs of utility-equipped factory shells, the government precluded the firms’ need for finance to construct the factories. In recent years, Chinese industrial parks have gradually created one-stop shops that allow firms located under their jurisdiction to simplify and speed up official registration and regulatory transactions. Western buyers have an appetite for large orders, and China’s industrial parks allow firms to scale up rapidly to meet the buyers’ needs. Such arrangements reduce search and transaction costs and make information easily available to buyers and sellers.

In Vietnam, the government has a very location- and industry-specific industrial land policy that actively courts large manufacturing firms—usually foreign direct investment–financed or state-owned enterprises—and gives them large facilities in well-designed industrial parks, much like in China. Although this strategy has fueled Vietnam’s export-led growth, success is mixed. The government seems to have overinvested in about 233 parks, which have an average occupancy rate of 50 percent. The infrastructure investments to increase the supply of industrial land have been very successful in parks near cities but not in remote or backward areas, where the objective is to reduce poverty. The industrial parks have worked especially well for larger foreign firms. Domestic investors, especially smaller ones, have access to the smaller and older parks in preferred sectors. Most small and medium enterprises are dispersed across cities in small organic clusters that the government has not nurtured.

In Sub-Saharan Africa, distorted (or missing) land markets and an inefficient construction industry make developing industrial land costly. So, governments are turning to industrial parks, financed and developed by foreign investors, mostly from China. Most domestic firms outside the parks are located randomly, many in small organic clusters. By offering better industrial land in the zones, Tanzania has attracted some foreign direct investment in agroprocessing.

Land for the Backward Integration of Supply Chains

The comparative value chain analysis identifies land as a key input for the production of heavy-weight, high-volume, farm-grown raw materials for light manufacturing such as agroprocessing (dairy and wheat), leather (ranches where cattle are bred for the meat and leather industries), and wood (planned afforestation; see Global Development Solutions 2011). The cost savings from the large-scale production of local raw materials can make a significant difference in the competitiveness of light manufacturing.

For landlocked Ethiopia and Zambia, the gains from co-location of materials production and processing increase with distance from the coast. But for coastal countries, too, the potential gains from the backward integration of the supply chain for local raw materials are large. Sourcing domestic raw materials
requires commercial land, but the absence of a land market in Ethiopia hinders commercial farming and forestry. Land policy limits the entry of large farmers: Ethiopia has only two or three large farms with industrial operations. The success associated with exceptional cases—notably rose plantations that now employ as many as 50,000 workers—illustrates the large potential payoff to enterprise-friendly reform of landholding arrangements.

**Land for Affordable Housing**

Shortages of residential housing and affordable transport for industrial workers in Sub-Saharan Africa lead to some combination of higher wages (to attract workers) and higher living costs (to travel to and from distant workplaces). To stay close to their workers (and customers) who cannot afford long commutes, small formal metal producers in Dar es Salaam and Addis Ababa prefer to risk fines for operating workshops encroaching on the sidewalks or in crammed compounds rather than relocate to larger factories in peripheral areas, which lack affordable residential space and good transport. And with traffic congestion, commuting shortens working hours.

Worker housing is also a problem in Vietnam, but public transport allows large numbers of workers to commute over fairly long distances to reach even the larger industrial parks on the periphery of Hanoi and Ho Chi Minh City. China’s state enterprises have a long history of building housing in or adjacent to factory compounds. Despite large-scale privatization of urban housing beginning in the 1990s, local governments often build housing adjacent to factory sites to accommodate migrant workers, even in less prosperous inland provinces such as Jiangxi. Equipped with the basic amenities, hostels are often free for employees. The proximity to work saves transport costs. This policy helps to contain wage pressures and allows firms to compete on low profit margins. It also allows workers to save a very high proportion of their wages, which they often use later as capital to open new businesses. Large-scale migration of workers, which has moved millions of Chinese far from their original homes, often involves lengthy family separations. In China, workers willingly shoulder the burden of these social costs in pursuit of higher incomes.

**Marketing of Goods: Land for Warehousing, Showrooms, and Trading Inputs and Outputs**

The qualitative interviews show that few small and medium enterprises in Sub-Saharan Africa have access to land for business transactions. Without storage space, owners purchase inputs at retail rather than wholesale prices. Even in one of Addis Ababa’s wood clusters on government-allocated land, the 35 smaller
firms are unable to find an individual or common storage facility. The same constraint for grain-milling firms leads to high spoilage rates due to mice and rain. The paucity of showroom space forces small producers to manufacture products only on order. Showrooms would facilitate information sharing between customers and producers on variety, quality, fashions, and designs. But in Sub-Saharan Africa’s small and medium enterprises, customers can choose only from photographs of products made for someone else. To obtain new orders, producers rely mostly on repeat customers and word-of-mouth references.

Sub-Saharan Africa’s producers do not have easy access to a variety of high-quality inputs and cannot readily purchase large volumes of raw material to satisfy large and time-sensitive orders. The absence of input markets raises the cost of information and search and undermines customer-seller relationships that evolve through frequent interactions and facilitate the delivery of large orders on time.

These are exactly the sort of difficulties that development-oriented local Chinese governments have addressed with great vigor. Previously cited examples in Yiwu, Zhejiang Province (see Ding 2010) and Xinji, Hebei Province (see Blecher and Shue 2001) could be replicated many times over. They show that local governments identified opportunities for profitable expansion, pushed local businesses to adopt measures needed to grasp such opportunities, constructed suitable facilities, and provided (or arranged to obtain) suitable information and advice.

A Possible Solution from Asia

This section considers possible solutions from China’s plug-and-play industrial parks and Africa’s experience so far with these parks.

China’s Plug-and-Play Industrial Parks Catering to Small and Large Enterprises

Many studies have documented the contributions of China’s coastal special economic zones as platforms for attracting export-driven foreign direct investment and as testing grounds for key reforms. The Shenzhen Special Economic Zone next to Hong Kong SAR, China, transformed a fishing village into a leading global city of 8 million people in less than 30 years. China’s smaller industrial parks are less well known, but they too have contributed substantially to the nation’s astonishing industrial development.

China has more than 1,000 industrial parks driven by a central government policy encouraging their development. Many cities and counties have emulated the large zones of the central and provincial governments. Local governments
develop industrial parks to spur local growth and increase tax revenues (Li and Zhou 2005). The parks have enabled many small and medium Chinese enterprises to grow from family operations focused on domestic markets into global powerhouses. But not all Chinese industrial parks have been successful; the better ones were built on existing or potential industrial strengths—in other words, on local comparative advantage.

China’s successful industrial parks provide enterprises with security, good basic infrastructure (roads, energy, water, sewers), streamlined government regulations (through government service centers), and affordable industrial land. They also provide technical training, low-cost standardized factory shells, and free and decent housing for workers next to the plants. By helping small Chinese enterprises to grow into medium and large enterprises, the country has avoided a shortage of medium firms—the “missing middle”—evident in most Sub-Saharan countries. China’s parks focus on specific industries, such as leather and textiles in Nanchang, furniture in Ji’an, and electronics in Ganzhou (for further examples, see Zeng 2008; Sonobe and Otsuka 2006; Sonobe, Hu, and Otsuka 2002).

More advanced industrial parks offer market analysis, accounting, import and export information, and management advice and help firms to recruit and train workers. For example, parks near the Yangtze River delta place a strong emphasis on helping firms to get business licenses and hire workers. Parks may also have facilities to address environmental challenges.

The plug-and-play industrial parks have greatly reduced start-up costs and risks for small and medium enterprises that have sufficient scale, capital, and growth prospects to take advantage of larger facilities at a phase in their development when they are unable to obtain bank loans. They have also facilitated industrial clusters, generating substantial spillovers as well as economies of scale and scope for Chinese industries. The clusters are facilitated further by government support for input and output markets.

In a nutshell, Chinese governments, especially at the local level and particularly in the central and southeastern coastal provinces, have taken the initiative and moved energetically to foster the development of small and medium enterprises by providing public goods and market information about suppliers and buyers rather than large-scale subsidies. Gradual reforms have pushed the cost of energy and utilities in the direction of market prices; firms that fail to pay their bills cannot expect to have continued access to electricity and other utilities. Competition is intense among firms in light manufacturing (and in many other sectors of China’s economy). China’s economic reforms have vastly reduced opportunities for failing firms, especially small and medium operations, to receive government bailouts. China now has several hundred million migrant workers, with the largest flow of migrants from west to east. China’s coastal cities have become magnets for millions of migrant workers, many of
whom live and work in various types of special zones and industrial parks. The
design and operation of these zones and parks facilitates employers’ access to
large numbers of workers and contributes to the migrants’ efforts to achieve
their own goals of upward mobility through hard work and diligent saving.
Many Chinese migrants remit substantial funds to their original homes to
support parents, spouses, and children left behind, to build new housing, and
sometimes to support future business plans.

In Africa, by contrast, workers spend the bulk of their incomes on housing,
food, and transport and achieve much lower savings rates than their Chinese
counterparts. Reforming legal and administrative provisions that limit access
to land, especially industrial plots connected to utilities and convenient trans-
portation, will encourage the growth of manufacturing enterprises that can
raise the productivity, and hence the wages, of large numbers of workers. In this
way, growing numbers of low-income Africans can begin to access the sort of
benefits that have improved the lives and prospects of many millions of Chinese
workers during the past several decades of reform.

Policy Recommendations for Africa

African governments should develop such plug-and-play industrial parks next
to main cities and ports. This would eliminate in one stroke the very high inland
transport costs for exporters in Africa.

As in China, industrial parks can bypass difficult land reform, which can
take years. African governments can test a variety of policies before gradually
applying them more widely. The demonstration effects can overcome political
economy constraints.

But industrial zones are not new to Africa. Why have they failed (box 3.1),
and why would they work now?

Box 3.1

Why Have Industrial Parks Failed in Africa?

Industrial parks have played a catalytic role in facilitating industrial upgrading and
export-led growth in East Asia, most notably in “tiger economies” during the 1980s
and in China since the early 1990s, but also in Latin America and parts of South Asia.
The African experience with industrial parks over the past two decades, which has
mostly involved traditional export-processing zones, has been less spectacular. With
the significant exception of Mauritius and the partial (initial) success of Kenya, Mada-
gascar, and Lesotho, most African zones have failed to attract significant investment,
promote exports, or create sustainable employment. Only Mauritius has used industrial parks as an effective vehicle to support economic transformation.

While many factors that contributed to the failure of individual zones are very specific, some have held back the potential of industrial parks across Africa:

- **Poor strategic planning: a mismatch with comparative advantage.** One of the striking features of many zones in Africa is that the few investors they have managed to attract are spread across a wide range of manufacturing sectors. This contrasts with hugely successful Asian examples like the Hsinchu Science and Industrial Park in Taiwan, China (see Hsueh, Hsu, and Perkins 2001; Amsden and Chu 2003) that set out to build industry clusters. One of the reasons is that many zones have been initiated without careful studies of market demand or strategic planning. They are poorly targeted (often at sectors well outside the country’s comparative advantage), and few have been integrated into their country’s broader economic policy framework.

- **Poor choice of location.** Zone location is determined too often by political rather than commercial or economic considerations. Rather than co-locating zones with key gateway infrastructure, many countries have attempted to locate at least one zone in a “lagging” or remote region. And few have done enough to address the infrastructure connectivity, labor skills, and supplies that these regions lack.

- **Insufficient investment in infrastructure.** Some African zones offer infrastructure inside the zones that, while usually not world class, is of higher quality than is typically available in the domestic economy. But infrastructure in many zones mirrors the worst domestic experiences, including water shortages, electricity outages, and health, safety, and environmental shortfalls. Zones that lack even basic internal infrastructure have little chance of success. Moreover, in many cases infrastructure stops at the zone gates, with investors having to deal with poor roads, port-related delays, and little access to social infrastructure.

- **Poor implementation capacity and lack of authority.** The authorities responsible for developing, promoting, and regulating African special economic zones often lack resources as well as the institutional authority and implementation capacity to carry out their mandates. The resulting confusion in procedures and controls—most notably in customs administration—undermines the competitiveness of many African industrial parks.

- **Lack of high-level support and policy stability.** Many African countries have shown only a half-hearted commitment to zones, passing zone laws but not implementing regulations or providing adequate resources for management, infrastructure, and promotion. Fundamental “rules of the game” often change from year to year, and many programs have suffered from poor coordination of trade policy and a failure to establish a policy environment that offers investors transparency and predictability.

In addition, African industrial parks may be lagging because of poor timing. The rapid growth of industrial parks on a global basis and their success in contributing to export-led growth benefited from an unprecedented era of globalization in the 1980s and 1990s and the rise of global production networks. But African countries, most of which only launched programs well into the 1990s and 2000s, face a much more competitive environment, with the emergence and entrenchment of “factory Asia,” the expiration of the Multifiber Arrangement, the consolidation of production networks,
and the recent slowdown in demand in traditional export markets. Some countries may have developed the wrong zone model at the wrong time.

Source: Farole 2011.

Note: Lesotho does not have a zone program, but it does combine the same policy instruments to support export manufacturers, including a special fiscal and administrative regime along with public provision of industrial infrastructure.

Notes
1. While China did experience some land issues, particularly at the local levels regarding the compensation paid to farmers for their land, these issues were relatively small compared to the progress made in making industrial land available to entrepreneurs.
2. For a review of policies, investment incentives, and performance of policy in support of the development of the manufacturing industry in Vietnam, see Le (2010).
3. Around 1998 the government designed special fiscal incentives for new and existing firms to locate in remote land development projects for ethnic minority areas, mountain areas, islands, and other underdeveloped areas. A preferential system was set up to assist domestic investors by allotting or renting land according to land legislation and building the industrial zone's infrastructure for renting them. After 1998 domestic investors also benefited from reductions in the land use tax.
4. In both Vietnam and China most firm owners also provide free meals. While this is an innovative solution to one of the leading constraints on firm expansion, hostels that separate the worker from the family for long periods have high social costs. Unless this model is adapted to the local socioeconomic conditions, policy makers and workers in countries with different political systems and beliefs may have reservations about it.

References


