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CHINESE INVESTMENT IN GHANA'S MANUFACTURING SECTOR

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Abstract

This paper uses Ghana as a case study to illustrate the extent to which Chinese manufacturing firms are driving manufacturing in an African country. Through the combination of desktop and field research, the author finds that the total number of Chinese manufacturing investments in Ghana indeed has been increasing during past decade, but quite a few projects were abandoned or not implemented due to concern over the unfavorable investment environment. Small and large manufacturing projects can be found in different sectors, from plastic, steel to pharmaceuticals and others. All the manufacturing investments target at the local and regional market, either taking advantage of local raw materials or seeing opportunities in the market of little competition. “From trade to invest” and clustering are identified as the main patterns for Chinese investors to settle down in Ghana. Chinese firms have local suppliers of simple raw materials, but the industrial supplies are all imported from abroad. Learning from Chinese business models, a few local businessmen start their own manufacturing projects, mostly in the sector of plastic recycling, but lack of capital appeared to be the main obstacle keeping local players from moving up the value chain. The weak economic environment of Ghana itself proved to be limiting the technology transfer and local linkage between Chinese firms and Ghanaians.

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1. Introduction

Industrialization is a priority on many African countries' development agendas. The growth of manufacturing industries not only raises levels of employment, but it can also drive structural transformation, an essential step toward higher standards of living. China and many Asian countries have successfully transformed from rural economies into manufacturing powerhouses. Recently, rising production costs at home as well as a desire for overseas market expansion have driven more and more Chinese and Asian manufacturing firms to invest in Africa. Will their arrival accelerate the growth of the manufacturing sector in Africa? Will they contribute to industrialization in African countries in general? Will they bring employment and technology to local people? These questions need to be investigated in order to evaluate the impact of Chinese and Asian investments.

The following report uses Ghana as a case study to illustrate the extent to which Chinese manufacturing firms are driving manufacturing in Ghana. According to data on investment approvals by the Ministry of Commerce, as collected by researchers at the China-Africa Research Initiative at the Johns Hopkins University's School of Advanced International Studies, 34 Chinese manufacturing investments have been approved for Ghana, making it fourth—behind only South Africa, Nigeria, and Ethiopia in Sub-Saharan Africa—in terms of the number of approved manufacturing investments.[1] However, the actual number of Chinese investments in Ghana is much larger. We discuss this discrepancy further below.

The findings of this report are based primarily on the results of field research conducted in Ghana from July 6 to July 31, 2014. Table 1 reports the number of firms registered according to three separate sources: the MOFCOM approval list, which is based on voluntary reports of Chinese firms that plan to invest in Ghana—but may not actually end up implementing the projects—and registration lists of Chinese and Indian companies from the Ghana Investment Promotion Center (GIPC) and the Ghana Free Zone Board (GFZB). Using these sources, we mapped out the overall state of Chinese investments in Ghana's manufacturing sector. Out of 183 registered Chinese manufacturing investors in Ghana—according to the GIPC and GFZB lists—we were able to visit 33 selected companies for in-depth interviews. The companies were selected through snowball sampling so as to better understand Chinese investors' linkages with other industries, as well as clustered development patterns. Interviewees included factory owners, managers, Chinese employees, and Ghanaian employees. For each company, the firm's history and data were obtained using a semi-structured and open-ended questionnaire.

Table 1: Chinese manufacturing investment in Ghana

	GIPC	GFZB	MOFCOM
Total Chinese Projects	560	4	136
Projects registered in Manufacturing	179	4	34
Confirmed Manufacturers in operation	29	4	9

Source: GIPC as of July 2014, GFZB and MOFCOM as of December 2014

Additionally, we met with officials from the Chinese embassy, leaders of the Chinese Chamber of Commerce, several Ghanaian entrepreneurs, and Ghanaian officials in the GIPC, the Ghana Free Zone Board, the Ministry of Trade and Industry, the Association of Ghanaian Industries, and the Ghana Plastic Manufacturer Association. Through semi-structured interviews, interviewees expressed their viewpoints about the impact of Chinese and Asian investment on local development and the extent of technology transfer. They also provided insights into local policy frameworks and the general business environment related to Asia-Ghana economic interactions.

2. Background on the Ghanaian Economy and the Sino-Ghanaian Relationship

Our fieldwork coincided with a serious economic setback in Ghana. When Ghana discovered the Jubilee oilfield in 2007, people expected that the oil wealth would push forward the development of the stable and democratic nation. Yet three years after oil production began in Ghana, the country realized that its oil production was much smaller and slower than originally anticipated.[2] Having expected an influx of petrodollars, the government had already spent a lot to raise civil servants' wages to buy popular support during an election period, before they secured oil income. This increased the public finance deficit to 11.8 percent of GDP in 2012. Rising wages in turn caused inflation to rise to 14.8 percent in 2014.[3] Another consequence was that imports rapidly increased, pushing the current account deficit to 12 percent of GDP in 2013.[4] The USD/GHS exchange rate fell from 1.9 in August 2012 to 3.8 in August 2014, with the cedi losing half of its value. Workers demonstrated on the streets to protest against their deteriorating living conditions. The government finally decided to seek financial help from the International Monetary Fund (IMF) in August 2014, recognizing that the country's economy was in peril.

China viewed Ghana as a close socialist friend when both countries established diplomatic ties in 1960. The relationship was suspended after Ghana's first president, Kwame Nkrumah, was overthrown in 1966. Ties were restored in 1972 and the bilateral relationship has been growing at a stable pace since then. During this period, China offered Ghana a number of aid projects including farms, textile mills, and hospitals. Since 2000, the Chinese government and Chinese banks have offered a large number of concessional and commercial loans to Ghana for infrastructure construction in the telecom, energy, fishing and transportation sectors. In particular, an ambitious Master Facility Agreement was signed on December 16, 2011 between the China Development Bank (CDB) and the Ghanaian government. The US$3 billion commercial rate loan was to be divided into two equal tranches. Twelve projects were identified as eligible for financing by January 2012, including roads, ports, railways, and industrial zones.[5] The loan was supposed to be secured and repaid by Ghana's oil revenue, despite criticism from the opposition party for using oil revenues as a guarantee. However, the second tranche of US$1.5 billion was canceled later by the Ghanaian cabinet due to the country's precarious external debt situation.[6]

Another event that attracted international attention was the arrest and deportation of hundreds of illegal Chinese gold miners in Ghana in June 2013. In our interviews with Chinese manufacturers in Ghana, many expressed sympathy for the arrested miners, but nobody seemed to be worried about anti-Chinese sentiment.

3. Methodology

According to data from the GIPC, out of 560 total Chinese investors, 179 were registered in the manufacturing sector from 2004 to 2014.[7] This period covers most of the currently operating Chinese investments. Only one Chinese plastic factory and one Chinese pharmaceutical company were found to have started before 2004 and both were existing firms that were sold to new owners from China. Two manufacturers from Hong Kong were established long ago and were still operating. None of these four investors were on the GIPC list.

We tried to reach all of the Chinese companies on the GIPC list with the contact information given by the GIPC, but were unsuccessful in over 60 percent (113) of the attempts. Some phones were switched off and others did not answer the call. As the economic situation in Ghana was deteriorating, a large number of Chinese businessmen were said to have left the country for an extended vacation or even for good. Among the others, four reported that they were only trading, and had never engaged in manufacturing. Another five companies used to have manufacturing activities, but had stopped production and were only trading. Six were repeats of a single company, and one was actually a Ghanaian owner who was wrongly registered. We also inquired about the status of firms on the list with other Chinese investors and Chinese officials working in Ghana. We were ultimately able to visit or talk to approximately 58 percent (29 of the remaining 50 manufacturers on the GIPC list) to collect detailed information.[8]

In addition, four Chinese manufacturing companies were registered in the Ghana Free Zone Board, including Sanbao Pharmaceutical, Rider Steel, Rebecca Wig, and S.F. International. All of these are large companies with investments over US$10 million. We visited each factory and interviewed the managers.

In addition to these interviews and site visits, we interviewed representatives from the Chinese Chamber of Commerce, the Chinese economic counselor's office, the Ghanaian government, and industrial associations in order to further identify significant Chinese investments in Ghana's manufacturing sector.

4. Government Policy and Incentives

Ghana provides several general incentives to develop manufacturing, including a reduction of the import duty on raw material imports and an exemption from the minimum investment requirement (US$1 million for trading companies and US$500,000 for other non-manufacturing companies). Manufacturing firms can also be wholly owned by foreigners, and foreign machinery and equipment can be imported free of duty. But Chinese investors are not satisfied with only these incentives. As one factory owner commented: the "Ghanaian government speaks about support, but in fact does nothing."[9]

At least on paper, Ghana had several sector-specific incentives. Ghana's new industrial policy focused on the provision of local raw materials to local industries. An official in the Ministry of Industry and Trade explained, "Ghana already has enough agricultural products and is in need of non-agricultural raw materials, including metallic materials like steel, non-metallic materials like cement, clay, brick & mortar, etc."[10] Although there is no explicit tax incentive, both Chinese steel mills reported that they had received support from the Ghanaian government. Rider negotiated with the government on some preferential treatment regarding import duty and repatriation of profits. Sentuo formed a joint-venture with Social Security and National Insurance Trust (SSNIT), which was said to help the mill get its power supply quickly.[11] When the Ghanaian Minister of Industry visited China, he also invited Huasheng Jiangquan Group to come to invest in Ghana's steel sector. But as noted above, the Group suspended the plan after discovering that the iron mines in Ghana were not yet developed and that all the steel mills had to recycle scraps.

According to the latest tax regime, waste processing factories are exempted from all taxes except for VAT for seven years.[12] This helped reduce costs for recycling manufacturers. Yet, some Chinese recycling companies cannot enjoy the tax benefits because they do not directly deal with waste, but buy pellets from others.

5. Sectors of Chinese Manufacturing Investment

Chinese investment has spanned multiple industries of Ghana's manufacturing sector, ranging from plastic recycling and pellet production to steel-making and steel products. The effect of Chinese investment on each industry has varied, due to industry-specific issues, competition, resources, and the local economic environment.

Plastic Recycling and Pellet Production

Although Ghana's economy was declining rapidly in the middle of 2014, the plastic recycling business was still booming. A coordinator of the Ghana Plastic Manufacturing Association (GPMA) estimated that there were about 20 Chinese plastic manufacturers operating in the country (the researcher identified 11 of them). The reason is that Ghana has a huge market for sachet water, which is the main form of drinking water for local people. Every day, millions of plastic water sachets, which are made of Polyethylene (PE), are littered after use. In 2005, as the Ghanaian government wanted to ban sachet water, an Indian sachet water maker proposed to collect and recycle sachet water bags. Since then, Chinese producers have dominated the market. The GPMA coordinator analyzed the reason:

> "The plastic industry in Ghana is divided into recycling and production. The production part of the industry is much larger and is dominated by Indian and Lebanese companies such as Polybule (Mohinani family) and Blueplus (Manoji family). These companies were established in the 1950s and 60s. The recycling part of the industry is a much newer addition. Ninety percent of the recycling market is taken by Chinese companies. They came too late and cannot beat Indians in the production market; therefore, they are only able to expand in the new recycling market."[13]

PE recycling can be divided into three sectors: waste collection, making pellets from recycled waste, and processing pellets into plastic bags. There are no Chinese businesses in the first sector. The GPMA estimated that there are 50 big local sachet collectors with crushing machines. The Chinese do not have a competitive advantage in this area against local collectors, as the most important part is not to process, but to know the area and to be able to get access to dumping sites. In the second sector, a handful of local waste collectors have climbed up the value chain to produce pellets. Two small Chinese businesses are dedicated to pellet making. Chinese factories are concentrated in the last sector of bag making, as this is the most profitable sector—once by over 30 percent, and even with increased competition, it is still around 20 percent. Most of the Chinese factories also have machines to produce pellets, but the demand for pellets exceeds their capacity.

Apart from PE, some firms also recycle Polypropylene (PP) from beer crates to make chairs and containers. A Chinese businessman, Chen Zhongwei, claimed to be the one who started this business:

> "I used to be the general manager of a Sino-Hong Kong joint venture in the city of Kaifeng in Henan province, recycling waste plastic to produce industry-used bag. When I came to Ghana, I saw that people here were just burning plastics. I found that there was an opportunity for a new market. As Ghana did not have enough industrial clients, I chose to produce plastic consumer products like buckets and chairs out of waste. After people saw that I was making good money, five Chinese workers also set up similar factories. Two were my previous employees."[14]

Chen used to collect waste himself, but now Ghanaians have taken over the job of collecting. At least one has moved from collecting into the production of plastic pellets. In 2000, a Ghanaian, David, started to work in a Chinese plastic products company, Fanpack, in the city of Accra, where he learned to operate machines. Later, he moved to a company owned by an Indian, and worked as a recycling manager. When the Indian company was sold to a Lebanese businessman in 2011, he decided to start his own waste collection and pellet production business.

David bought his pellet making machines from Chinese recycling factory owners. After discovering a Chinese recycling factory's plans to close, he became interested in purchasing their bag-making machines, but he could not afford the price of 1.5 million RMB (US$241,935). This shows that capital constraint may be an important factor preventing local workers in Chinese factories from starting their own factories. Indeed, although we see few examples of Ghanaian workers transitioning into investment, several rich Ghanaian businessmen opened their recycling factories or took over Chinese firms.

All of the plastic recycling factories are fairly small—most have fewer than 40 employees, and the largest ones have no more than 100 workers. Chen explained that, "the factory in every place should not be too big, as the market is limited. The source of waste plastic and the market for products are both limited in Ghana."

Chinese producers acknowledge that the waste material (plastic sachet) is very good. The plastic has just been processed once and can still be recycled to make plastic bags easily. In comparison, there is no sachet water in China and the plastic waste for plastic bags has already been recycled several times. Since the raw material and the market of the recycling business are both within Ghana, the dramatic depreciation of Ghana's cedi did not affect the industry much. Nonetheless, several Chinese investors complained that their profits in terms of dollars and RMB had dropped a lot.

Plastic Products

As noted earlier, the plastic industry in Ghana had been dominated by Lebanese and Indian investors since the 1950s. During recent years, only a handful of Chinese newcomers have attempted to enter this market. One Chinese company produced small plastic tableware while another produced plastic bottles. Both investors wanted to do something different from other Chinese investors who had crowded into the recycling sector. Both firms were very small with investments of less than 2 million RMB (US$300,000). Another firm invested over US$1 million in Ghana in 2005 to produce plastic sandals after having imported sandals and achieved good sales. This company was able to remain profitable during the economic recession because the raw material, Ethylene-vinyl acetate (EVA), was imported from another of the owner's factories in China. Thus, the owner could get an overall profit even when the Ghanaian factory was barely breaking even.

Steel-making and Steel Products

According to one steelmaker, there were seven steel plants in Ghana. Two of them were from China. One Chinese plant was first established by a Taiwanese businessman 40 years ago. It was acquired by an Indian company several years ago and was resold to an investor from Fujian province in 2010. Ghana SSNIT had acquired 26 percent of the shares in the Chinese plant. The other Chinese investor came to Ghana in 2008 because of encouragement from the Shandong provincial government.

Steel production is relatively expensive. The investment in each Chinese plant was approximately US$30 to US$40 million. Currently, both solely produce iron rods by recycling scrap metal (most locally sourced). The iron rods are used for construction, feeding into Ghana's booming real estate market. But the new plants have increased the total iron rod production capacity to 600-700 thousand tons/year, far exceeding Ghana's market demand. The plants were running at low capacity in July 2014. Finding sources for scrap metal was also a problem; rising demand meant Ghana could not supply enough. Both Chinese plants were planning to produce other kinds of steel with more added value, such as coils, beams and angle bars. They commented that raw materials (e.g., scrap steel) could be sourced from China and Ukraine, but likely not from Africa.

One firm, Sunlight Engineering, produced colored steel tiles and rolling gates for houses. The owner came to work in Ghana as an employee of Gansu Construction Co. in the 1990s. He founded the firm in 2003 when he discovered that there were very few factories in Ghana working in this field. Since he did not have enough capital, he partnered with a Korean friend to form a 50-50 joint venture. The total investment was approximately US$500,000, of which US$200,000 was spent on machinery. The steel for tiles and gates was imported from China and South Korea. The firm processed the products according to clients' orders (most clients were government agencies). Several Ghanaians bought machines from Chinese to open similar business, but Indians had been in the market for longer time and asked for higher price. Another firm SF International was constructing a much larger steel tile factory with an investment of US$12 million. It planned to target large industrial clients across West Africa.

Paper and Cartons

The study identified three Chinese investors in the paper/carton making sector. One arrived from Hong Kong in 1989 and manufactured carton out of imported paper pulp. The other two firms were from the mainland, like Shinefeel Co., which came in 2010. One of Shinefeel's shareholders used to manage a paper mill in China, developing an expertise in paper production. Shinefeel began by recycling waste paper to make toilet paper. This helped the factory produce at a rate 15-20 percent cheaper than that of the Indian and Lebanese paper mills. Now three other Chinese firms also make paper from recycled paper waste. The company had made good money and recovered its investment of US$3 million within three years. However, because the market has become saturated, the owner bought a plastic tableware factory to explore a new business area.

Attracted by Ghana's safe and stable environment and by senior government officials' initial promises of assistance in securing land and mining concessions, one of China's top 500 companies (based on annual revenues according to the China Enterprise Confederation), Huasheng Jiangquan Group, from Shandong province, invested in a paper mill in 2011 and added a carton factory in 2014. Huasheng Jiangquan's total investments reached over 30 million RMB (US$5 million). Its raw material supply was partially sourced from waste paper recycling. So far, Huasheng Jiangquan has not secured any mining concessions.

Suitcases and Bags

In the GIPC lists, some 10 Chinese firms were registered as manufacturing travel bags or suitcases. However, an official in Ghana's Ministry of Industry complained that these firms were not really manufacturing:

> "Most Chinese just do petty trade and illegal mining. They are registered as manufacturing companies to evade capital requirement, but they actually import almost all the materials and just do simple assembly of travel bags. They have added very little value in Ghana, perhaps merely 5 percent."[15]

We tried to call the firms making travel bags, but most of them could not be reached. Two companies reported that they had stopped production due to the poor economic environment. The one company we reached by phone informed us that they were planning to close the business to go back to China if the economic situation in Ghana did not improve.

Miscellaneous Manufacturing

A handful of Chinese firms were operating in a variety of several other sectors: pharmaceuticals, wig-making, steel products, and mattresses. Some of these factories were quite large. For example, the wig maker employed over 900 workers, the pharmaceutical company invested over US$20 million and a steel tile maker invested US$12 million. With the exception of the wig maker, all of the other companies only sold products entirely within Ghana either because of regulations (pharmaceutical) or because of transportation costs. As the market was limited and having problems, no one was eager to expand at the time of the interview.

6. Investment Motives

Chinese investment in the manufacturing sector in Ghana does not have a long history. Aside from several companies from Taiwan and Hong Kong, the oldest Chinese manufacturing factories still in operation were set up only a decade ago, around 2003. We found several common motives for investment, but the most common was a desire among traders to lower their costs by producing locally.

Trade to Investment

Almost all of the first investors in manufacturing started their businesses in Ghana by importing goods from China. Several traders sold very well in the market, and decided to produce locally because this could save them the cost of transportation. The machines they imported were not very expensive. They manufactured and processed the products they traded, such as plastic tableware and agricultural tools.

Other traders felt more and more pressure from competition in trade and wanted to explore new business possibilities outside of the products they had originally been trading. As one factory owner said:

> "I began with trade in Ghana in 1997, taking advantage of the high prices in the local market. I sold various kinds of consumer products. As more and more Chinese came to Ghana, the competition intensified and the margin dropped. I thought that I needed a more stable business and so I opened a restaurant in 2003. In 2007, I set up a plastic recycling factory."[16]

A plastic shoe manufacturer used to import products like ceramics and candles from China to Ghana. The boss saw that Ghana had a stable political economic environment and security situation. This motivated him to set up a factory to profit from the market in the long run. A state-owned construction company, Gansu Construction Co., has been doing well in the contract engineering market in Ghana. Yet, as the competition intensified, it sought to diversify its business. It bought a small Chinese pharmaceutical company and invested in order to turn it into a market leader.

Targeted Investment

By contrast, most of the firms in the plastic recycling sector had not traded before they invested in Ghana. After an established Indian plastic company first suggested recycling sachet water plastic in 2005, Chinese investors quickly entered and dominated the empty market. One investor recalled the beginning of his business in Ghana:

> "I came to Ghana in 2007 and joined with five other people to form a firm called Ohuade. I had my own business in plastic pellet making and printing for over a decade in China. Before I came to Ghana, I closed that business because the clients did not pay their debts on time and because the profit margin had become very low. One of the other five was doing other business in Ghana—he told us information about Ghana and helped us get here. We were able to open the factory very quickly as we were familiar with the business and machinery."[17]

The young boss of another factory told a similar story of directly setting up a factory in Ghana to explore the underdeveloped market:

> "I came to Ghana together with my uncle and his wife in 2009 to set up a recycling factory. At that time I had just graduated from college and did not want to start with low-level jobs like my classmates. My uncle used to own a bag factory in Dongguan before 2009, but he was forced to close down the factory because of debt default. We brought 300,000 RMB (US$50,000) to Ghana. My brother and his wife opened a plastic recycling factory in Ghana in 2007. Therefore we knew that this business was profitable and that the market was not saturated yet. We used the money to buy several machines from China and we opened the factory, even though none of us had ever run this kind of business before."

7. Future Prospects for Investment

Several big Chinese projects (over US$10 million), including two steel mills (Sentuo and Rider), a paper mill (Tema), and a steel tile producer (S.F. International), based their investment decisions on the long-term prospects of Ghana's economic development. Projects of such a large scale do not aim at short-term returns, but hope to get sustainable income in the long run. The Chinese investors often analyze Ghana's future with China's own development experience. For example, the owner of Sentuo steel mill, a Chinese businessman who lived in Spain for years, said:

> "The development of Africa is the big trend. Even if Africans themselves do not want to develop, other people will push them. The problem will just be speed...Infrastructure is currently weak in Third World countries like Ghana. But I have seen how developed countries grow step by step. In the development process of every country, infrastructure has always been among the first sectors to take off. People need houses and the construction of houses needs steel."[18]

The managing director of S.F. International had a similar vision about Africa's future and planned accordingly for the long term. He owned a big cotton plantation firm in China, invested to build a steel tile factory, and was planning to grow cotton in Ghana. He explained his motive:

“After people accomplish primary capital accumulation in China, they should invest in Africa, because this is the only place where we can still see immense growth potential in the world. Thus I came to visit Africa even though I had not done business with Africa before. Learning from other countries’ development experience, I have a 20-year plan for business development in Ghana…I never did the construction business before, but I knew that the steel tile business has a high margin in China, about 15 percent, and the profit rate in Africa will definitely be higher. All developing countries need housing when they grow rich.”[19]

8. Clustering and SEZs

With the expectation that clusters might provide better opportunities for firms to learn from others, we explored the degree to which Chinese firms cluster in sector-specific ways, or geographically. In the latter case, we examined Chinese investment in industrial or free zones in Ghana.

The Plastics Cluster

Chinese investments in the sector of plastic recycling have formed a cluster. Shortly after the recycling of water sachets started in Ghana in 2005, a dozen Chinese firms have flocked into the similar business of processing waste plastic to make black PE bags. Likewise, the sector of PP recycling has also been dominated by Chinese firms. The investors in the clusters were closely connected with each other through familial, communal, or professional ties.

Figure 1: Relationships among Chinese and Ghanaian Plastics Firms

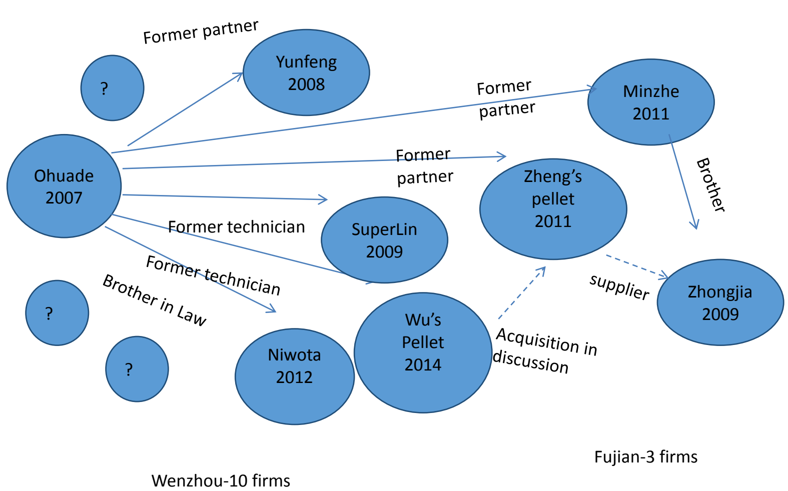

Figure 1 shows the connections among major Chinese recycling producers. The first factory was called Ohuade, which was a joint venture of six shareholders, mainly from the city of Wenzhou. It was made up of merchants who knew the Ghanaian market and businessmen who were experienced in recycling operations. Yet, the joint venture did not last long. Almost all of the partners quit to open their own factories. Several Chinese technicians who worked at Ohuade also left to set up new factories. Ohuade was still operating in July 2014, but it was solely owned by one of the six original shareholders and was not the largest one in the market. The newly established factories also brought their brothers, uncles and friends from the same region to Ghana to work in plastic recycling. In July 2014, there were 10 recycling factories from Wenzhou, which is the production center of waste recycling machinery in China. Another three factories were from Fujian province.

The PP recycling sector had a similar story. Claiming to be the first person who started PP recycling, Chen Zhongwei said, "When people saw me make good money from recycled plastic, five Chinese also set up the same factories. Two of them were actually my previous technicians. They also took several skilled workers from my factory."[20] One PP recycler also introduced his nephew to set up another PP recycling factory.

Some of the divided factories maintained good relationships with each other. Some of the workers were relatives and some supplied pellets to others. Yet, some companies, even though they were all from Wenzhou, had more hostile feelings towards each other. Competition was intense in Accra, with people fighting for clients. A company (Yunfeng) decided to go to Kumasi to find more space and higher profits. As Ghana's economy declined, several producers (usually the smaller ones) wanted to close their business and return to China. A couple of larger producers were determined to stay and even expand. Zhang, a partner of Superlin Co., said, "We have already bought land, we have to persist. There is no way to withdraw."

Apart from plastic recycling and bag assembling, the number of Chinese firms in other manufacturing sectors was small. In each sector there were only one or two Chinese companies. No clustered investment was seen in these sectors. The reason is that Ghana's market is small and several big factories can easily satisfy the domestic demands. However, this was not the case for firms in or near Ghana's industrial zone.

Industrial Zones and Free Zones

Chinese firms have some significant clustering in and near Ghana's zones. For example, six big Chinese factories chose their locations around the Tema Industrial Free Zone and formed a geographic cluster. Rebecca Fashion, S.F. International, Rider Steel, and Sanbao Pharmaceutical are located within the TemaZone. Tema Papers and Sentuo Steel are situated right outside the Zone. Any company can register as a Free Zone company and enjoy tax holidays from the Ghana Free Zone Board as long as it exports 70 percent of its products. However, only Rebecca Fashion has been able to do so. The other companies either sold mainly within Ghana or have not yet started production. The location of a company does not influence the application of tax policy. Thus, the reasons these six firms chose their locations was not related to tax holidays, but rather based on other considerations.

The general manager of Rider Steel, who is from Jordan, believes that Chinese companies like to stay together.[21] He said that when his boss, who is from Shandong province, came to investigate the Ghanaian market in 2008, he found that another Shandong company, S. F. International, was located in the Tema Free Zone as well. This strongly influenced Rider's decision to invest in Ghana.[22] However, the chairman of S.F. International considered the promising investment environment—rather than the presence of other Chinese firms—to be the main reason for his having chosen the location.

> "I decided to set up a steel tile factory here because it has secure provisions of water and electricity. Safety is also good. Although it is more expensive than other places, land ownership is clear. Land belonging to local chiefs may have disputes on ownership."[23]

In addition, the Tema Zone is close to a sea port and has supportive infrastructure. The Free Zone Board also claimed that there was no shortage of power in the Zone, and if there were the Board would be alerted immediately. The two operating factories agreed that the power supply in the Zone was adequate. Yet, Rider Steel reported that the factory waited for one and a half years to get a power connection. Their neighbor, a Lebanese steel company called United Steel, had to wait three years to get power, even though a large power plant was just two kilometers away. Outside the Zone, Tema Papers got a special power line, but still had outages at least once a week. The researcher's investigation in Accra found that the Chinese investors were generally satisfied with power supply in the Accra industrial zones, but that there was no space for new investors. In contrast, the Tema Zone provided abundant space (480 hectares) for new investors.

However, the connections between the Chinese firms in the Zone seemed to be weak. First, as these companies worked in largely different sectors such as steel, paper, wigs and medicine, they had few opportunities to work together in business. Second, though there were two steel mills just five kilometers away, they had little interaction. The Jordanian manager of Rider Steel noticed that, "Chinese companies are not open to each other," especially with respect to the movement of employees.

> "The Indian community is very organized. If people want to find a certified professional, they can easily get candidates. The employees also move around between Indian companies. But Chinese communities are not organized...Among two companies in the same sector, like Rider and Sento, there is no movement of Chinese professionals. They consider stealing people immoral, but such stealing is good competition. Companies should steal people from each other."[24]

Chinese Investment in Free Zone Construction or Operation

The Ghanaian government has encouraged investors to build and operate new free zones. The Ghana Free Zones Programme was authorized by the Free Zone Act of 1995. The Programme aims to promote processing and manufacturing of goods through the establishment of Export Processing Zones (EPZ).[25] By July 2014, four areas had been designated as EPZs: Tema, Ashanti, Sekondi and Shama.

Table 2: List of Export Processing Zones in Ghana

Zone name	Location	Focus Industries	Status (2014)
Tema	Near Accra	Multipurpose	Operating
Ashanti	Central Ghana	ICT, agro-processing, light manufacturing	Planning
Sekondi	West Ghana	Heavy industries	Planning
Shama	West Ghana	Petroleum petrochemical sector	Planning

Source: Ghana Free Zones Board

Several Chinese firms were interested in developing zones, but none have yet done so. In February 2011 the Ghana Free Zone Board announced that a Chinese company, Hasan, was to develop a zone in Sekondi, but the representative of Hasan had already left Ghana at the time of our research.[26] An official in the Chinese embassy said that a number of Chinese firms had been interested in developing the Sekondi zone. But after Hasan signed a memorandum of understanding (MoU) with the Free Zone Board, it found that land ownership there was not clear and that resettlement was difficult. Hasan was thus very hesitant to move forward.[27]

In January 2014, as noted above, a Chinese top-500 company, Huasheng Jiangquan (Tema Paper's parent company), agreed to invest US$2 billion in Shama, Ghana to construct an industrial park based on iron ore and steel.[28] An official in the Chinese embassy noted that an informal promise had been obtained with the Ghanaian minister of Industry and Trade when he visited China. Later, Huasheng discovered that the minister's promise was difficult to implement. For example, the iron ore had not yet been extracted and there were disputes over land ownership. A manager from Tema Paper mentioned that the zone project was still in the planning stages by the headquarters in Shandong.

An official at the Chinese embassy explained the reason for Chinese enthusiasm in zone construction:

> "They still have a traditional way of thinking. They want to encircle a piece of land like they did in China, so that they can profit from the real estate boom. But this does not work in Ghana...(because) the land ownership here is complicated and the resettlement is very difficult."

At the time of writing, only the Tema Free Zone, which was developed by Ghanaian authorities, is in operation. All other plans of zone development exist only on paper.

9. Local Linkages

The degree to which foreign firms have linkages to local firms helps determine what opportunities are available for learning and technology transfer. These linkages often begin through supplier relationships. Another key area is local competition. When local and foreign firms operate in the same sector, learning is more likely to occur. Finally, we explored the degree to which Chinese firms had links to other Ghanaian institutions.

Suppliers

Plastic recycling firms, steel mills and paper mills source a large part of their raw materials from waste in Ghana. Investors who started earlier in Ghana recalled that waste was very easy to get and cost almost nothing in the beginning. But as investors increased, the competition for raw materials also intensified. For example, the price for plastic waste rose from 0.1 cedi (US$0.03/kg) to 0.8 cedi (US$0.25/kg). Since Ghana imposes a high duty on the import of waste plastic and steel, factories have to rely on the domestic supply. Sentuo Steel Mill only runs at half of its production capacity because of a shortage of raw materials.

Chinese factories are not very satisfied with their local supply. According to the general manager in Rider Steel:

> "We source all the scraps locally, but unlike in China, the scraps are not processed first in Ghana. Vehicle wrecks are simply brought to the factory. Chinese technicians were shocked at the beginning, because in China the scraps are processed by supplier companies and they never saw such kind of scraps. Only after two months, the production manager understood that this is the nature in Ghana."[29]

As plastic recycling started just several years ago in Ghana, local people did not know how to collect waste. Chinese producers did the waste collection at the beginning. The founder of Haojie Plastic recalled:

> "Previously, my factory did everything: collect waste plastics, crush them and then make them into finished products. But as this business grew, local people realized that collecting waste has lots of profits. They began to collect waste by using small carts to go to all the small trash collection station. I knew that I cannot compete with Ghanaians in this part. Therefore I gave up the waste collection business to focus on the processing of finished products. I paid some Ghanaians to collect plastics for me first. Later I gave them the crushing machines so that they set up their own collection business and supply crushed waste to me." [30]

However, he complained that the local collectors do not know how to wash and process the crushed plastics properly, and so his factory has to do it again. Other Chinese recyclers shared similar concerns. They pointed out that the African collectors did not wash carefully and that the supplied waste was of poor quality. The quality problem also hindered the Ghanaian suppliers from providing processed raw materials (pellets). A Chinese factory owner said, "Unless the pellets are of good quality, we only accept crushed plastics and process with pellet making ourselves." At the time of the interview, this factory only bought pellets from one local supplier—this is because "he is able to find good clean waste plastic, his pellets are clean." [31]

There were two Chinese pellet makers supplying pellets to Chinese PP bag makers. One of them explained the reason for low quality among local suppliers:

> "Local competing recyclers do not wash carefully and do not use good sift nets either. Therefore sands are mixed into their pellets. I use 80 mm mesh nets to sift sand out. But this requires my workers to change the nets several times a day. Local suppliers are not able to do this."[32]

The Chinese pellet makers occasionally supply Ghanaian or Indian PP bag makers as well, but charge a higher price. Their priority is to meet the demands of long-term Chinese clients. In any case, non-Chinese bag makers are few in number, making up only about 10 percent of the whole market.

Manufacturers in other sectors such as pharmaceuticals, wigs, steel tiles and plastic production, import almost all of their raw materials. The main source is China, but sometimes high-quality materials like pulp are also imported from Europe and the US.

Competitors

As mentioned, Chinese, Indian, and Lebanese investments are spread across most of Ghana's manufacturing sectors. Long-time Indian and Lebanese investors are dominant in the plastic production and food processing sectors, whereas new Chinese investors make up most of the recycling market. Only a few small-scale Ghanaian-owned firms have been identified in the plastic recycling, paper making, and pharmaceutical sectors.

There is some direct competition between the Chinese and the Indian/Lebanese companies, especially in the steel business. But as the Chinese mills have just started operating, there has been no intense competition and interaction yet. Even in the steel and plastic production sectors, Chinese firms tend to invest in new segments or niche markets which are not taken by the Indians or Lebanese, such as the steel mills plan to produce coils, beams and angle bars instead of simple iron rods. A plastic producer bought new molds from China to produce plastic bowls and cups which had not yet been produced in Ghana. Its manager explained, "The market in Ghana is empty. Only a few products are produced here. We don't want to follow others to do similar things. We can easily find some products which nobody has yet produced here."[33]

Ghanaians firms are not regarded as serious competitors. Although some local businessmen bought machines to make pellets and PP bags, Chinese firms believe that Ghanaian-made products are of lower quality. A Chinese pharmaceutical company has a Ghanaian competitor, but the competitor was established in the 1970s and has very old equipment. The Chinese company controls over 70 percent of the market and commented that its major competitor is imports from India, not the local producer.

Linkages with Ghanaian Institutions and Associations

Several local agencies and plastic business associations launched the Plastic Waste Management Program in 2012. The purpose is to educate both the public and the government about waste collection. Twenty tricycles have been given to local collectors for trash transportation. Five thousand Ghanaians are estimated to be employed in the recycling business nationwide.[34]

They don't have capital to buy machines. The government promised to give a soft loan of 40 million Ghanaian cedi to support Ghanaian recycling businesses, but less than 20 percent was disbursed.

Some Chinese are considered cooperative by the Ghana Plastic Manufacturing Association, for they are willing to talk to the Association, but most Chinese recyclers have had no contact with the Association. The coordinator of the Association thought that Chinese companies "hide themselves," perhaps because they want to evade taxes or immigration checks. He tried to convince them that the Association may actually provide subsidies and incentives to them, but the effect was limited.[35] Of the 60 member firms, almost none were from China.

10. Technology Transfer

Some Chinese firms have found issues with Ghanaian workers and machinery. Various steps have been taken to improve the situation, and although progress has been made, problems have remained.

Training

Chinese factories employ a large number of Ghanaian workers (there is approximately one Chinese worker for every nine Ghanaian workers, on average) but a number of employers have strong prejudices against local workers. They describe local workers as "lazy" or "stupid," complain that they do "not keep promises," and are "not willing to work on weekends." Many Chinese believe that their employees "like to steal" and so on. Consequently, despite their technical knowledge, these employers do not trust local workers to be in supervisory positions and rely instead on Chinese technicians. The owner of a factory with about 40 local workers said, "Local workers are only able to do simple operations on the machines. They are not able to configure the machines and adjust temperature and time. They often mess things up. I don't allow them to touch the machines any more. Now only three Chinese technicians are allowed to change the settings."[36]

To be sure, not all Chinese companies have such prejudices. There are still plenty of companies that emphasize providing training to local workers, especially the big companies. For example, Tema Papers has a one-month training program for its local printing technicians, in which Chinese technicians work with the local technicians so that they learn from each other. The firm even invites some Ghanaian experts from outside to hold classes for the staff, because the printing technicians need to gain experience and understand the local market.[37] However, out of over 100 workers in the company, only seven or eight technicians received such training. Others just did simple manual labor. Sanbao Pharmaceutical also sent some local staff members to government-sponsored training workshops. In order to conform to local law, the company also hired well-educated Ghanaian professionals to be the principal pharmacists and the heads of inspection labs.

Some Chinese firms prefer to hire workers who have just graduated from high school. The owner of a small workshop for machinery maintenance explained, "First, the young graduates are cheaper (about 350 cedi/month, which equals roughly US$100). Second, they are easy to train. The experienced Ghanaian technicians do not listen to me, they have their own ideas and habits."

Recycling businesses usually have low requirements when it comes to technical skills. Thus, some companies do not care about training and keeping local workers. A Chinese pellet maker said, "When the local workers wanted higher wages, we simply dismissed all of them. Students and young people come to our factory to ask for jobs almost every day, we are not worried about getting new workers at all."[38] Others treat their employees better. In some firms, a third to a half of their employees have worked for them since the beginning of the investments. In their opinions, experienced workers are more familiar with the machines. They may detect hidden problems in the machines and tell Chinese technicians to repair them in advance.

Machinery Systems

Many Chinese firms claimed that the machines they brought to Ghana are much more advanced than those that Ghana had before, yet the same machinery is already "mature" or even out of date in China. The general manager of Rider Steel said that the production technology of his company is at the level that China's technology was, two decades earlier, around 1994. Sento's technology is at a level equivalent to that of China in 1997. The imported machines were all new. It is very easy to purchase steel furnaces and install them in Ghana with the suppliers' technical assistance. In fact, none of Rider Steel and Sentuo Steel's owners ran steel mills before they came to Ghana.

Likewise, the PP bags are already banned in China, because the black PP plastic bags cannot be recycled again and will cause pollution. The Chinese government only allows firms to produce biodegradable plastic bags. The machines and technicians in the PP recycling sector thus found their way to Ghana, where PP recycling was still considered to be a progressive step.

The manager of a bottle making company said that he intentionally used an old-generation machine. In his words,

> "It is not suitable to bring fully automatic machines to Ghana, because the technological capacity here is still not enough to operate the automatic machines. Local technicians are not able to do appropriate setting and maintenance. Chinese technicians can do this, but they can't find spare parts. As the labor cost here is very low, it is better to use semi-automatic machines."[39]

Spillover

Some Chinese employers noted that the turnover rates of Ghanaian workers in their companies were pretty high. The workers who quit might go to other factories, but very few of them started their own business. The Chinese employers believed that this was because of the relatively high costs of machinery investment. Nonetheless, a small number of Ghanaian businessmen ventured into their own pellet making and some have even established full recycling factories, such as David, the Ghanaian pellet supplier mentioned earlier.

Several Chinese recycling firms also sell machines to Ghanaians. As noted earlier, Chinese companies gradually withdrew from waste collection segment. A recycling firm gave crushing machines to local Ghanaians so that they could become his suppliers. As the number of Ghanaian collectors increased, he sold over 20 crushing machines to Ghanaians (each machine costs over 10,000 RMB). In Kumasi, only one Chinese PP recycler was operating. The owner, Mr. Jin, was not willing to run the pellet making process himself, as waste collection and primary processing is dirty, requires hard work and frequently results in accidents. Therefore, he sold pellet-making machines to Ghanaians. These local companies in turn became his suppliers of pellets. The quality of these suppliers was good, because Jin would send technicians to install the machines and teach them how to operate them. All the sift nets and spare parts are provided by Jin. Two-thirds of Jin's pellets are sourced from local Ghanaian suppliers. One-third is recycled from the side products of his own factory.

Jin also sold printing machines to sachet water makers. These water companies in turn gave him waste sachets. As a big water company in Kumasi stopped producing sachet water, there is a large vacuum (15 tons/day) for sachet water producers. He has sold 20-30 sets of machines to sachet water companies and five sets of pellet making machines. The buyer of pellet making machines is actually a relative of the owner of a sachet water producer. Thus, they can form a recycling chain and supply high-quality pellets to Jin. Jin does not sell PP bag making machines to local firms because he does not want to nurture competitors.[40]

Without the assistance of Chinese technicians, Ghanaians who bought Chinese machines may encounter big problems. For example, the owner of a Chinese PE recycler fell heavily into debt because of gambling. He gave his factory to his Ghanaian landlord to cover the rent due. The landlord kept the factory running, but when some of the machines had problems, the landlord had no idea how to solve them. His Chinese neighbor said that the landlord once paid a large sum of money to a Chinese technician just to solve a small problem. Another time he wired money to a supplier in China to get spare parts, but has not yet received them. When we visited him, the factory had suspended operation and was still waiting for machine repairs.

11. Conclusion

After careful examination on the ground, we can map out the development of Chinese manufacturing investments in Ghana and their linkages to the local society. First, we find that the reality of investment was quite different from that reported by the media, other researchers, or government statistics. Over one hundred Chinese firms had registered as manufacturing investors in the GICC, yet we could only confirm, at most, one-third as currently in operation. Several large projects, such as Sekondi EPZ or Huasheng Jiangquan ecological park, had not materialized in spite of much fanfare and media coverage. Second, Chinese manufacturing investments has been constantly increasing during the past decade even though Ghana was at times experiencing significant economic difficulties. On the one hand, some Chinese traders who had become familiar with the local market decided to invest there instead of limiting their business to import-export. On the other hand, a few successful pilot investors attracted other Chinese investors to join them, to seize business opportunities. The clustering in the plastic recycling sector in Ghana vividly demonstrates how Chinese investments expanded through various linkages like these. Third, almost all of the manufacturing projects in Ghana were targeted at local or West African regional markets. Chinese firms see competition in Ghana as less fierce than in China, and with lower transportation costs and the use of local materials, they believe so that their products have competitive advantage against imported products (often made in China). We did not find any Chinese manufacturers settling down in Ghana to make labor-intensive products for the global market, as we have seen in shoe and garment firms in Ethiopia.[41] High labor costs (about 350 cedi/month, which equals roughly US$100 for unskilled new workers) in Ghana may be the hurdle for the export-processing enterprises.

As for local linkages, the vast majority of the employees in Chinese factories consisted of Ghanaians: on average, 10 Ghanaians to 1 Chinese. However, few Ghanaians were in management positions. Training was usually provided to local employees in most firms, yet most simply trained new employees "on the job." Larger and technologically more sophisticated firms, for example, the pharmaceutical firm, offered classroom training too. Since most of the Chinese investments in Ghana were small and used fairly simple technologies, they did not require sophisticated skills. Local workers did learn how to operate machines and repair them.

Other forms of learning occurred. Several local businessmen and former Ghanaian employees of other foreign firms started their own businesses in some sectors by learning from Chinese investors, primarily in the sector of plastic recycling. Chinese firms had local suppliers of raw materials, from plastic waste, waste paper and scraps, but the industrial supplies like steel, PVC and pulp were all imported from abroad. Therefore local backward linkages were very basic and the chain was short. Some Chinese firms sold machines to their local suppliers to help them begin or improve production, but lack of capital for local firms appeared to be the main obstacle keeping local players from moving up the value chain. The weak economic environment of Ghana itself proved to be limiting the technology transfer and local linkage between Chinese firms and Ghanaians.

Endnotes

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6. On the side, however, the China Development Bank has said that the loan offer remains open. Thomas Chen, "What Happened to China Development Bank's $3 Billion Loan to Ghana?," Johns Hopkins University, School of Advanced International Studies China-Africa Research Initiative, Policy Brief. No. 10/2016, http://www.sais-cari.org/publications/; Interview, Deborah Brautigam, Beijing, July 2016.

7. Except the investment in free zones, all companies in Ghana have to register with GIPC to get a business license.

8. To clarify, the list contained 179 registered manufacturing firms. Of these, 113 were unreachable through phone calls, and 9 said they were not manufacturing any longer or had never started. Six on the list were duplicates, and one was not Chinese. This left 50 firms that were potentially engaging in manufacturing, of which we were able to visit 29 or 58percent.

9. Interview, Jin, Yunfeng Recycling, Kumasi, July 2014.

10. Interview, Kofi, Nutta, Director of Manufacturing, Ministry of Trade and Industry, Accra, July 2014.

11. Previously a Taiwan businessman owned the steel mill and sold it to SSNIT ten years ago. An Indian company managed the factory for a while, but suffered losses. SSNIT further sold the company to Sento.

12. Ghana Investment Promotion Centre, 2014, http://www.gipcghana.com/invest-in-ghana/why-ghana/tax-regime-and-incentives.html.

13. Interview, Quaranchie Adama-Tetteh, Coordinator, Ghana Plastic Manufacturer Association, Accra, July 24, 2014.

14. Interview, Haojie Plastic, July 2014.

15. GIPC regulates that US$1 million capital is required for a foreigner to register a trading firm, but there is no threshold for manufacturing firms. Interview, Kofi Nutta, Ministry of Trade and Industry, July 16, 2014.
16. Interview, Chen Zhongwei, Haojie Plastic, July 2014.
17. Interview, Jin, Yunfeng, July 2014.
18. Interview, Xu Ningquan, MD, Sentuo Steel Ltd., Tema, July 2014.
19. Interview, Chen Qishun, MD, S.F. International, Tema, July 2014.
20. Interview, Chen Zhongwei, Haojie Plastic, July 2014.
21. Rider is from Qingdao, where it originally sold glass. It has a glass production factory in Weihai, called Blue Star. It is a joint-venture between Chinese and Jordanians established in 1994. (Blue star's share composition is 65 Chn:35 Jdn). In 2008, Rider decided to invest in Ghana. The EIA process took a year. In 2011 the factory began construction. For over 1.5 years, the factory did not have power. The previous GM was an Indian. Current GM Al-Alami, who worked as GM in Rider Qingdao for over 10 years, came to replace him in October 2013. The former GM had difficulty in mixing Chinese and Indian culture.
22. Interview, Walid Al-Alami, General Manager, Rider Steel, Tema, July 2014.
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29. Interview, Walid Al-Alami,General Manager, Rider Steel, Tema, July 2014.
30. Interview, Chen Zhongwei, Haojie Plastic, July 2014.
31. Interview, Zhang Yu, Zhongjia Plastic, July 2014.
32. Interview, Zheng Ni, Pellet making factory, Accra, July 2014
33. Oxen Zhang, manager, Shifa Plastic, Accra, July 2014.

34. Interview, Quaranchie Adama-Tetteh, coordinator of Ghana Plastic Manufacturer Association, July 2014.

35. Interview, Quaranchie Adama-Tetteh, coordinator of Ghana Plastic Manufacturer Association, July 2014.

36. Interview, Chen Zhongwei, Haojie Plastic, July 2014.

37. We were not able to determine who supplied this training expertise.

38. Zheng Ni, Accra, July 2014.

39. Li, Lakerise Bottle, Kumasi, July 2014.

40. Interview, Jin, Yunfeng, Kumasi, July 2014.

41. Deborah Brautigam, Margaret McMillan and Xiaoyang Tang, "The Role of Foreign Investment in Ethiopia's Leather Value Chain," Private Enterprise Development in Low Income Countries (PEDL) Research Note, Center for Economic Policy Research, London, 2013.

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