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Chinese manufacturing moves to Rwanda: A study of training at C&H Garments

Janet Eom

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CORRESPONDING AUTHOR:

Janet Eom

Email: janeteom@post.harvard.edu

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ABSTRACT

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RWANDA HAS OFTEN EMPHASIZED THE GROWTH OF knowledge-intensive services, tourism, and information and communications technology (ICT), over labor-intensive manufacturing, to grow its economy. But in 2015, C&H Garments, a Chinese garment factory, began operations in Kigali under an arrangement to train and hire the Rwandan workforce. This paper finds that the Rwandan government's shift towards creating jobs in the manufacturing sector, and implementation of national requirements for training and hiring local workers, have been key to negotiating an agreement with a Chinese investor that supports technology transfer in Rwanda. In the process, this case demonstrates how African governments can require foreign investors in manufacturing to implement skills transfer programs to facilitate structural transformation in their countries. However, the C&H factory has also faced obstacles to successful technology transfer, including cultural and linguistic differences; this paper suggests closer regional ties and the exchange of trained African managers between countries may help remedy these issues. Finally, this study is significant given that the Rwandan government's desire to boost local manufacturing capacity has been at the center of recent trade tensions between Rwanda and the United States under the African Growth and Opportunity Act (AGOA).

INTRODUCTION

IN 1962, JAPANESE ECONOMIST KANAME AKAMATSU popularized the "wild-geese-flying-pattern" of industrialization to explain the development of Asian economies.[1] This theory uses a flock of flying geese as a metaphor for interdependencies between economies at different stages of development. At the time, as Western European countries, "leading geese," moved towards higher stages of capital and knowledge-intensive development, they came to rely on Asian countries, "follower geese," to take on labor-intensive factory production. Within Asia, Japan became the "leading goose" upgrading to high-technology sectors, and China and other Asian countries became "follower geese" absorbing its basic manufacturing.

Today, China's economic superpower status has come with rising wages and production costs. As a result, Chinese manufacturers are relocating their factories to countries where operations are cheaper. Can the "flying geese" model be used to explain the emergence of Chinese operations in Africa, with China as the "leading goose" and African countries as its "follower geese?"[2] From Mauritius to Nigeria to Ethiopia, Chinese firms are employing local workers and may play a role in moving African manufacturing up the ladder of industrialization, ushering in a new phase of structural transformation.[3]

Although often assumed to be low-skill, even entry-level manufacturing requires workers in agrarian societies to be trained in production techniques and in the social skills needed for quality control and productivity. Unsurprisingly, Chinese manufacturing firms in Africa have become foci of technology transfer and employee training experiments. In the leather sector in Ethiopia, Chinese manufacturers have hired Ethiopians from local training institutions, and the Huajian shoe factory has sent Ethiopians to China for skills training.[4] In Nigeria, Chinese manufacturing firms in special economic zones (SEZs) have implemented formal and informal training programs to promote on-the-ground skills transfer.[5] A survey of over 1,000 Chinese firms in Africa found that almost two-thirds of Chinese employers provided skills training, and half of Chinese construction and manufacturing firms offered apprenticeship training.[6]

The Rwandan government's program for training its citizens across diverse industries has played a key role in the planning, implementation, and scaling of Chinese manufacturing in Rwanda. Yet to date, there have been few studies of Chinese manufacturing or technology transfer in Rwanda. In 2015, C&H Garments, a Chinese garment firm with previous operations in Kenya, opened a factory in Kigali, Rwanda, introducing new experiments in technology transfer and training. This study examines the employee training arrangement between C&H and the Rwandan government and aims to shed light on various approaches for other African countries seeking to bolster skills transfer with Chinese manufacturing firms.

METHODS

THE RESEARCH AND ANALYSIS PRESENTED IN THIS PAPER aims to answer several questions. First, how did the Rwandan government link its own domestic development goals, especially with regards to training the Rwandan workforce, to C&H operations? In particular, what are the terms of the training arrangement between C&H and the Rwandan government, and how were they negotiated? Second, how has the training program at C&H taken off in Rwanda, a country without a robust manufacturing base? How does the training program operate on a daily basis? What have been the on-site challenges, and how have these issues been resolved?

This study finds that a Rwandan development agenda increasingly focused on creating jobs in the manufacturing sector underpins the entry of C&H into Kigali. Moreover, the Rwandan government's initiatives to successfully train the local workforce have been crucial to the negotiation of a memorandum of understanding (MOU) with C&H that benefits Rwandan workers. This case demonstrates how local African governments can exert agency on their path to structural transformation, helping to kickstart industrialization of their economies by requiring foreign investors to implement skills transfer programs. Moreover, the evidence presented in this paper shows that the C&H investment is so far unique in the Rwandan context for its focus on labor-intensive manufacturing, and as among the first of its kind, has faced a number of challenges, including cultural and linguistic obstacles between workers. However, early signs of collaboration between Chinese factories' training programs in Africa demonstrate that closer regional ties and exchange of trained African, as opposed to only Chinese, factory managers between Rwanda and other African countries may help remedy these issues. In addition, this study is significant given recent trade tensions between Rwanda and the United States: After Rwanda increased tariffs on imports of second-hand clothing in an effort to strengthen local manufacturing capacity, the United States determined Rwanda ineligible for export access to the US market under the African Growth and Opportunity Act (AGOA). This may impact manufacturing firms in Rwanda, including C&H, and their ability to export to the United States.

This study draws from academic literature, local and international news media, official government reports, diplomatic speeches, and company websites to understand the context for China-Rwanda relations and the development of the training program at C&H. In addition, this study includes insights from qualitative interviews and field observations conducted by the author in Kigali, Rwanda between 2013 and 2018. The interviews were conducted primarily with Chinese and Rwandan investors, factory managers, diplomats, and policymakers. Investment data is pulled from several sources including the Chinese Ministry of Commerce (MOFCOM) and the Rwanda Development Board (RDB), and loans data is sourced from the China-Africa Research Initiative at the Johns Hopkins School of Advanced International Studies (SAIS-CARI). This methodology is advantageous for tracking developments that have happened over multiple years in the China-Rwanda relationship, instead of at a single point in time. In the process, this paper demonstrates how labor-intensive manufacturing in textiles production, and attached skills transfer programs, can take off in a knowledge-intensive, technology-focused economy that is working to diversify its industry base over time.

PROJECT IMPACT

RWANDAN DEVELOPMENT: A BUSINESS AND TECHNOLOGY HUB

RWANDA IS THE NINTH SMALLEST COUNTRY IN AFRICA by area; is landlocked by Uganda, Tanzania, Burundi, and the Democratic Republic of Congo; and has a dearth of oil and minerals.[7] Due to these geographical constraints, rather than create an export-oriented manufacturing base, the national government has focused on transforming Rwanda into a business and technology hub. Louise Mushikiwabo, the Rwandan Minister of Foreign Affairs and Cooperation, describes a development model for local circumstances: "When you are not endowed with oil and all these other natural resources, you can use technology and innovation together to achieve economic goals."[8] Rwandan policymakers consider the country "land-linked," not landlocked, envisioning a central location for the exchange of ideas and flow of economic networks in East Africa; towards this aim, Kigali has hosted World Economic Forum, African Union, and United Nations summits. In fact, Rwanda has been called the "Singapore of the Great Lakes" for its focus on becoming an international technology hub powered by knowledge-based human capital.[9]

To achieve these goals, the Rwandan government has pursued what some describe as economic leapfrogging, seeking to skip over elementary technologies in labor-intensive manufacturing to move directly to advanced technologies in services, tourism, and information and communications technology (ICT).[10] Mobile money is present where traditional banking infrastructure is absent: Rwandan mobile money penetration is high in Africa, and one study found that of Rwandans with mobile money accounts, 61 percent live in rural areas and 72 percent live on less than US$2.50 a day.[11] The Agaciro Development Fund, Rwanda's sovereign wealth fund for buffering economic shocks, takes contributions from Rwandans not just by traditional bank deposit but by text message on mobile phones, facilitated by Rwanda's extensive broadband Internet, among the fastest in Africa.[12] Recently, drones began delivering blood to rural Rwandan hospitals that are difficult to access by road: new technologies circumvent comparatively antiquated methods of delivery by motorcycle or car.[13]

These efforts are encapsulated in Vision 2020, Rwanda's post-genocide, national development program for becoming a middle-income, knowledge-based economy by the year 2020. The plan focuses on cultivating an educated and technically skilled Rwandan workforce to power the country's services, tourism, and ICT industries, crucial to creating a modern business climate underpinned by high-technology goods.[14] Vision 2020 discusses the need for technological training in the following terms:

- "Major emphasis will continue to be placed on vocational and technical training in the fields of technology, engineering, and management."

•"To promote efficiency and continuous upgrading of skills, large scale employment creation programs will be launched in the national institutions aimed at on-job-training, in-service training, and distance learning."

•"One crucial element to the achievement of Vision 2020 will be to ensure a proper link between education policies and sector development and labor policies...the investment needed for the development of the secondary and tertiary sectors will not be effective without a suitably skilled labor force."

•"Rwanda lags behind in professional training, with shortages in the fields of applied and natural sciences and ICT. Although the country will continue to rely on imported technology from advanced countries, well-trained specialized nationals will be essential to the running and maintenance of technological systems, ranging from medicine and agriculture to industry and telecommunications."

As revealed above, Vision 2020 describes skills development as crucial to successful leapfrogging and emphasizes the role of attracting foreign know-how in the process. In many ways, Rwanda has created an environment suitable for foreign investment to create training opportunities. Rwanda is the third least corrupt country in Africa, according to Transparency International.[15] The World Bank Doing Business Report, which determines the ease with which entrepreneurs can run a business in a country, ranks Rwanda the second best place for business in Africa.[16] The RDB, a "government agency with a private sector mindset," aims to bring "the entire investor experience under one roof," with a "one stop center" allowing investors to register businesses and obtain environmental clearances in a single, streamlined process.[17] The RDB agencies focus on attracting foreign investors to the priority sectors of ICT and tourism, which can facilitate human capacity development. Visa is developing training programs alongside a financial literacy program to connect 11 million Rwandans to the formal financial sector.[18] JP Morgan Chase supported the first financial analyst training in Rwanda.[19] Over the years, foreign investment has been paired with technology transfer on the way to a knowledge-based economy.

RWANDAN DEVELOPMENT: A NEW SHIFT TO MANUFACTURING

INDEED, IN 2013, CHINESE INVOLVEMENT IN RWANDA was concentrated in services, tourism, and ICT. New Century Development, a joint venture of 75 percent Chinese investment and 25 percent local investment, was building the first Marriott Hotel in Sub-Saharan Africa.[20] The hotel opened in October 2016. A local executive of the firm described the on-site technical education provided by Chinese managers: "I see by the time we are through this project, we will have a team of Rwandese who have acquired skills...they can go out there and work independently in any other project."[21] Rwandans could apply the skills they learned to new construction projects, including indigenous ones, and spread technical know-how to the local workforce. In addition, Beijing Construction Engineering Group (BCEG) was constructing the Kigali

Convention Center, which has become a central location in East Africa for government summits and business forums; a Turkish firm completed the project after BCEG failed to meet deadlines.[22] The Center opened in July 2016 and has a five-star hotel with 292 rooms, a conference hall that can host up to 2,500 people, and an ICT office park. Finally, between 2000 and 2016, Chinese loans to Rwanda have totaled US$295 million. The largest part of these loans have gone towards construction infrastructure, roads to bring in tourism: the Export-Import Bank of China provided US$32 million to upgrade the Kigali Urban Road and US$117 million to construct the Kivu Belt Road, for example.[23]

Vision 2020, drafted in 2000 with a revised version released in 2012, only broadly mentions manufacturing, discussing the need to develop infrastructure to break down barriers to trading manufactured goods.[24] But this has since begun to change: the Economic Development and Poverty Reduction Strategy II (2013-2018) (EDPRS II), a document published in 2013 that outlines ways to implement Vision 2020, describes manufacturing in new and more frequent terms. Under the goal of "boosting exports," EDPRS II discusses "facilitating the increasing export orientation of firms in Rwanda's manufacturing" as follows:

> "The [Government of Rwanda] will review the institutional set-up for export promotion and strengthen the export promotion department at [the] RDB, with the objective of becoming more pro-active at targeting potential export markets and linking domestic firms to export opportunities. Export Councils will be the channel through which government and industry interact and collaborate towards the formulation of an export 'vision' for the various sub-sectors and assist in the identification and implementation of the most appropriate levers with which to realize these visions."[25]

Diplomatic statements have also reflected a shift towards manufacturing. In March 2017, when Rwandan President Paul Kagame visited Beijing to meet with Chinese President Xi Jinping, he explained, "An important component of our economic growth strategy is manufacturing. We wish to collaborate further on industrial development and encourage Chinese companies to invest in Rwanda's manufacturing sector."[26] When President Xi visited Rwanda in July 2018, he referred to C&H's role in growing Rwandan manufacturing capacity: "The garment factory that a Chinese entrepreneur has set up in response to President Kagame's 'Made in Rwanda' development initiative is playing a positive role in growing Rwanda's manufacturing sector."[27]

The establishment in 2009 of the Kigali SEZ, a merger of the Kigali Industrial Park and the Rwanda Free Trade Zone, has been key to enabling manufacturing in Rwanda. Between 2013 and 2016, the SEZ was home to 44 operational firms, and made up between 4.5 to 10 percent of all national exports.[28] Divided into two phases of development, the SEZ provides roads, electricity, water and firefighting systems, and sewage and fiber optic cables that are difficult to access elsewhere in Rwanda.[29] Phase I occupies 98 hectares of land and 97 separate plots while Phase II occupies 178 hectares of land and 67 separate plots. The SEZ includes a control room where all of the zone's electricity converges, water tanks supplying potable water to individual plots, a sewage treatment plant, an ICT park, and numerous plots to accommodate industries and warehouses. The SEZ is regulated by the Special Economic Zones of Rwanda Law, which stipulates the roles of regulators, developers, operators, and users. The Special Economic Zones Regulatory Authority of Rwanda, based at the RDB, typically grants or rejects a user license for the SEZ within three working days of submission of an application, creating an efficient and streamlined registration process. Claver Gatete, the Rwandan Minister of Finance, describes the SEZ's ability to combat the usual lack of energy, water, and roads as key to helping light manufacturing take off: "We provide tax incentives, we will also provide infrastructure as well, and then of course land."[30] Tellingly, manufacturing is the SEZ's largest sector, making up to 80 percent of firms in the zone since its establishment.[31]

Under a "Made in Rwanda" push into global textiles, Rwanda now aims to increase local manufacturing, but by adding a localized twist: training programs focused on producing a set of highly skilled Rwandan workers in the sector. As a senior-level executive of the RDB says:

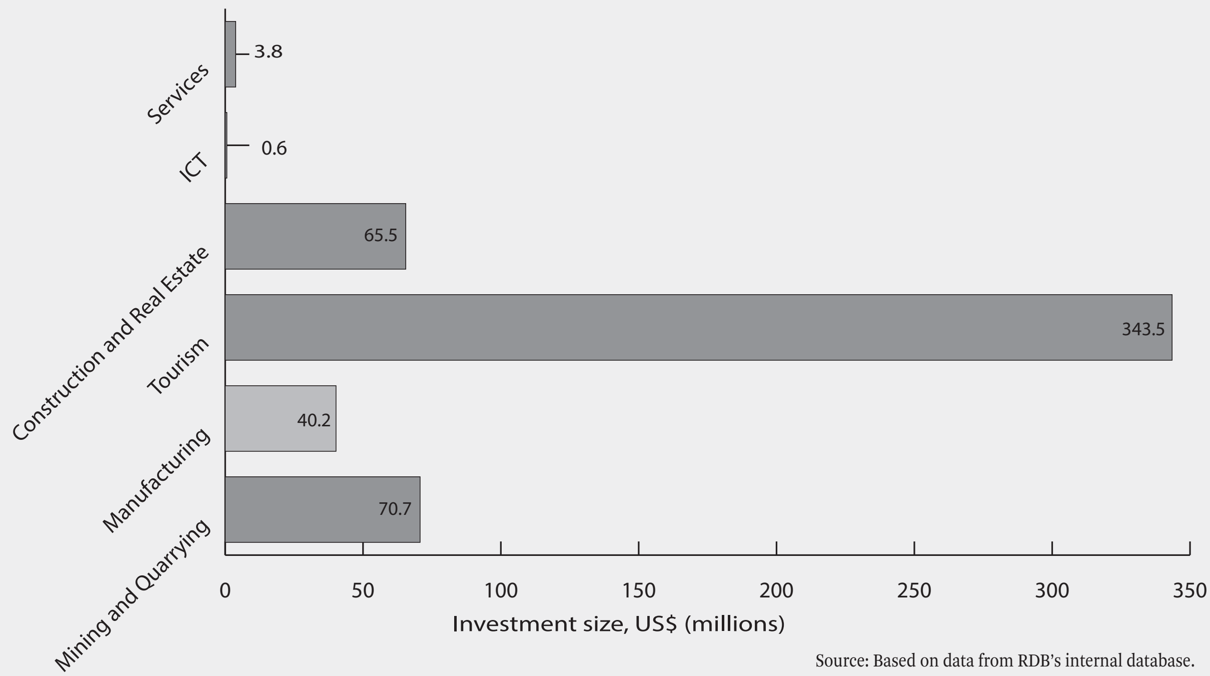
> "There is a kind of recalibration of our vision: we have realized that in order to curb our trade deficit and create massive jobs, we cannot totally ignore manufacturing. The good thing about manufacturing is also that it educates both public and private actors to be better synchronized. The cycle of production is a better teacher than the services sector, where everything seems to depend on human attitudes. There is something objective and imposing about the process of transforming materials into finished products."[32]

In fact, in 2016, Rwanda and other East African Community (EAC) members – Burundi, Kenya, Tanzania, and Uganda – moved to ban all imports of second-hand clothes and shoes by 2019. Accordingly, the value of Rwandan imports of used clothing dropped by 35 percent from US$27 million in 2015 to US$17 million in 2016.[33] The EAC argued that local textiles factories are "crucial for employment creation, poverty reduction, and advancement in technological capability" and boosting of local manufacturing, and could not compete with imported clothes.[34] In response, following a complaint from the Secondary Materials and Recycled Textiles (SMART) Association, a US trade group, alleging that the ban would be detrimental to the US used-clothing industry, the Office of the US Trade Representative threatened to suspend East African benefits under AGOA, a trade agreement that provides duty-free access to the US market for some African products.[35] The other EAC countries backed down, but Rwanda did not, maintaining its increased tariffs on used clothing and shoes imports. On July 30, 2018, the United States suspended duty-free benefits for all imports of Rwandan apparel into the United States. The Rwandan government has

"The cycle of production is a better teacher than the services sector, where everything seems to depend on human attitudes. There is something objective and imposing about the process of transforming materials into finished products."

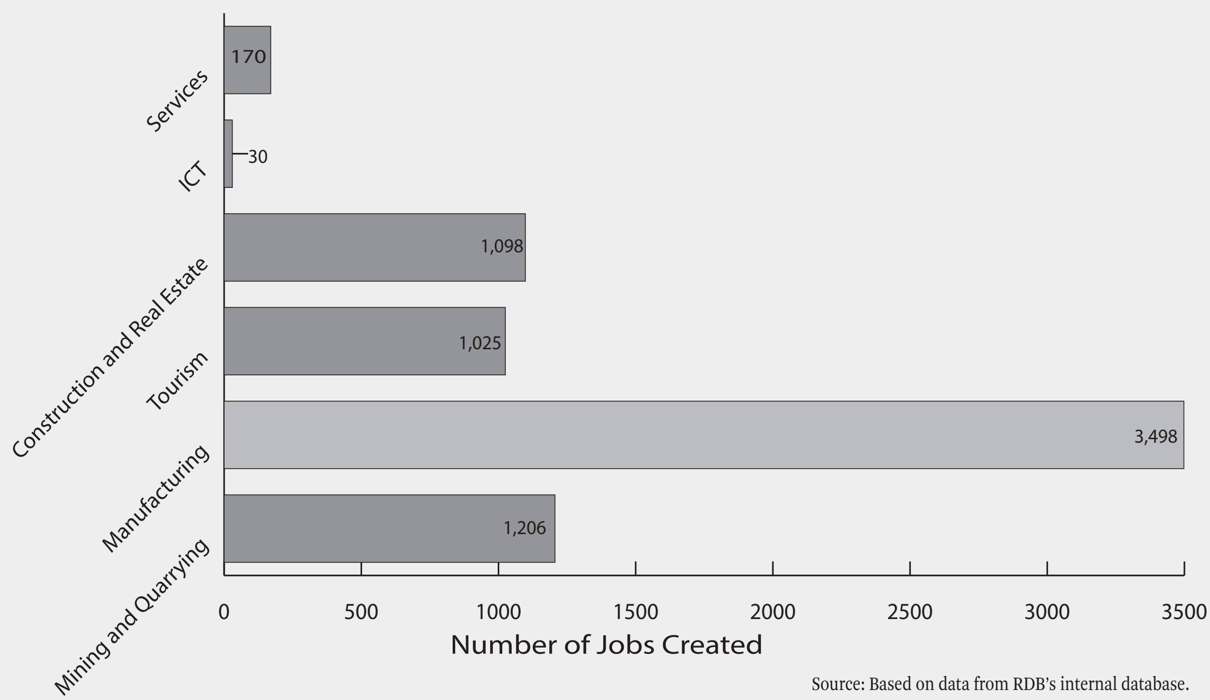
continued arguing that refusing hand-me-downs is necessary to build its domestic manufacturing capacity and announced plans to support firms affected by the AGOA suspension by setting up a facility to pay the taxes imposed on exporters.[36]

Figure 1: Chinese Investors in Rwanda, Investment Size (US$ Millions)



Source: Based on data from RDB's internal database.

Figure 2: Chinese Investors in Rwanda, Job Creation



Source: Based on data from RDB's internal database.

In terms of dollar value of Chinese investment in Rwanda, tourism still makes up the largest portion, at US$343.5 million out of a total of US$524.3 million of Chinese investment (See Figure 1).[37] By comparison, manufacturing makes up US$40.2 million. Other sectors include: mining and quarrying at US$70.7 million, construction and real estate at US$65.5 million, services at US$3.8 million, and ICT at US$0.6 million.

"The C&H factory was an exceptional case because it was the first case where we needed so many skilled people in labor-intensive work. Now, we are facing other investors in textiles and garments that are not from China, and some are Rwandan investors."

However, in terms of jobs created from Chinese investment in Rwanda, manufacturing is far ahead, and has created 3,498 jobs out of a total of 7,027 jobs created from Chinese investment (See Figure 2). Other sectors created comparatively fewer jobs: mining and quarrying (1,206), construction and real estate (1,098), tourism (1,025), services (170), and ICT (30). At this rate, the proportion of jobs created to total investment amount is highest among the manufacturing sector, reflecting Rwanda's prioritization of manufacturing as a significant source of job creation, made possible through national hiring and training initiatives. As a representative of the RDB's department of SEZs and exports says, "The C&H factory was an exceptional case because it was the first case where we needed so many skilled people in labor-intensive work. Now, we are facing other investors in textiles and garments that are not from China, and some are Rwandan investors."[38]

These decisions demonstrate Rwanda's growing focus on creating a manufacturing base to support its changing economic needs. Chinese investment may initiate the process, but technology transfer will facilitate long-term localization. Previous training programs in Rwanda focused on services, tourism, and ICT, and this new push into manufacturing remains aligned with Vision 2020's focus on building a productive labor force. Upon opening in 2015, C&H became one of the first factories in Rwanda to meld an emerging focus on manufacturing with an existing focus on training.

C&H GARMENTS: A BRIEF HISTORY

C&H GARMENTS IS NAMED FOR THE CO-FOUNDERS, Candy Ma and Helen Hai. Ma, with 18 years of experience working and managing factories in Africa (three in Mauritius and 15 in Kenya), had started working in Africa as a technician, and then factory manager, at a Taiwanese-owned company with 3,500 workers.[39] From 2009 to 2013, she was the managing director and owner of Future Garments, a manufacturing company in Nairobi, Kenya, which employed approximately 5,000 workers and exported garments to companies like Walmart and Target under AGOA.[40] Meanwhile, Hai, CEO of the Made in Africa Initiative and the United Nations Industrial Development Organization (UNIDO) Goodwill Ambassador for African Industrialization, was known for being the former vice president of Huajian Shoe International, and the founding general manager of its operations in Ethiopia, which had grown to 4,000 workers in two years.[41]

C&H produces a wide range of apparel goods, including t-shirts, polo shirts, safety garments, army uniforms, and sportswear, mostly for export to US and European consumers but also sold locally. Before entering Rwanda, C&H had been operating in

Kenya for seven years. The firm also has a factory in Ethiopia, as one of 22 sheds in the Bole Lemi industrial park outside of Addis Ababa; shortly after beginning operations, the factory had hired 300 workers and stated intentions to grow to over 1,500 workers.[42] In 2016, the African Export-Import Bank stated that it would support C&H's plans to move to Senegal and to source raw materials.[43] By 2017, Hai had confirmed plans to build a new C&H factory and hire 5,000 workers in the Senegalese Diamniadio industrial park.[44]

MOVE TO RWANDA

ON JULY 14, 2014, THE RWANDAN GOVERNMENT, represented by the CEO of the RDB, Clare Akamanzi, signed a MOU with C&H, represented by Hai and Ma, to set up operations in Rwanda. The RDB described the partnership as jumpstarting a local manufacturing industry: "If successful, this investment will serve as a 'proof of concept' that will bring further investment to Rwanda as has been the case in Ethiopia on the back of the Huajian success."[45] The RDB referred to achieving large-scale industrial manufacturing and developing a broad base of relevant skills consistent with the EDPRS II.

After initial training and hiring of Rwandan workers, C&H officially opened its doors in the Kigali SEZ in March 2015. By May 2015, C&H had reached the capacity to produce approximately 15,000 branded polo shirts per month; by June 2018, this capacity had increased to 70,000 pieces of clothing per month, although the factory is currently operating below capacity.[46] Upon opening, the first phase of development created a 1,500 square meters workshop with five production lines, and in 2017, the second phase of development created an 11,000 square meters workshop which will eventually house 16 production lines.[47] At the beginning of operations, Hai stated that her goals were to invest over US$10million in five years, create over 30,000 jobs, and bring in over US$1 billion to the country.[48]

Under the "Made in Rwanda Fairly" initiative, C&H and the Rwandan government developed a partnership with Fairtrade International, a London-based certification body, which aims to "raise work and living standards in poorer countries by creating sustainable economic opportunities for producers and workers, via fair trade."[49] Fairtrade focuses on producers at different levels of the supply chain, and emphasizes health and safety standards, decent wages, and investment in local communities and businesses. James Mwai, the Director of Programs for Fairtrade Africa, remarked that the partnership would establish a transparent sourcing plan with certified cotton and connect producers to top brands in the United States and Europe to support "growth of an integrated cotton supply chain in Africa."[50] According to Ma, overcoming the challenge of production in Rwanda, a small market, has been possible because C&H products can be exported to the United States and Europe through this Fairtrade partnership.

However, the factory also produces garments for local sale: these include uniforms for the Rwandan military, police, immigration department, and schools. The factory has set up 80 percent of products for export and 20 percent for the local market. This is not so much a regulation of the Kigali SEZ, as an East African law: To be qualified as an export processing zone (EPZ), a zone must export a minimum of 80 percent of its products outside the regional EAC bloc.[51] Still, Rwanda's landlocked status coupled with its nascent industrial base means most materials for the C&H factory continue to be imported from China, creating an obstacle to large-scale manufacturing capacity: according to factory management, transport of supplies to the factory has sometimes been more challenging in Rwanda than in Ethiopia, for example.

Ma and Hai echo other Chinese investors when citing reasons for setting up in Rwanda. First, the low corruption is regarded as attractive. In 2013, one representative of China Road and Bridge Corporation (CRBC) working in Rwanda remarked, "Here, I can tell the rate of corruption is very low. The most important thing is the government officials – they are, we can say, very straight."[52] Hai agrees with this sentiment and says, "I have to say Rwanda has amazing leadership, otherwise I wouldn't take [Ma] to Rwanda and also she would not make the decision [to set up in Rwanda]."[53]

Second, the RDB offers streamlined registration processes and personalized attention for foreign investors. A RDB employee based in Guangzhou who acts as a point of contact for Chinese companies interested in Rwanda notes the importance of "red carpet treatment": According to him, when a Chinese firm arrives in Rwanda to explore opportunities, it expects full engagement from government officials assigned to troubleshoot problems with the particular firm.[54] For example, each registered business is provided with a key account manager who acts as a liaison between a particular firm and local regulatory bodies. One key account manager describes his typical duties with a Chinese investor:

> "We do our follow-up of the projects. We call them, we talk to them, we visit them. We have a conversation with them about the project. We make sure that someone who's registered a project is committed to start that project in Rwanda. Is the project going on well? Is she or he facing any problems so that we can come in and see if we can facilitate in helping them? They meet the financial institutions to see if they can give them loans or we can arrange them to meet the potential local partners so they can partner with them on those projects. But even other things, if they have regulatory requirements, if there are a number of things they may need to know, we do a number of things to help them. [If] they feel at home, they feel like we care about them."[55]

Finally, despite the lack of a manufacturing base, the Rwandan government's guarantee to co-fund training programs has been important to attracting C&H to Rwanda. As demonstrated in the conditions of the MOU, the Rwandan government wishes to ensure manufacturing operations are sustainable and embedded in the local workforce, rather than existing as experimental projects. This buy-in from the RDB signals a level of commitment sometimes lacking in other African countries, and

Chinese firms including C&H have cited this dedication as instrumental in their move to Rwanda.

THE NATIONAL EMPLOYMENT PROGRAM (NEP)

IN 2014, THE RWANDAN GOVERNMENT ESTABLISHED the National Employment Program (NEP) as part of a national strategy to create 200,000 off-farm jobs each year.[56] The government had identified that 77 percent of the Rwandan working age population was employed in agricultural or informal sectors, considered "vulnerable employment" due to low productivity and earnings, while only 7 percent of the workforce was employed in the public and formal private sectors, considered "stable employment" because of adequate productivity and remuneration.[57] Therefore, the goal was to run policy interventions in the economy to create stable jobs for the rapidly growing and increasingly young population. This would require the private sector to take on responsibility for creating almost all additional jobs, the low skill and productivity levels of the labor force to be addressed through education and training, and the government's interventions to facilitate matching skills with jobs in the labor market. The government also identified China's role in creating manufacturing jobs: "Given [the] comparative advantages of Rwanda relating to political and economic stability, internal security and good governance, Rwanda should aim to attract some of the jobs that China will have to shed in the coming years in light manufacturing (e.g. assembling of consumer electronics, motorcycles, garments, footwear)...based on special economic and export processing zones."[58]

The plan has four pillars. Pillar 1, Employability Skills Development, focuses on equipping middle-level technicians with employable skills, facilitated by short courses that supplement general education and localized programs that target dropout students. Pillar 2, Entrepreneurship and Business Development, helps Technical Vocational Education and Training (TVET) graduates acquire start-up kits to develop their own businesses, which focus on using modern equipment to create high-quality products. Pillar 3, Labor Market Interventions, develops the skills of workers on public works projects so they can facilitate skills transfer after walking off projects, and has the goal of creating a framework for labor exports regionally and internationally. Pillar 4, Coordination, Monitoring, and Evaluation, aims to maximize impact by avoiding duplication or overlap of efforts between initiatives. In order to support crosscutting goals across government ministries, program coordination occurs between the Ministry of Public Service, Ministry of Trade and Industry, Ministry of Local Government, Ministry of Youth and ICT, Ministry of Gender and Family Promotion, Ministry of Education, and Ministry of Finance and Economic Planning.

The capacity building arrangement between C&H and the Rwandan government is funded under the Targeted Rapid Response Training intervention program under Pillar 1. Under this intervention, the Rwandan government supports an investor who invests in a sector that lacks skilled labor, to quickly train local staff to be employed by the investor. The investor identifies the needed skills and enters an agreement committing the Rwandan government to cover the cost of training. Later on, the investor reports on the progress of the training and subsequent employment of the agreed-upon number of staff. As one representative of the Workforce Development Authority (WDA) of Rwanda, the government program under the Ministry of Education that is the implementing body for the NEP, says of this particular program:

> "We need a flexible approach to respond to a changing environment. We have to first create the curriculum we want, and then we facilitate the investors. We negotiate with the company: 'How many people will you hire? What skills do you need?' Instead of being forced to do something, the company gets to negotiate and ask for something. The one condition is that Rwandans who go through the training will be employed by the company. The RDB works to identify the skills that companies need. We have to see if those skills are already here in Kigali. We focus only on new skills, things that don't exist yet. We match supply and demand."[59]

The WDA has partnered with diverse foreign development partners to train workers and create employment. These include the governments of Belgium (Belgian Technical Cooperation), the Netherlands (Netherlands Organization for International Cooperation in Higher Education), Canada (Canadian International Development Agency), Japan (Japan International Cooperation Agency), South Korea (Korea International Cooperation Agency), India, and Germany. The WDA also has partnerships with the African Development Bank and World Bank. The corresponding MOUs have focused on developing a national TVET qualifications framework, establishing business incubation centers, and strengthening capacity and training programs in human resources, hospitality, agriculture, and construction.[60]

In such partnerships, the WDA has often prohibited investors from employing more than three foreign managers, unless the investor can prove that local staff is not qualified to occupy the roles. In this case, an investor may bring in foreign expertise but is required to come up with a training and replacement program over a certain period of time. More often than not, foreign firms are incentivized to work with these local requirements, especially since importing foreign staff is costly.

Local firms have also benefited from the WDA-NEP's skills development and rapid response training programs. In March 2015, NPD Cotraco Limited, a Rwandan civil engineering firm, signed a MOU with the WDA to establish a vocational training center for construction projects.[61] By 2016, 500 workers who had received training in laying cobblestones under this program had begun constructing Kigali's inter-city road network. Although skills required for cobblestone road construction were nearly nonexistent in Rwanda, the WDA partnered with foreign counterparts, including a group from Italy to import Italian machinery and experts to train locals in using stone-cutting machines and laying cobblestones.[62] Most workers were provided by Rwanda's construction workers' trade union, which meant that workers could be quickly identified and trained in a short period of time. Some of the young workers were already enrolled in civil engineering studies but participated in the training and working program under the WDA to find part-time work relevant to their future employment prospects.

THE NEP-C&H TRAINING PROGRAM: THE BEGINNING

IN OCTOBER 2013, JUSTIN YIFU LIN, DIRECTOR OF THE Center for New Structural Economics at Peking University and former World Bank chief economist, visited Rwanda with a delegation of investors from Zhenjiang province to seek out opportunities in textiles and light industries.[63] At the time, the Rwandan government had begun focusing on massive job creation, and the delegation's visit signaled the impending role of Chinese manufacturing. In order to attract C&H, the Rwandan government committed project-specific, fiscal incentives, including tax deductions in the MOU with the firm.

In fact, in 2016, to phase out second-hand clothes and help firms like C&H that boost local manufacturing, the Rwandan government increased the tax on used clothes from US$0.2 to US$2.50 per kilogram, and the tax on used shoes from US$0.50 to US$5 per kilogram.[64] By 2018, the tax on used clothes had increased to US$4 per kilogram, with plans to raise this further in 2019 to $5 per kilogram.[65] In addition, the Ministry of Finance and Economic Planning announced plans to remove import duties on fabrics to boost local textiles, and increased tariffs on exports of raw hides and skins to encourage local leather and footwear production.[66] Saidi Hitimana, a general manager at C&H, remarked that the removal of taxes on raw materials, which were being imported expensively from China, could increase production significantly at the factory.[67] Shortly thereafter, the Rwandan government indeed scrapped taxes for imports of leather and textile raw materials, on which local investors had previously been charged up to a 25 percent levy.[68] The government also recognized that factories like C&H were impeded by the lack of local infrastructure: in its design of the NEP, the government had identified that failing to address the problem of logistics "pertaining to access to large input suppliers, equipment maintenance, marketing and transportation, and adequate infrastructure including energy at [a] competitive price" could "increase the transaction costs of attracting relocated Chinese businesses and outweigh the potential benefits of lower labor costs [in Rwanda]."[69]

Most importantly, the Rwandan government recognized textiles manufacturing skills were not readily available for C&H in the Rwandan workforce, and under its goal of creating employment and exports, strategized to provide the skills in an expedited manner. Tellingly, the NEP was established around the time of C&H's arrival in Rwanda; this timing served to remedy the problem of Chinese investors often finding that the type of labor they needed did not exist locally. As a manager of export promotion at the RDB explains: "The investor needs to prove what skills they need and the Rwandan government will respond."[70] At the time, there were no ready-made factories suitable for the firm's operations and the government had to quickly modify the Kigali SEZ to build a bigger factory space; the Huajian shoe factory in Ethiopia served as a model for the design of the factory. A five-year business plan was drawn up whereby

C&H committed to meet a minimum number of exports per year and hire local employees. Under the WDA-NEP, the Rwandan government agreed to cover most of the training costs, while C&H agreed to provide the training program. To accommodate the training program, the factory was divided into two spaces: one housed the actual manufacturing operations, and another was dedicated to training activities for newly recruited trainees.

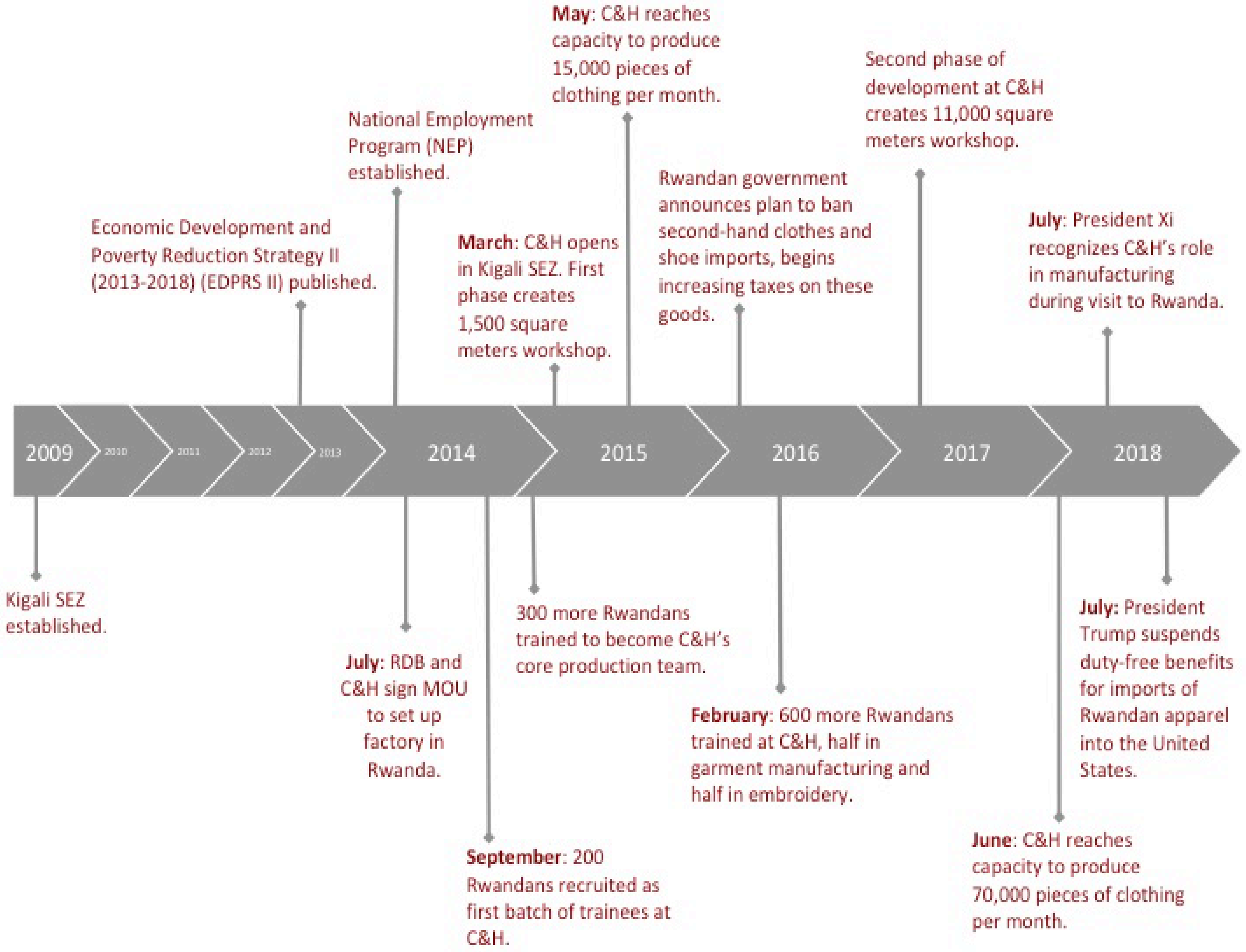
PROJECT IMPACT

THE NEP-C&H TRAINING PROGRAM: NEGOTIATIONS TAKE OFF

THE WDA IS RESPONSIBLE FOR THE DEVELOPMENT of technical skills in the workforce and not only implements the NEP, but also coordinates its work with other institutions such as the Ministry of Public Service and Ministry of Education. Therefore, the training program cuts across sectors, allowing input from different government bodies. As a first step, the WDA identified young Rwandans with preliminary training at a local technical institution and presented the list to C&H as potential employees. Subsequently, it was agreed upon that C&H could start operations with these Rwandans, but only after it had successfully brought them through its own formal training program.

In September 2014, the factory took on three Chinese employees and 200 Rwandan employees who were recruited as the first batch of trainees (See Figure 3). Around this time, C&H also brought in 10 Kenyan trainers from its operations in Nairobi (who were previously trained by Chinese managers) to train the Rwandan trainees. In 2015, when C&H officially opened its doors in the Kigali SEZ, the factory trained 300 additional Rwandans, of which two-thirds were women, who would go on to form the factory's core production team.[71] In February 2016, the factory implemented the training and hiring of 600 more Rwandans under a contract signed between the WDA and C&H worth nearly US$515,000, with costs covered by the Rwandan Ministry of Education; approximately 30 trainees would also be sent to China to acquire specialized textiles training with a focus on meeting local and international quality standards.[72] Half of these trainees would be trained in garment manufacturing, while the other half would be trained in embroidery: in April 2016, hand-embroidery was introduced as a new phase of operations in the factory due to local designers, and recognized international brands, increasingly requesting hand-embroidered products. Although the factory in Kigali has an embroidery training program, Ma plans to take her Rwandan employees to China for further training. Based on her experience, day-to-day factory operations can be learned in Rwanda, but detailed embroidery techniques require a curriculum that can be better carried out in China, where there are established resources dedicated to the craft. Otherwise, over the years, most Rwandan trainees have gone through the six-month, partially salaried training program consisting of lessons in using sewing machines, cutting fabric, trimming garments, and checking finished products. After training, employees can go on to work at C&H or be hired by other

Figure 3: C&H Garments Project Timeline



manufacturing firms. The NEP-C&H arrangement has continued to expand, and currently, the factory is made up of 1,500 Rwandan employees.[73] The partnership aims to expand to 4,000 employees by the end of the fourth year of operations.

Most trainees have been offered employment contracts after completing the training, and at least 70 percent are women.[74] The training program dropout rate has only been 2 percent, but over 70 trainees have left voluntarily to start their own local businesses and may be contributing to skills transfer and job creation in the local textile industry. To recruit trainees, the WDA placed advertisements in local TVET schools and also drew from its database of qualified students. It is worth nothing that there are over 350 TVET schools in Rwanda, and the number of TVET providers has increased 8 percent per year to accommodate the government's goal of creating a skilled workforce and boosting local industry.[75]

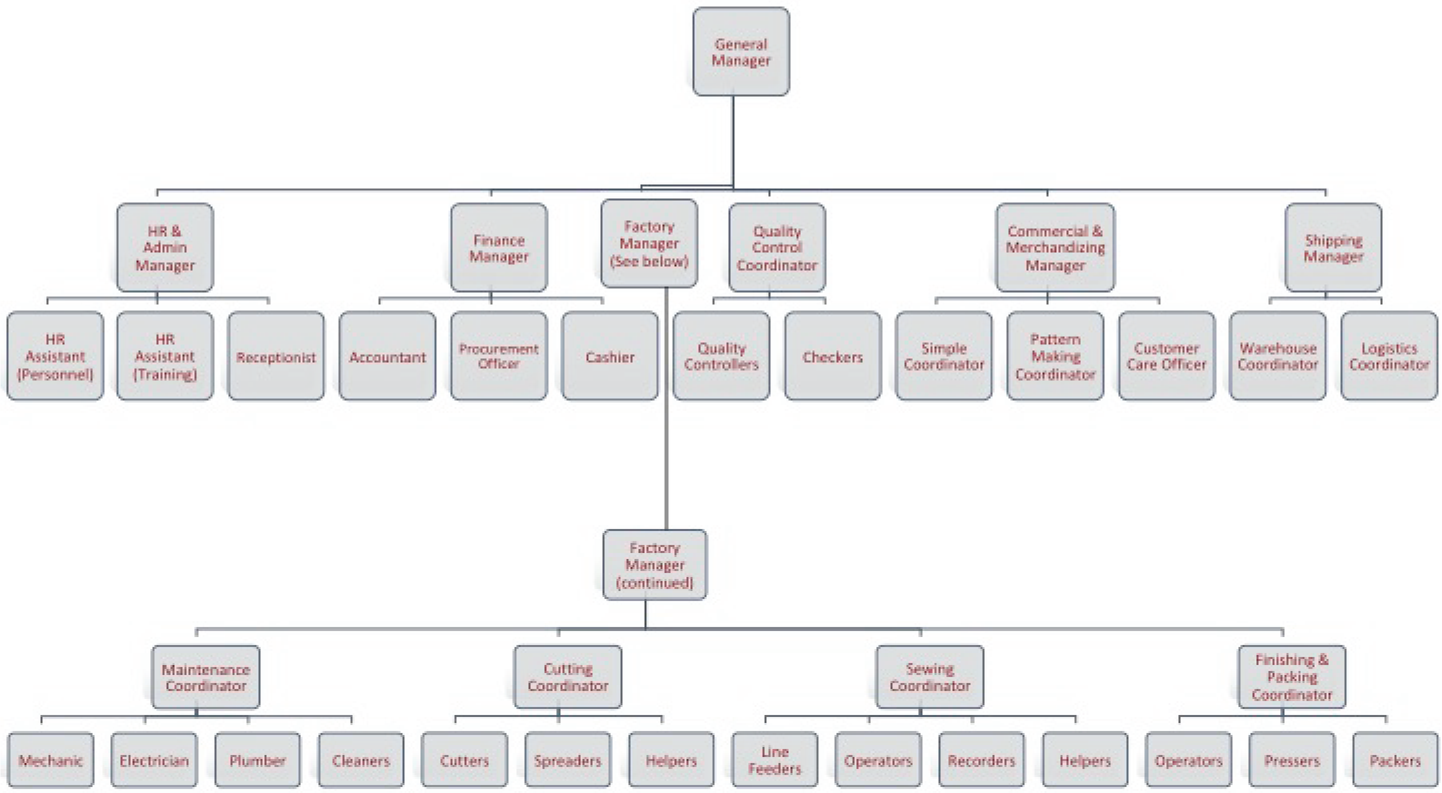
When asked about the results of the training program, Ma admitted there were initial challenges with Rwandan employees who lacked experience working for a global firm. Given the garment manufacturing industry was noticeably absent in Rwanda until C&H's entry, workers were often unaware of standards of quality and production in the textile manufacturing industry, especially when international buyers are involved. Ma described how her Rwandan workers would "think they already have the best standards," because they had not worked in an international company; to remedy this issue, Ma envisions bringing an increasing number of trusted Rwandan managers to firms in India or China so that they can "learn and see from a big, modern company."[76] One representative of the WDA echoed how Chinese C&H operations are crucial to scaling up Rwandan manufacturing because creating products for export will require close contact with outside markets: "The Chinese already understand Western markets, which are very sensitive. They understand how to enter the markets, not just how to create good quality products."[77] As revealed later, a significant part of the training program in the Kigali factory has focused on raising awareness of global quality and production standards.

However, Ma also remarked that compared to her experience with employees in other African countries, she was impressed with how quickly her Rwandan workers acquired skills, noting that they were "very serious about their work."[78] Similarly, Anna An, one of the factory's Chinese managers, described how compared to her experience in Mauritius, training in Rwanda had been noticeably easier due to the committed local government and workforce.[79] In the beginning, many of the workers had virtually no experience in garment making, and C&H shipped over 10 containers of cloth solely for training purposes. But by 2018, An described how workers had become self-sufficient: "Our workers now are able to make all styles of clothes...Group leaders of the workers have the ability to design production processes, plan production procedures, and arrange manpower."[80] Moreover, trained employees have gone on to set up their own manufacturing firms. For example, in January 2018, when a Rwandan manager resigned to establish his own garment factory, C&H provided its own technicians to work in his factory. C&H has reportedly trained hundreds of workers not just for C&H, but also for the Rwandan market focused on exports, and benefitted approximately a dozen Rwandan firms in the process. The effort has been deliberate, not competitive: After Rwandans complete the training program at C&H, they receive a certificate that can be applied to Rwandan manufacturing firms, mostly small and medium enterprises (SMEs), in the garments industry. Given the potential impact of C&H on building a domestic manufacturing industry, the Rwandan Ministry of Commerce has negotiated with local garment manufacturers to facilitate such technology transfer partnerships with C&H.

THE NEP-C&H TRAINING PROGRAM: THE CONTENT

ALTHOUGH THE NEP-C&H TRAINING PROGRAM IS AIMED at low-skilled workers, C&H also trains and hires managers (See Figure 4). The factory's high-level managers,

Figure 4: C&H Garments Ltd. Organization Chart



in charge of general operations, are typically Chinese (although the goal is for Rwandans to take on these positions over time), while middle-level managers, in charge of departments such as human resources and accounting, are mostly Rwandan. In addition, the factory has two tiers of Rwandan management. Managers who work at the supervision level oversee assembly lines on the factory floor, should speak English, and be at least six years out of high school. These managers are often charged with controlling daily production and arranging individual tasks among workers. Meanwhile, managers who work at the office level usually must have a college degree. The selection process for Rwandan managers includes three days of testing and interviews. By 2016, C&H had hired a total of eight Chinese managers and 13 Rwandan managers, and these numbers have grown over the years. Eventually, Ma and Hai intend to transfer all operational knowledge to Rwandans, and effective managerial training is crucial to achieving this goal.

QUALITY CONTROL AND LIFESTYLE TRAINING

RWANDAN MANAGERS UNDERGO ONGOING TRAINING FOR four hours each Saturday, from 8am to 12pm. According to An, the training focuses on preparing

Rwandan managers to effectively lead the factory's low-skilled laborers without supervision from Chinese leadership: "They learn how to manage the assembly line, so that they know which job belongs to which worker. Who is in charge of task one, and two, and three?"[81] One type of training for Rwandan managers at the supervision level is focused on recording output and overseeing quality control of the assembly line. The first course, "Quality Control Teaching Plan," emphasizes reasons for why the C&H factory needs strict quality control, and the lesson plan describes the quality control manager, or inspector, as having "very important work, equivalent to a police [officer]."[82] Furthermore, the plan reminds the manager to give the buyer good quality products that match the factory's high standards, but at the same time, to "oversee employees with poor quality consciousness" so that products are made in a "timely manner…to avoid [a] batch of repair." In other words, quality control managers are tasked with making sure that workers make solid products, but not at the expense of efficiency and speed of production; sub-par products will slow down output and prevent the factory from meeting its targets. Another portion of the lesson plan focuses on technical aspects of garment manufacturing. Managers are taught to understand how to use a tape measure and different types of stitches such as "low edges, loose stitch[es], parallel lines, run off, open seam[s]" so that they ensure workers make products using the correct techniques. An says of the results of training her Rwandan managers, "If I give them a certain style, and tell them to make it a certain way, they will know how to make it."[83]

Although much of the training focuses on operations and daily output, Chinese management has also incorporated lifestyle training into the curriculum. As one Chinese manager at the factory notes, "The first two weeks are for discipline. Machines come second."[84] An echoes this sentiment, emphasizing synergies between skills for success on the factory floor and skills for managing personal finances outside of work: "We teach Rwandan managers to make a plan. If you don't have money, you won't have energy to work efficiently on the factory line."[85] The NEP's own informational pamphlet identifies instilling a culture of "saving" among the Rwandan population as necessary to building a skilled, employable workforce.[86]

Appropriately, the "New Worker's Training Plan" includes lessons on personal finance and "specialized skills in [a] class program to be able to reach the company's culture."[87] On Mondays and Saturdays, Rwandan managers undergo quality control classes, and on Tuesdays, they attend lessons on managing the factory warehouse. But on Wednesdays, Rwandan employees are required to "learn about the company culture," one of discipline and personal identification with the success of the C&H factory. To emphasize the company culture to employees, signs hanging above each production line read "Diligence," "Commitment," "Gratefulness," and "Sincerity" as workers cut, sew, and assemble clothing below. Moreover, a "C&H Garments Ltd. Rwanda Rules" poster board hangs on one of the factory's walls, with instructions for connecting personal conduct to successful garment production. Some of these rules include knowing that "reporting if something is wrong is everybody's responsibility," engaging in "good teamwork to become the best factory in Rwanda," and remembering that "anybody caught stealing will be exposed to family, police, and government." There are notices of what happens when workers do not follow the rules. For example, one "deduction of bonus because of indiscipline" memo plastered on the factory wall says: "Yesterday, five people in line three didn't finish their targets because [they did not follow] the supervisor's plan. This showed bad behavior and the company will deduct their target bonuses. We hope everyone could be disciplined and become best workers." Finally, the wall has a "Dream Tree" where workers write how their work at C&H will improve their lives: "I want to pay for my son's school," "I work hard to finish my job properly…my dream is to have a higher position to earn more income in my future," and "I will start a small business to protect my family and live a good life."

Such approaches to training that go beyond purely technical aspects of work echo research conducted by Ching Kwan Lee in Chinese factories in Africa where Chinese managers impart "a more modern work ethic and discipline" to local workers.[88] As part of its efforts to acclimate Rwandan workers to the company's culture, C&H reminds employees to not be absent without proper approval and to meet daily production targets. Like many other Chinese factories in Africa, C&H extends this efficiency approach to "competitions" that the factory's managers hold each week to improve factory output and worker performance. Under this system, Rwandan workers are divided into teams that correspond to each of the factory's assembly lines. These teams then "compete" against each other to produce quality garments as quickly and efficiently as possible. The group of workers that produces the most garments, often exceeding targets, is declared the week's winner. Winning and losing teams are recognized with "best" and "worst" signs placed above their respective assembly lines, allowing employees to recognize the most efficient workers in the factory.

CULTURAL AND LINGUISTIC CHALLENGES

BOTH CHINESE AND RWANDAN MANAGERS CITE THE LANGUAGE barrier as a significant obstacle to carrying out the factory's daily operations and training programs. In response, factory management has placed a whiteboard at the back of the factory with "Learn Chinese" written across the top. Underneath, there are three columns, "Kinyarwanda," "English," and "Chinese," with the words "responsibility" and "discipline" written in all three languages: these words are used frequently in the factory to support training efforts. An also mentions the possibility of using targeted recruiting strategies to attract Chinese-speaking Rwandans from the Confucius Institute in Kigali or those that have studied abroad in China to address the language barrier in the factory.

More importantly, Ma and Hai have brought in local managers from their other African operations to conduct training at C&H in Rwanda. A Kenyan, not Chinese, manager from C&H's operations in Nairobi leads the quality control training. One motivation for using this structure is to ease miscommunication between Chinese and Rwandan employees. The barrier between Chinese and English or between Chinese and Kinyarwanda is partially remedied when Kenyan managers speak in Swahili with local workers. On other projects in Rwanda, Chinese and Rwandan workers have also created their own combination of Swahili, English, and Chinese for communication purposes. Moreover, shared East African cultural norms can make training more accessible to Rwandans. As a representative of the WDA says, "There is an issue of language. New trainees don't know English, but they can communicate in Swahili. Also, being in the region, Kenyans understand much of our culture."[89] Because Ma and Hai have worked with these Kenyan managers in their C&H operations in Nairobi for several years, they are more aware of how much the managers know: consequently, they can manage expectations and work more efficiently, eliminating the learning curve of adjusting to new local managers. In addition, importing regional managers to carry out training programs in Africa cuts the costs of importing trainers all the way from China.

The lessons of overcoming cultural and linguistic challenges between C&H employees in Kigali may inform other manufacturing operations in the near future. An explains that because Rwandan managers speak French, they can easily be exported to manufacturing operations in African countries where French is the working language. Notably, C&H managerial positions in charge of human resources are almost exclusively occupied by Rwandans; it is no coincidence that human resource managers have the closest interactions with local workers, and therefore, require some of the strongest cultural understanding and communication abilities in the factory.

CONCLUSION

THIS STUDY FINDS THAT THE RWANDAN GOVERNMENT was able to exert agency in negotiating the entry of C&H Garments into Kigali by implementing requirements for training and technology transfer to the local workforce. In the process, C&H is likely to facilitate structural transformation and industrial upgrading of the Rwandan economy in service of building a domestic manufacturing base and creating jobs. In particular, C&H has taken off in Rwanda due to low corruption, fiscal incentives in the Kigali SEZ, and personalized treatment from the RDB. Moreover, the NEP-C&H training arrangement may be a model for future agreements: In September 2017, the RDB signed a MOU with the Huajian Group, the Chinese footwear manufacturer, for a 10-year-plan to set up a factory in Rwanda, invest approximately US$1 billion, and create over 20,000 jobs.[90] With continued collaborations between the Rwandan government and Chinese manufacturing firms, Rwanda may efficiently curb its trade deficit and create massive opportunities for its growing population.

One challenge has been the cultural and linguistic barriers between Chinese and Rwandan employees; this has partially been remedied by bringing Kenyan managers to Kigali to lead training. But Ma and Hai have further plans to turn this initial disadvantage into an opportunity to link their operations across Africa. Ma describes: "Maybe I will bring my Ethiopian workers to come here to learn how Rwandans work hard. If I open a factory in Senegal, I will take Rwandan managers to go there to train workers."[91] If Chinese training programs create Rwandan managers able to assist in other African countries' operations, these networks may circumvent usual barriers to facilitate greater industrialization in Africa: After Chinese managers train Rwandan managers, these mangers may train African managers in neighboring countries, after which these managers in neighboring countries may train their own workers. This model may appear to lead to a training program that transforms African human capital by sustaining itself without continuous input from Chinese management. However, obstacles remain, including the possibility national governments will lack institutional buy-in or willingness to finance training programs, or if there is a lack of synergy or relevance between industry needs across countries.

To date, effects of the AGOA suspension on C&H are unclear. One motivation for C&H's relocation to Rwanda had been duty-free access to the US market under AGOA, and some of the largest buyers have come from the United States. Some factory managers stated that many US companies halted their orders post-suspension, forcing C&H to look for new markets in Europe and Rwanda.[92] Malou Jontilano, the general manager at C&H, described a search for "consistent" buyers across Europe, Africa, and Asia, with Belgium, Germany, the United Kingdom, and France emerging as interested buyers.[93] In addition, with the setup of a separate factory dedicated to production for the Rwandan market, C&H may be able to meet the increasing demand for garments created from the decline of second-hand clothes; a previous obstacle to local sales had been a preference among Rwandan buyers for cheap second-hand clothing.[94] The AGOA suspension may in fact usher in a new era of production for the local market. Regardless, C&H has intentions to expand operations, with a third phase that may create up to 3,000 jobs; some factory managers have stated that production and employment have not been affected by the AGOA suspension, maintaining that C&H will create 10,000 jobs by 2022.[95] Other reports indicate that the factory has had to halt training and worker hiring until the search for new markets is complete.

There are several remaining questions that additional research can help answer. First, to what degree can on-site training programs replace technical schools in Rwanda? According to the export promotion manager at the RDB, the curriculum of these schools may change over time to match the needs of C&H and other Chinese manufacturing operations. In addition, if other local manufacturing firms benefit from hiring Rwandan managers that were trained at C&H, the need for formal training schools may diminish. Second, how does the partnership between the WDA-NEP and C&H compare to arrangements with other foreign investors' training programs in Rwanda? Previously, the Rwandan government worked with counterparts from Singapore and South Korea on technical and vocational training. Additional studies can help determine if there are significant differences between the content of Chinese training programs and those of other foreign firms. Lastly, what happens if the manufacturing industry undergoes rapid changes that affect the relevance of training? For example, impending automation may affect the types of jobs that are needed (or no longer needed) at both Chinese and indigenous manufacturing factories across Africa. If this is the case, African governments and Chinese firms will need to focus on modifying skills transfer programs to reflect the most cutting-edge manufacturing practices.

As more Chinese manufacturers enter Rwanda, this study will become increasingly important to inform best practices for a synergistic relationship between local manufacturing and human capital training. In addition, Rwanda is not alone in its industrialization goals. As other African countries seek to build manufacturing capacity and train local workers with Chinese investment, the agreement between WDA-NEP and C&H will become an important model to study in order to enhance structural transformation and technology transfer. ★

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AUTHOR BIOS

JANET EOM:

Janet Eom is a research associate, and the former research manager, at the China-Africa Research Initiative at Johns Hopkins SAIS. Previously, she worked on China-Africa economic relations in the Office of the President in Rwanda and at the Carnegie Endowment for International Peace. She holds a Master of Global Affairs from Tsinghua University, where she was a Schwarzman Scholar, and a Bachelor of Arts from Harvard University.

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1717 Massachusetts Avenue NW, Suite 733
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www.sais-cari.org
Email: sais-cari@jhu.edu

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