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Boosting Africa's Trade and Development by Tackling Some Supply Chain Challenges

Tielman Nieuwoudt

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What are Supply Chains and Why do They Matter to Africa?

A supply chain is a process by which products or services are sourced, produced, and distributed to the customer. Supply chains, therefore, play a critical role in the ability of African countries to trade amongst themselves and to participate in and benefit from trade with the rest of the world. For the most part, supply chains in Africa—across a range of industries and sectors including agricultural, mineral, manufacturing, and retail—are weak and poorly integrated, prone to inefficiencies in cost and timeliness, and often lack the value addition that would allow African countries to realize more of the benefits of trade and boost development. Africa, perhaps more than any other region, could benefit from urgent attention to address its supply chain challenges.

It is estimated that by 2050, Africa will account for over half of the global population growth. The populations of 26 African countries are likely to at least double in size between 2017 and 2050.[1] Furthermore, approximately 170 million Africans will enter the labor market between 2010 and 2020.[2] With a growing population eager for jobs and growth opportunities, African governments and Regional Economic Communities (RECs) are

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seeking ways to increase their share of the global economy, and to reduce their dependency on raw and unprocessed commodity exports, including by implementing measures to improve intra-African trade and trade with the rest of the world. A key part of these measures focuses on remedying the continent's supply chain challenges and enhancing its role in global value chains. This paper focuses on one key component of African supply chains: transportation and logistics. It: i) provides an overview of the state of intra-regional trade and trade between Africa and the rest of the world, as well as some measures that are being implemented to boost trade; ii) highlights the key challenges to trade as a result of Africa's infrastructure and logistics gaps; and iii) offers recommendations for addressing key challenges in this sphere.

An Overview of Africa's Trade

Heavy Reliance on Commodities and Intermediate Products

According to the International Monetary Fund (IMF), over the decade ending in 2014, Africa accounted for 6 of the 10 fastest growing economies in the world. Africa continued on this trajectory and recorded USD $317 billion in exports in 2016.[3] However, overall, the continent's role in the global economy has been diminishing. For example, African exports contributed less than 6 percent to the global economy in 1980, but this had decreased to just 2.2 percent in 2016.[4] This is in stark contrast with East Asia's share, which increased from 2.25 percent in 1970 to 17.8 percent in 2010.[5]

A key contributing factor to the low trade volumes was the region's continued heavy reliance on primary commodities and intermediate goods (or products that require further processing for utilization in the production of finished goods) combined with increased pressure from the drops in commodity prices during this period. It was estimated that intermediate goods alone accounted for approximately 60 percent of Africa's total imports and over 80 percent of its exports.[6] The large share of primary commodities and intermediate goods speaks to the low level of industrialization in Africa, which has lagged behind other regions. For example, only 6 percent of Africa's jobs are in the manufacturing sector.[7] Furthermore, the share of African manufacturers in total merchandise exports globally was only 18.5 percent in 2013, while imports of manufacturing intermediates have grown.[8]

Many African governments recognize the problems stemming from weak industrialization and the benefits that their countries could yield from industrialization, including much-needed large-scale job creation. However, any plans to push industrialization and address the high unemployment rates (which are as high as 60 percent in some countries) in many countries[9] would also need to be accompanied by investments in education and training in order to address the shortage of skilled labor and high labor costs currently afflicting the continent.

The State of Intra-African Trade

African countries are also taking steps to increase trade amongst themselves at the bilateral, sub-regional, and continental levels. However, the continent still lags behind other world regions when it comes to intra-regional trade. In 2010, between 10 and 11 percent of Africa's total trade was intra-regional trade. In comparison, in 2010, 17 percent of trade in developing Asian countries was intra-regional, whereas 60 percent of trade in the European Union was intra-regional.[10]

In interrogating these figures, there is evidence of backward linkages between companies and their suppliers in the African mining industry, but regional supply chains in the textile and agricultural industries remain largely untapped, with less than 10 percent being sourced from the continent. The weak and inefficient regional supply chains in the agricultural sector are especially troubling because the sector employs approximately 65 percent of Africa's labor force and accounts for 32 percent of its gross domestic product.[11] However, agricultural cultivation and agribusiness remain largely unexploited across much of the continent, as exemplified by the fact that Africa accounts for 60 percent of the world's uncultivated arable land.[12] Moreover, it continues to rely on agricultural imports including an estimated $48.5 billion in agricultural products in 2014.[13] Transforming the agricultural sector, including its underpinning supply chains, is especially critical for Africa because agricultural exports tied to integrated supply chains and global value chains hold great potential for the continent's food security and economic growth, including claiming a bigger share of the global economy.

Continental Free Trade Area

To further boost trade at the continental level, African governments signed the Tripartite Free Trade Area (TFTA) agreement in 2015 and commenced negotiations for the establishment of the Continental Free Trade Area (CFTA). The three RECs currently engaged in this effort are the Common Market for East and Southern Africa (COMESA), the East African Community (EAC), and the Southern African Development Community (SADC). The United Nations Economic Commission for Africa (UNECA) calculated that the CFTA could increase intra-African trade by as much as $35 billion per year over the next six years, and provide market access to more than a billion people.[14] However, Africa currently has eight RECs that are officially recognized by the African Union and an additional six regional organizations with economic-related mandates. This array of organizations, some with overlapping memberships and mandates as well as different economic strategies, makes economic integration and cooperation challenging and time-consuming, as the recent tariff disputes in the EAC between Tanzania and Kenya highlights.[15] While a big step in the right direction, the CFTA will take strong political will and commitment from African leaders.

World Trade Organization

The World Trade Organization's (WTO) Trade Facilitation Agreement (TFA), ratified in 2017,[16] aims to provide more transparent trade laws, reduce transaction costs, simplify customs procedures, and remove trade barriers. However, as of 2017, 22 African countries had still not ratified the TFA citing several concerns for non-ratification, including their view that subsidies provided to farmers in richer Northern countries essentially create a significant barrier to trade for African farmers. Other African countries have expressed concerns that the provision protecting the intellectual property rights of pharmaceutical companies could have a negative impact on their ability to provide affordable medicines for their largely poor populations.

Africa's Major International Trading Partners

Africa's three largest trading partners are China, the European Union (EU), and the United States. Of these, China is Africa's single largest trading partner, a position that it assumed in 2009.[17] The total value of trade between China and Africa was just above USD $6 billion in 2000, but has been increasing rapidly since then. The value stood at almost USD $88 billion in 2010 and USD $106 billion in 2015.[18] FDI has grown even faster than trade over the past decade, with a 40 percent increase per year.[19] Annually, China has invested on average $12 billion from 2011 to 2016.[20] In addition, China is also Africa's most visible infrastructure investor, playing a role in 41.9 percent of all projects undertaken.[21] It is also the largest provider of loans through institutions such as the Export-Import Bank of China.[22] However, it is worth noting that in 2014 Chinese lending for infrastructure projects was substantially lower than in each of the previous three years.[23]

The United States is Africa's third largest trading partner, behind China and the European Union. The aggregate value of imports and exports between the United States and Africa stood at almost $33 billion in 2000, $97 billion in 2010, and dropped down to $43 billion in 2015.[24] However, the United States was the top source country for FDI projects into Africa.[25] The African Growth and Opportunity Act (AGOA)—established in 2000 and renewed in 2015 for another 10 years—forms the cornerstone of U.S. trade with Sub-Saharan Africa. AGOA provides duty-free benefits to approximately 6,500 African goods.[26] AGOA imports to the United States increased fourfold between 2001 and 2013.[27] U.S. imports from Sub-Saharan Africa totaled $18.9 billion in 2015, but decreased 29.6 percent ($7.9 billion) from 2014, and 63 percent from 2005.[28] This was driven mainly by a decrease in petroleum imports due to global petroleum price slumps.[29] It is important to note that most of this trade is dominated by energy, apparel, vehicles, and some agricultural products, as demonstrated by the fact that approximately 90 percent of U.S. imports from Africa are focused on petroleum.[30] While efforts to encourage diversification have been made, especially with the institution of Regional Trade Hubs through USAID, it has been argued that more needs to be done under AGOA to help African countries diversify their exports.[31]

A key concern voiced about international trade agreements relating to Africa—including AGOA—is that they tend to have relatively short duration spans. These short timeframes make it difficult for critical industries, such as those in the textiles and manufacturing sectors, to participate as they require longer planning and investment timelines if they are to succeed.

Even as Africa works to boost trade figures at both the continental and global levels, it also needs to address a number of transportation and logistics challenges confronting the continent.

Trade: The Role of Infrastructure and Logistics

Infrastructure and Logistics Investment

The lack of infrastructure on the continent has been a major barrier to trade, growth, and development. African governments understand this and they have increased investment in infrastructure in recent years, including the development of transport corridors, such as the Ibadan-Lagos-Accra Corridor, and the Northern and Central Corridors between Central and East Africa.[32] For example, of the total $66.5 billion of FDI in 2015, $2.8 billion was allocated for logistics and transportation, and overall, African countries invested $24 billion (2015) and $26.3 billion (2016) in infrastructure.[33] However, these figures still fall far short of the $95 billion that the World Bank estimates is required annually to build the infrastructure that Africa needs for sustainable economic growth.[34]

Even with these investments, African countries continue to score poorly on the World Bank's Logistics Performance Index (LPI), with many countries classified as logistics-unfriendly. In Africa, third party logistics companies (3PLs) and outsourcing remain negligible, and a largely fragmented retail base adds to the continent's transportation-related supply chain complexities. This is largely due to the mostly informal retail market (e.g., small independent retailers) which accounts for approximately 70 percent of the total retail market.[35] According to the World Bank's LPI, the quality of a country's supply chain or logistics competency system can be measured by several factors including: 1) quality of infrastructure; 2) control of corruption; 3) local supplier quality; and 4) supply chain visibility (or the ability to track and trace goods across a supply chain from source to end-user or consumer).[36] Of the bottom 20 countries on the LPI, 12 are African, with Somalia and Mauritania accounting for two of the bottom four positions.[37] One notable exception is South Africa, which is a logistics leader among all middle-income countries.

An additional transportation challenge stems from the fact that nearly 40 percent of African countries (15 out of 55) are landlocked.[38] This large number of landlocked countries further adds to transportation and logistics costs in Africa. Logistics costs are high in most African countries; however, there are wide differentials between some countries. The global rankings of South Africa (20) and Ethiopia (126) in the Logistics Performance Index below indicates this disparity.

Logistics Performance Index

Country	Africa Ranking	Global Ranking	LPI Score
South Africa	1	20	3.78
Kenya	2	42	3.33
Egypt	3	49	3.18
Botswana	4	57	3.05
Uganda	5	58	3.04
Tanzania	6	61	2.99
Rwanda	7	62	2.99
Algeria	8	75	2.77
Namibia	9	79	2.74
Burkina Faso	10	81	2.73
Nigeria	13	90	2.73
Cote d'Ivoire	15	95	2.60
Ethiopia	24	126	2.38

A selection from the World Bank Logistics Performance Index 2016.

Road Infrastructure

Africa's road network poses one of the biggest challenges to trade. While there are significant differences in road density and quality of roads from one country to another, overall, only 43 percent of Africans have access to all-season roads.[39] For example, in Southern Africa and the Maghreb region, the road infrastructure is better developed than in Central and West Africa. About 67 percent of roads in the Maghreb region are paved, whereas less than 9 percent of roads are paved in the Central Africa region.[40]

Seaports

With over 90 percent of Africa's trade facilitated through ports,[41] seaports are important to African economies. However, African ports remain marginal players on the global stage, as they handle only 3 percent of global container traffic.[42] Many African ports are in urgent need of increased investment and improved management practices. Ports often struggle with high dwell times, limited material handling equipment, and complex bureaucratic processes, including cumbersome customs and clearance procedures. Differences in dwell times across key ports in Africa, as demonstrated below, create inconsistencies for moving goods across the continent. However, the success of South Africa and Kenya in minimizing port dwell time could be replicated by other African countries with seaports.

Port Dwell Times

Country	Dwell Time
Nigeria port averages*	19-25 days
Cotonou-Benin	12-14 days
Mombasa-Kenya	5-7 days
Durban-South Africa	4 days

Data sourced from Nigeria Shippers' Council (NSC).

Dwell time is an indicator of efficiency and is the amount of time a container waits to get picked up at a terminal after being unloaded from a vessel.

African countries are taking measures to address some of these port-related deficiencies by increasing investments in their ports. Nigeria, Kenya, and Tanzania all have large-scale projects in the pipeline. Africa's largest planned port project in Bagamoyo, Tanzania (20 million, twenty-foot equivalent units) is set to start operations in 2020. In addition, foreign port operators in Europe and the Middle East have identified Africa as a major source of potential growth and it is likely that there will be more investments in African ports.

Railways

Africa's railway network is in an even worse state than its roads, and many railways remain a remnant of the colonial past. Africa's high prevalence of narrow gauge lines, often of differing sizes depending on each country, has resulted in poorly integrated railway networks with neighboring countries. However, regional integration including the construction of new standard gauge lines has commenced in West, Southern, and Eastern Africa, registering a growing number of large-scale projects on the continent. As seen in the table below once complete, these railways should help to facilitate the movement of goods and people in a more timely and efficient manner.

Planned and Ongoing Rail Projects

Country	Projects	Value USD $ billion
Algeria	Tissemlit-Boughezoul Rail	2.1
Ethiopia	Awash-Woldia-Hara Gebeya Rail Project	1.7
Ethiopia	Mekelle-Hara Gebeya-Woldia Railway Project	1.5
Kenya	Mombasa-Nairobi Railway	3.8
Morocco	Tangier-Casablanca Rail	4.1
Nigeria	Lagos-Ibadan Rail	1.5
Tunisia	Reseau Ferroviaire Rapide Project	2.8

A selection from Deloitte Construction Trends Africa 2016.

Air

Per the World Bank, in 2010 Africa accounted for less than 1 percent of the global air service market.[43] Greater distances, low population density, and a lack of terrestrial infrastructure makes aviation an essential component for growth. However, the air cargo industry in Africa suffers from infrastructure challenges and a lack of "Open Skies." Due to Africa's under-served market status as well as the prevalence of bilateral air agreements, it is often cheaper to fly freight from one African country via the Middle East to another African country.[44]

African countries recognize the challenges posed by their failure to implement the Yamoussoukro Decision of 2000, which sought to reform the air transport sector in Africa and counteract protectionist policies hindering air transportation on the continent. Perhaps recognizing the urgency for action, 23 African countries launched the Single Air Transport Market (SAATM) initiative on January 28, 2018 during the 30th Summit of the African Union.[45] If implemented, SAATM will go a long way in addressing a key barrier to trade on the continent.

Technology

The telecommunication sector in Africa has seen unprecedented growth in recent years, driven predominately by mobile phones. The continent has benefited from new submarine and regional overland cables. Broadband speeds have been increasing and are set to increase 240 percent across the continent by 2020.[46] As with road infrastructure, there are significant differences in regional and country development. North and Southern Africa (e.g., Egypt, Morocco, Libya, South Africa, and Seychelles) score higher when compared to other regions in the International Telecommunication Union (ITU) Information and Communication Technologies (ICT) Development Index. For example, South Africa has 142.38 mobile phone subscriptions per 100 inhabitants, while Mali has 120; Morocco has 121, and Egypt has 114.[47] However, Africa as a whole has 74.60 subscriptions per 100 inhabitants. Similar disparities are evident for access to the internet.

Almost 53 percent of South African households have access to the internet, whereas the African average is about 16 percent.[48] As a region, Africa is still trailing the rest of the world when it comes to fiber broadband networks. Even in the presence of technological infrastructure, prohibitive costs keep many people from accessing the internet. With less than 50 percent of the population having access to electricity, tapping into internet and telecommunications networks remains a challenge.[49]

Advancing telecommunications and internet capabilities improves supply chain efficiencies continent-wide. Companies in Africa are employing mobile platforms to bridge the mismatch between supply and demand, streamline operational processes, and communicate directly with end users in the supply chain to enhance service and goods delivery. Enhancing communication throughout supply chains also builds trust between partners and bolsters supply chain visibility. The effect of increased visibility is greater awareness of the weakest links in the chain, identification of the optimal responses to strengthen these links, and data accumulation to inform future supply chain decisions.[50]

Customs and Border Processes

Crossing Africa's borders remains challenging, and complaints abound about delay-inducing processes and procedures including duplicative procedures and systemic corruption at border posts.[51] Reducing these bureaucratic bottlenecks, minimizing opportunities for corruption, and taking other measures to maximize efficiency for cross-border trade are crucial for the creation of efficient regional trade, global trade, and value chains. The lack of technology also impacts supply chains during the customs process. For instance, customs and border clearance procedures are still paper-based in many countries, and often require numerous copies. These procedures "thicken" the border with redundant and inefficient clearance procedures, while also increasing vulnerability to corruption.

Summary of Policy Options

1. Improve Trade Facilitation Processes

a. Many African countries appreciate the value of trade facilitation agreements: However, some African countries have expressed concerns about potential negative impacts of some of the requirements in the World Trade Organization's Free Trade Agreement, such as the impact of Northern-focused farm subsidies on African farmers, and the impact of intellectual property rights on access to affordable medications in Africa. The WTO should make efforts to address African concerns.

b. International trade agreements are often characterized by short timeframes, which may prohibit certain industries from participating, as they require longer planning and investment timelines: Governments should consider lengthening the timeframe of trade agreements, which would result in more stable, lower risk and cost-effective long-term agreements.

c. Africa's lack of industrialization has contributed to low levels of participation in global value chains and overall global trade: RECs and African governments would do well to adopt and commit to clear industrialization strategies and policies. These strategies and policies should consider addressing market fragmentation within and across countries, as well as seek to meet economies of scale by establishing regional manufacturing clusters.

2. Prioritize Infrastructure Development

a. Africa lacks a reliable, comprehensive, integrated transportation network: African governments and regional economic communities should do more to prioritize infrastructure development and implement long-term coordinated infrastructure projects.

b. Financial institutions and bilateral partners can assist governments to structure infrastructure projects as blended finance models with Private Public Partnerships (PPPs), in which national governments assume less debt and share financing responsibility with external partners.[52]

3. Reform Custom and Border Management

a. Governments should continue to push for and implement comprehensive customs and border reforms that aim to improve coordination amongst government agencies within RECs, as well as reduce bureaucratic procedures in order to improve the trans-border movement of goods and people: There is also an opportunity to introduce technology into the customs and border clearance processes, and to enhance law enforcement activities at borders in order to reduce delays and to minimize corruption.

4. Provide Financing and Incentives to Targeted Industries

a. African governments should consider creating an investor-friendly environment for new technology (e.g., logistics technology): Incentives could be provided to support startup entrepreneurs and encourage technology investment in rural communities.

b. African governments would do well to direct financing toward critical but currently neglected industries—such as agriculture—which could play a transformative development role, such as enhancing food security and providing employment.

5. Enhance Training and Skills Development

a. International partners and RECs should support trade agreements as well as requisite training for regional businesses, including on international accreditation processes and requirements for accessing global markets: This will enable companies to adapt to global standards and move up their respective value chains.

b. The private sector and venture capital community could play a key role in developing incubators to create startups, facilitate the scaling up of these startups, and help integrate Africa into the digital supply chain age.

Mr. Tielman Nieuwoudt is Principal at The Supply Chain Lab in South Africa, a consultancy focusing on factory to village supply chain solutions.

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The Africa Program

The Africa Program works to address the most critical issues facing Africa and U.S-Africa relations, build mutually beneficial U.S-Africa relations, and enhance understanding about Africa in the United States.

The Program achieves its mission through in-depth research and analyses, including our blog, Africa Up Close, public discussion, working groups, and briefings that bring together policymakers, practitioners, and subject matter experts to analyze and offer practical options for tackling key challenges in Africa and in U.S.-Africa relations.

The Africa Program focuses on four core issues:

i. Good governance and leadership

ii. Conflict prevention, peacebuilding, and security

iii. Trade, investment, and sustainable development

iv. Africa's evolving role in the global arena

The Program maintains a cross-cutting focus on the roles of women, youth, and technology, which are critical to Africa's future: to supporting good governance, to securing peace, to mitigating poverty, and to assuring sustainable development.

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One Woodrow Wilson Plaza
1300 Pennsylvania Avenue, N.W.
Washington, D.C. 20004-3027

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