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Strengthening U.S.-Sub-Saharan Africa Trade: AGOA, Technical Standards, and Energy Initiatives

*Policy recommendations for strengthening
U.S.-Sub-Saharan Africa energy trade beyond
fossil fuels in a globally competitive
environment*

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STRENGTHENING U.S.-SUB-SAHARAN AFRICA TRADE: AGOA, TECHNICAL STANDARDS, AND ENERGY INITIATIVES

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ASTM International WISE 2018

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TABLE OF CONTENTS

I.	Overview	3
	Issues	3
	Proposed Solutions	3
II.	Executive Summary	4
III.	Foreword	5
	About the Author	5
	About the WISE Program	5
	About ASTM International	5
	Acknowledgements	5
IV.	Acronyms	6
V.	Background and Issue Definition	7
	Population Growth and Electrification Needs	7
	Underutilization of AGOA and U.S. Investment	9
	National Security	10
	Competing Foreign Interests	12
VI.	Key Conflicts and Challenges	14
	Technical Standards and Trade	17
	Energy Demand in Sub-Saharan Africa	21
	Power Africa	22
	Trade Africa	23
	President's Advisory Council on Doing Business in Africa	23
	Millennium Challenge Cooperation	24
VII.	Policy Recommendations	24
	Amendments to the AGOA Framework	24
	Promoting Private Sector Investment	25
	Regional Integration	26
	Negotiating Trade Privileges through U.S. Standards	26
	Negotiation of Free Trade Agreements	27
VIII.	Conclusion	30
IX.	References	31

OVERVIEW

Issues

620 million people are living in Sub-Saharan Africa without access to electricity. While it is estimated that one billion people will gain electricity by 2040, the population growth will outpace the rate of electrification, leaving 530 million people without electricity. This form of energy poverty is the largest hindrance to productivity and economic development, such that the World Bank estimates that 4.9 percent of African sales are lost annually due to fluctuating energy supply.

The United States trade relationship with Sub-Saharan Africa remains critically underdeveloped. The U.S. receives only 8% of overall African exports, with 90 percent of the trade by value being in the oil and gas sector. While the African Growth and Opportunity Act (AGOA) has succeeded in increasing trade volume, it is generally accepted that oil and gas exports would have attracted buyers regardless. The largest failure of AGOA has been in not transforming the African economies, and in not diversifying trade beyond oil.

Foreign interests are edging the United States out of the African continent. Africa exports ten times more to Europe than to the United States and has multiple trade agreements such as EU's Economic Partnership Agreements (EPA) and Everything-But-Arms (EA) which have higher utilization rates than AGOA. While the EU has been historically a large trade partner, China has been encroaching upon the continent and has surpassed the United States as a source of foreign direct investments. China's presence is concerning due to their no-strings-attached approach to trade, which leaves African countries vulnerable to worker exploitation, environmental damage, and unsustainable business practices.

Proposed Solutions

The AGOA framework remains one of the most important pieces of legislation defining the U.S.-Sub-Saharan Africa trade relationship. **AGOA should be amended to spur private sector investment and promote African regional integration.** This includes instituting a grandfather clause to decrease the volatility of the agreement and reexamining eligibility clauses that could have negative impacts to regional value chains. The U.S. should leverage on-the-ground organizations such as Millennium Challenge Cooperation and Power Africa to accomplish energy policy objectives and consider tax incentive programs.

In the amended AGOA framework, U.S.-based technical standards should be leveraged to promote the U.S. economy. The use of technical standards offers developing countries the opportunity to institute core infrastructure, public health systems, and economic globalization. The practice of voluntary, consensus-based standards should be promoted actively to benefit U.S.-based companies.

Sub-Saharan Africa should no longer be viewed through the myopic lens of aid, but instead should be viewed increasingly as a strategic partner. The United States should leverage the newly signed African Continental Free Trade Agreement and start negotiating a U.S.-Sub-Saharan Africa free trade agreement by 2025. This includes expanding the number of products granted duty-free access, eliminating quota restrictions, and requiring gradual reciprocal duty-free treatment for American exports.



EXECUTIVE SUMMARY

The U.S.-Sub-Saharan Africa trade relationship remains severely underdeveloped. Both the United States and Sub-Saharan regions of Africa have much to gain from a well-structured trade relationship including economic development, integration of U.S.-based technical standards into the global economy, and strides towards national security and peacekeeping goals. Africa is one of the largest growing continents in the world, but 620 million people living in Sub-Saharan Africa still do not have access to reliable electricity. This poses certain challenges to business development including real financial losses, increased risk, and volatility. In addition to infrastructure concerns, the fact that the U.S. has underutilized the African Growth and Opportunities Act (AGOA) has allowed other foreign interests to edge the U.S. out of African economies. Foreign interests such as China also bring up concerns for national security, and dim the prospects of promoting democracy, free market enterprise, and human rights for the nations in Africa. This policy document offers a three-pronged solution for improving trade competitiveness with Sub-Saharan Africa which includes amending the AGOA framework to spur private investment, diversifying the Africa trading portfolio, and placing U.S.-based standards at the forefront of driving these economies.

FOREWORD

About the Author

Alex Hsain received her Bachelors of Materials Science and Engineering from North Carolina State University. A 2017 Truman Scholar and National Science Foundation (NSF) Graduate Fellow, Hsain is now pursuing her Ph.D. at NC State University. She conducts research on thin film functional materials and has a vision of converting excess energy from walking or breathing into usable electricity for portable devices. An advocate for sustainability and human development, Hsain also serves as an Advisory Board Member for SciBridge, where she assists in developing low-cost, scientific instrumentation to be shipped to universities in Uganda, Ethiopia, and Tanzania. She has conducted research at NASA Langley Research Center, the Advanced Self-Powered Systems of Integrated Sensors and Technologies (ASSIST) Center, Texas A&M University, and University of New South Wales in Sydney Australia. She is being sponsored by the American Society for Testing and Materials (ASTM) International as the Summer 2018 WISE Fellow.

About the WISE Program

The Washington Internships for Students of Engineering (WISE) Program was founded in 1980 through the collaborative efforts of several professional engineering societies with the aim of encouraging engineering students to contribute to issues at the intersection of science, technology, and public policy. The nine-week program allows fellows to spend the summer in Washington, D.C. and gain exposure to the legislative and regulatory process through meetings with leaders in the Administration, federal agencies, and advocacy groups. For more information about the WISE Program, visit www.wise-intern.org.

About ASTM International

ASTM International, formerly known as the American Society for Testing and Materials (ASTM), is a globally recognized leader in the development of voluntary, consensus-based standards. Today, over 12,000 ASTM standards are used around the globe in order to ensure high quality products, enhance safety, and facilitate international market access, while building consumer confidence.

Acknowledgements

This body of work would not have been possible without the help of many individuals and related organizations. The author would like to thank Sarah Shoemaker, Kevin Shanahan, and Travis Murdock of ASTM International. The author would like to also thank the staff at IEEE who have graciously hosted the WISE Fellows, namely Erica Wissolik, Diana Librizzi, and Russell Harrison. The author also thanks Dr. Gil Brown, the WISE 2018 Faculty Mentor in Residence (FMR) for his planning, organizing, and execution of the WISE Program.

ACRONYMS

AfDB – African Development Bank

AGOA – African Growth and Opportunity Act

ANSI – American National Standards Institute

ASME – American National Standards Institute

ASTM – American Standards for Testing Materials

EPA – Economic Partnership Agreements

FDI – Foreign Direct Investments

FTA – Free Trade Agreement

GPI – Global Procurement Initiative

GSP – Generalized System of Preference

IEC – International Electrotechnical Commission

IEEE – Institute of Electrical and Electronics Engineers

ISO – International Standards Organization

ITA – International Trade Administration

ITU – International Telecommunications Union

MCC – Millennium Challenge Cooperation

MOU – Memorandum of Understanding

NIST – National Institute of Standards and Technology

OPIC – Overseas Private Investment Cooperation

PAC-DBIA - President's Advisory Council on Doing Business in Africa

REC – Regional Economic Communities

SACU – Southern African Customs Union

SADC – Southern Africa Development Community

SDO – Standards Development Organization

TIP – Trade and Investment Partnership

USTDA – U.S. Trade and Development Agency

WTO TBT – World Trade Organization Technical Barriers to Trade

BACKGROUND AND ISSUE DEFINITION

This section defines the pertinent issues relating to the current landscape of Sub-Saharan African energy infrastructure development and international trade partners. Population growth and the need for electrification, the current trade relationship between U.S. and Sub-Saharan Africa, and foreign influences are considered in this section.

Population Growth and Electrification Needs

One of the greatest challenges to economic and human development in Sub-Saharan Africa is the lack of reliable electricity for 620 million people in the region. While the area's existing resources are plenty enough to supply its energy needs, they are unevenly distributed and underdeveloped. Africa is also naturally endowed with an abundant potential for renewable energy, which can be harnessed to provide more than 40% of power

generation from clean sources such as large hydrodams, and small grid solutions. And while it is projected that nearly one billion people in Sub-Saharan Africa will gain access to electricity by 2040, the growing population means that 530 million people will remain without electricity [1]. Brookings terms this as “energy poverty” and is believed to be the largest barrier to productivity for the region [2]. A report by the World Bank estimates that 4.9 percent of sales of African businesses are lost annually due to fluctuating electricity supply. Figure 1 illustrates the number and share of people without electricity by country in 2012.

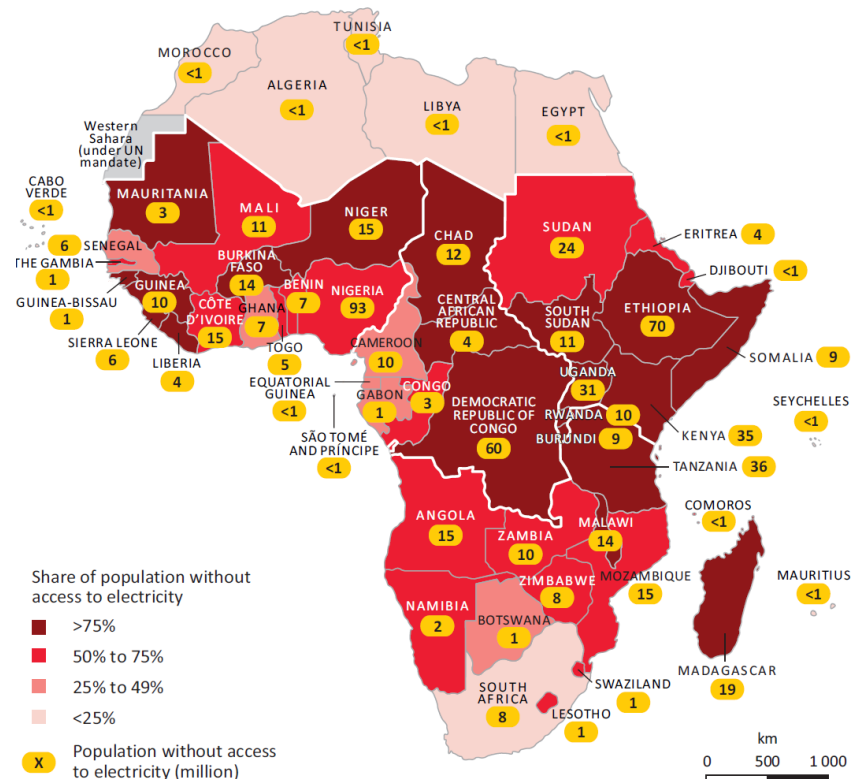


Figure 1. Number and share of people without access to electricity by country, 2012 [1]

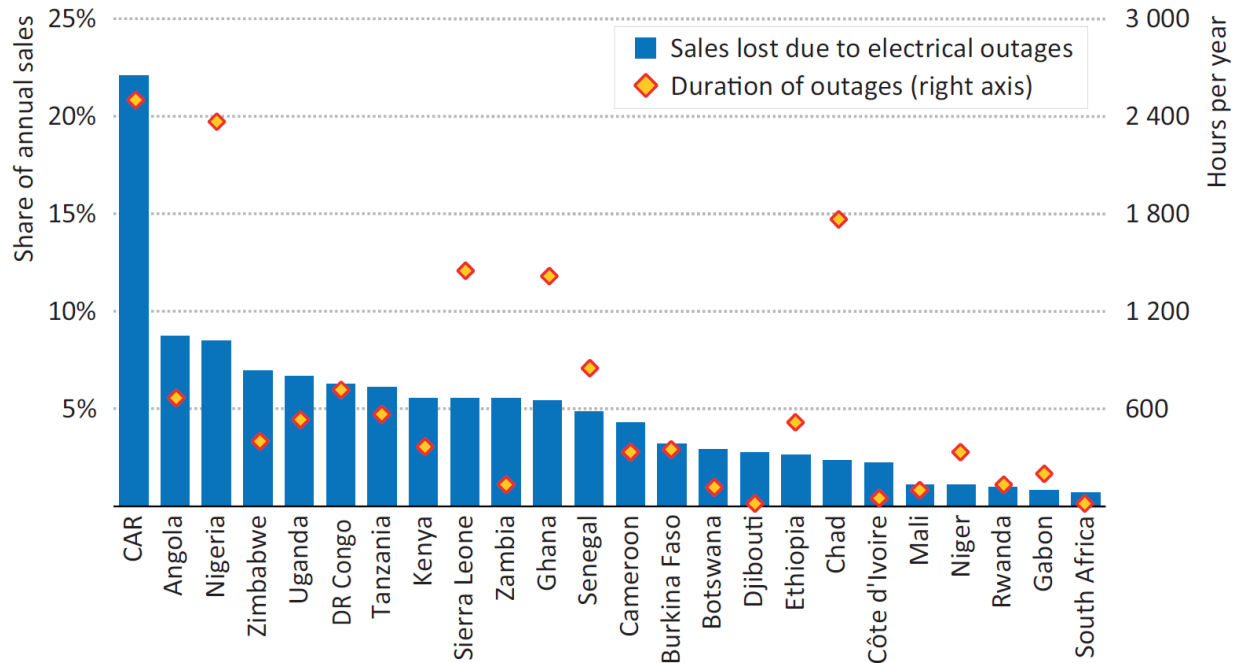


Figure 2. Share of annual sales lost due to electrical outages [1]

The shortage of electricity infrastructure undermines social and economic development. Figure 2 shows the duration of electrical outages and the impact of business sales in selected countries. The U.S. government has started to address these concerns, more recently with the Power Africa initiative which aims to leverage private sector investment to generate 30,000 MW of electricity across Sub-Saharan Africa under the Electrify Africa Act of 2015 [3]. Nilmini Rubin, senior advisor for global economic competitiveness at the U.S. House Foreign Affairs Committee, was interviewed by Brookings to find out how energy infrastructure could better help African countries utilize the African Growth and Opportunity Act (AGOA). “Solid energy infrastructure is an integral part of increasing trade and investment capacity,” asserts Rubin, who was a strong proponent for the Electrify Africa Act. However, it remains the imperative of federal agencies

to successfully implement programs that will end up increasing electricity access and capacity in Africa [2].

“Solid energy infrastructure is an integral part of increasing trade and investment capacity.”

Currently, the U.S. government is leading the Power Africa initiative, a 15-year strategy (2016-2030) aimed at achieving 30,000 MW of increased energy generation; 60 million connections through on- and off-grid expansion by 2030; and unlocking energy sector potential through reforms, capacity building, and strengthened national and regional tools [4].

Power Africa aims to accomplish this through strategically uniting African governments, the private sector, civil society organizations, and development partners. To date, Power Africa has helped support projects expected to generate nearly 4,600 MW of energy and accounts for 20 percent of the total additional capacity target projected for 2020 [4]. Just one example of private partnership is the Overseas Private Investment Cooperation (OPIC) which has mobilized more than \$3 billion dollars in private sector investment to support 12 Power Africa Projects.

One partnership of interest to the current trade discussion is that of the Department of Commerce's International Trade Administration (ITA) which plays a key role in Power Africa's trade promotion. The ITA supports exporters in electrical equipment and other energy sector supplies and establishes trade relationships through the work of the Commercial Services. The organization also uses specialized trade promotion programs such as Trade Missions, Reverse Trade Missions, and International Buyer Programs (IBPs) that match foreign buyers to U.S. companies at major energy industry shows. In 2015, the ITA's PowerGen International Buyer Program included over 200 government and private sector delegates from 10 Power Africa country partners.

Not only has the ITA forged key relationships in trade for the power sector, but the ITA has also released several market assessments designed to support electrical equipment and renewable energy exporters to Africa. These reports serve several functions in informing U.S. exporters and they signal crucial areas within Africa that have upward energy trends. Information relevant to Africa is included in the Smart

Grid report which ranks Nigeria as the fourth best market on the globe for smart grid transmission and distribution equipment. In the Renewables Energy report, Kenya is ranked as the fourth and South Africa as the 13th in overall ranking for projected export markets, with Kenya first for geothermal exports, Ghana as 25th for solar energy, and Kenya as 15th for wind energy [4, 5].

While Africa's continuing population boom makes electrification a difficult feat, the combined efforts of public and private industry through initiatives like Power Africa will lead the way to fortified trade routes in the energy sector. Additionally, as the U.S. reevaluates its energy supplies with the growth of domestic production, the trade relation with Africa will undoubtedly shift. Trade agreements and initiatives should be crafted in such a way to foresee the future shift from oil and coal-based energy to a more renewables-centric trade relationship in the coming years.

Underutilization of AGOA and U.S. Investment

The African Growth and Opportunities Act (AGOA) is a United States Trade Act, enacted in 2000 under the Bill Clinton administration. AGOA enhances market access to the US for qualifying Sub-Saharan African countries through duty-free access to 6,800 product lines. To maintain AGOA privileges, a country must meet certain qualifications such as working to improve its rule of law, bettering human rights, and respecting core labor standards. AGOA has been associated with significant success in increasing trade volume, job creation, and capacity enhancement. AGOA has also been successful in mainstreaming trade, has diversified some sectors, and has encouraged African governments to improve

the working conditions for business. However, the impacts have been uneven, with some countries and sectors benefiting significantly more than others. Most of AGOA-related trade remains in the energy sector (oil and gas) which accounts up to 90 percent of the total trade by value [6]. However, it is accepted that these products would have attracted buyers regardless of AGOA, and so the largest impacts of AGOA are seen in the non-energy sectors such as agriculture and apparel.

Another concern over AGOA is that the export profile of Sub-Saharan Africa comprises of mainly raw materials or semi-finished products with limited value added. In this way, AGOA is seen to not have significantly transformed the African economies, and that the limited value-added means that duty-free and quota-free access has been only a moderate multiplier in job creation and poverty reduction [8]. Another issue raised has been the lack of support that AGOA has provided in regional integration of Africa by engaging with the various regional economic communities (RECs). Currently, there is very little high-level engagement between U.S. officials and trade officials of the various RECs. Instead, the U.S. trade representative holds a high-level meeting with African heads of state and ministers of trade and commerce. Given the number of participants and interests, consensus is very difficult to achieve. Meetings should be held at a more regional level to increase regional integration of trade.

Perhaps the largest downfall of AGOA has been its lack of spurring direct foreign investments (FDI). AGOA has not

resulted in any large-scale and consistent investment schemes from the U.S. government to support private investments in Africa. AGOA is credited with both job creation and increasing FDI; between 2001-2007, the FDI increased by 52 percent to \$13.8 billion [9]. Nevertheless, the U.S. private sector presence in Africa remains small while other foreign interests like China increase their investments in the region to capitalize on Africa's rich natural resources [10]. While AGOA makes it profitable for U.S. businesses to enter Africa markets, they remain reluctant due to the real and perceived high costs of doing business. The largest hindrances to long-term business within the AGOA framework is the lack of predictability of the agreement, coupled with the high costs of startup of businesses, which require additional investments into infrastructure.

National Security

While engagement with Africa is often viewed as purely altruistic, Africa holds many national security imperatives to the United States. Africa is home to the largest number of fragile states, and in 2018, African countries were among 19 out of the top 25 slots in the Fund for Peace's Fragile States Index [11]. Advancing the stability of these regions and developing African partnerships is a critical component to protect nations at home and abroad. One way that transnational threats can be diminished in the long run is through promoting local economies, supporting good governance, and helping to address conflicts in African countries.

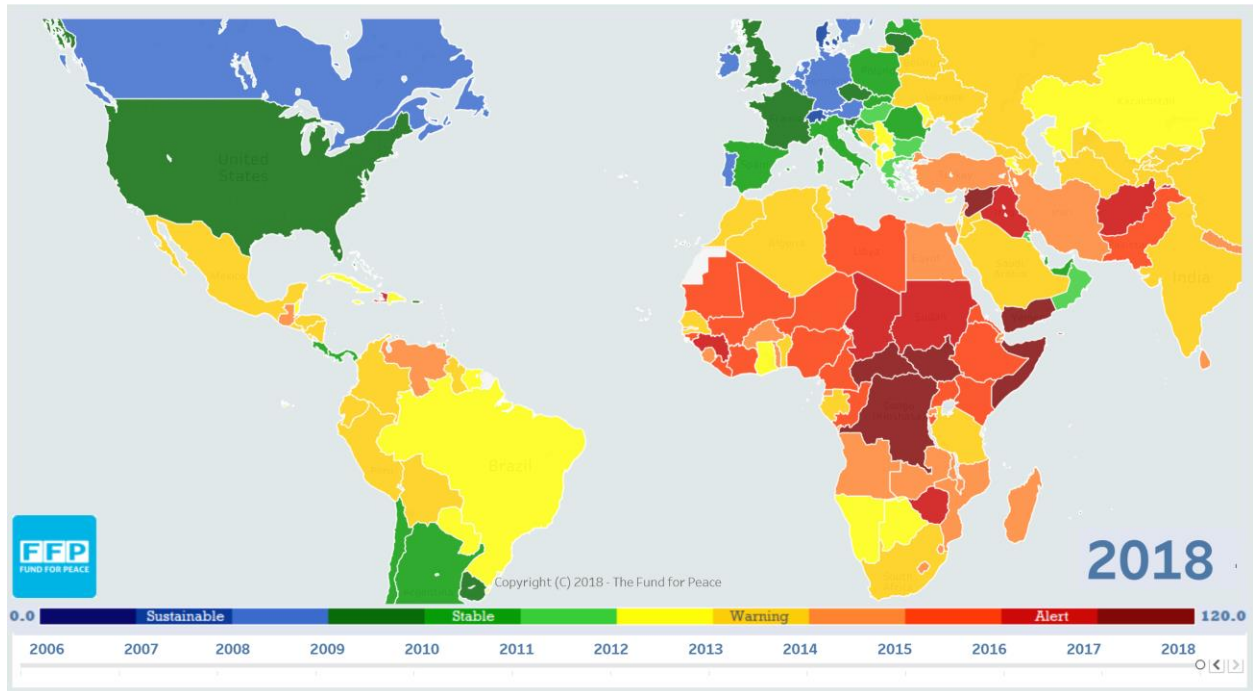


Figure 3. Fragile States Index, 2018. Red areas show countries where democracy is under alert.

Furthering stability through economic growth is imperative to African nations who have one of the world’s youngest populations at a median age of 18. Africa will need to create over 18 million jobs every year until 2035 for its youthful population [10]. The failure to create strong trade and economic ties would create a large pool of youth susceptible to crime and radicalization. A recent study on Boko Harm recruits found that the main incentive to join was financial, rather than for religious reasons. More alarming, a study found that the financial cost to recruit a jihadist in West Africa is less than \$600 [10]. This national security threat is further exacerbated by the migration crisis and environmental factors which cause migrants to flee from conflict and hardship. Combating these issues requires not just political will and partnership, but also a holistic approach to address development challenges and prevention of extremism. Aiding countries

and building partnerships is a crucial component in this task and will require a multi-pronged approach to investments in healthcare, education, infrastructure, and transportation.

While Africa currently only accounts for 3 percent of the global GDP [12], the region is becoming increasingly more vital to the global economy. Africa maintained an annual real GDP growth rate of about 4.4 percent between 2010 and 2015 [13], outpacing global growth. While this growth is uneven across the many countries in Sub-Saharan Africa and its growth deaccelerated to 1.5 percent in 2016, commodity exporters like South Africa, Kenya, Senegal, and Côte d’Ivoire are projected to see growth exceeding 6 percent in the coming year. Other countries such as China are outpacing the US in seizing these economic opportunities which will cost American growth, jobs, and security in the long term.

Competing Foreign Interests

While U.S.-Sub-Saharan African trade has seen a steady increase since AGOA, the trade relationship is still highly underutilized when compared to other countries. As one example, Africa exports 10 times more to Europe than to the U.S. [14] The EU has multiple trade agreements such as the European Union’s Economic Partnership Agreements (EPA) and Everything-But-Arms (EBA) initiatives which have a higher

utilization rate than AGOA and which have generated twice as many exports as AGOA (Figure 4). The EPAs establish long-term stable access to EU markets, and the EBA is a one-way measure to support trade and drive development in the least developed countries. The EU is Africa’s largest export market, totaling 35% of Africa’s exports for 2017, followed by Africa itself (18%), China (11%), and then the US (8%) as illustrated in Figure 5.

% of African products (tariff lines) that can be imported duty-free				
	EU	USA	China	India
Schemes for least-developed countries	100% except arms	82%	97%	94%
Schemes for developing countries (GSP)	57% (+reduced rates for most other products)	68%	No schemes	
Other unilateral schemes: GSP+ (EU), African Growth and Opportunity Act (USA)	89%	84%		
Bilateral agreements (EPA/FTA)	100% except arms + few exceptions for South Africa & North African countries	Almost no agreements in place (only US-Morocco)		

Figure 4. Percent of African products that can be imported duty-free, 2017 [14]

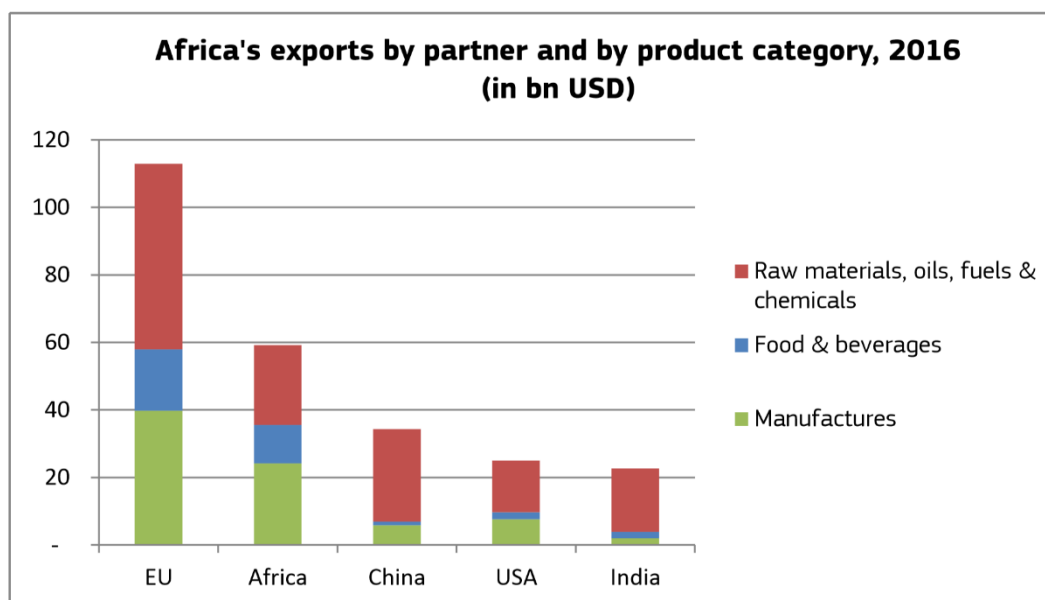


Figure 5. Africa’s export by partner and by product category, 2016 [14]

While the EU has historically been one of Africa's main trading partners, China has deepened its influence in recent years, surpassing the US since 2009. China has become a significant source of foreign investment in Africa and has offered development loans to resource-rich nations such as Angola, has made investments in agriculture, and has initiated special trade partnerships in Ethiopia, Nigeria, and Zambia. China has historically prioritized strong diplomatic relations with African countries due to their ideological aspirations on "solidarity among Third World countries [10]." However, recent shifts in political discourse show that China is no longer in Africa solely based on altruistic intentions. Guided by the principles of "mutual benefits" Beijing has poured vast financial resources into infrastructure projects in order to extract natural resources in return. Moreover, these investments generate large benefits to Chinese service companies including contracts, relocation of labor from heavily-polluted areas in China, and political favors from African governments in foreign policy issues at multilateral forums such as the United Nations [10].

Between the years 2000 and 2014, China has loaned over \$86 billion to Africa in the form of banks, contractors, and government loans [15]. This money has gone to various infrastructure projects such as energy, mining, telecommunication, transportation systems, airports, and hospitals. These types of investments are in line with China's "going out" global strategy which hopes to fit Africa into the developmental framework of *One Belt, One Road*. Chinese president Xi Jinping hopes to join a

continental economic belt and a maritime road to promote cooperation and interconnectivity from Eurasia to Africa.

While a survey in 2016 shows that 63 percent of African's view China's economic and political influence as positive, the Chinese-African partnership has not been without controversy [15]. Issues such as poor compliance with safety, environmental standards, and unfair business practices have been raised. Some leaders also feel that China is exploiting resources in Africa. In 2013, Sanusi Lamido Sanusi, the then-governor of Nigeria's Central Bank wrote, "we must see China for what it is: a competitor," adding that like the U.S., Russia, Britain, and the rest of the world is not in Africa for African interests, but its own [16].

Africans have fought back against unfair labor practices including disputes over wage and working conditions. Zambia has experienced civil strife in response to a growing number of Chinese companies and in 2012, witnessed protests and murders of Chinese mine managers. Governance systems in African countries are often ill-prepared or too weak to protect against labor exploitation and environmental damage. In addition, many African countries attach low priority to environmental protection as shown by their understaffed environmental bureaucracies and lack of records for countering corruption [17].

China has long operated on a stance of noninterference policy with African nations. While diplomatic relationships between Beijing and African countries has a history dating back to early post-colonial, Beijing has recalibrated its approach to Africa to foster an economic

relationship using a noninterference policy and a respect for sovereignty. However, the way that these policies translate is not necessarily beneficial to African nations. China enjoys the financial and political freedom in promoting Africa's development but does not promote good governance, fairness to workers, or the sustainability of

development. China's role in Africa is consequential to the U.S. in ways that increasingly isolate the U.S. politically and economically from Africa. The U.S. must develop strategies to counter the negative consequences of China's influence to promote democratic ideals and good governance in Africa.

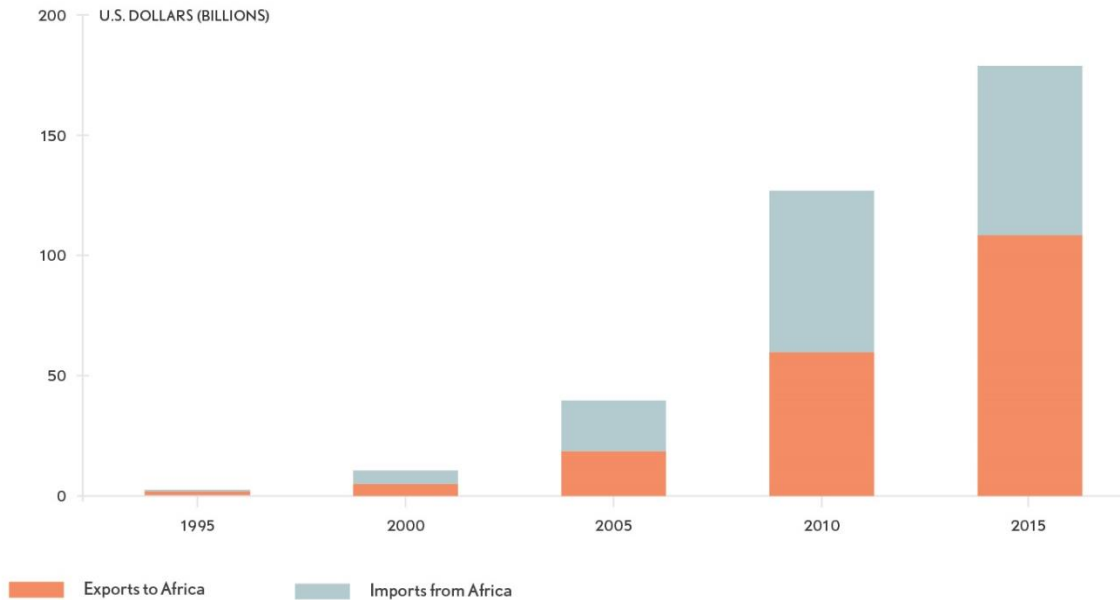


Figure 6. China's trade with Africa, from 1995 to 2015 [16]

KEY CONFLICTS AND CHALLENGES

This section explores the key conflicts and challenges associated with improving U.S. trade relationships with Sub-Saharan Africa. Current trade relationships as they stand are investigated, as well as current issues associated with the WTO's Technical Barriers to Trade (TBT) Agreement. Joint government-private enterprise such as Power Africa, Trade Africa, and the Millennium Challenge Cooperation are also introduced as potential partners in solving these key challenges.

Current U.S.-Sub-Saharan Africa Trade Relations

Sub-Saharan Africa is one of the fastest growing regions in the world, with an average GDP growth of 5.2 percent, consistently outpacing the rest of the world (Figure 7) [18]. While growth has slowed recently, it will continue to increase 3.2 percent in 2018, and 3.5 percent in 2019 according to the World Bank [19]. The past

decade has seen the largest increase in value of U.S. exports to Sub-Saharan Africa; up to a 300 percent increase since 2000, or an 11.3 percent increase annually as seen in Figure 8. At the same time however, the United States trade relationship with Sub-Saharan Africa remains greatly underdeveloped. Currently, only 1.5 percent of the U.S. exports are to Sub-Saharan Africa, while economic growth in Africa has increased 5.4 percent from 2004 to 2014 [2].

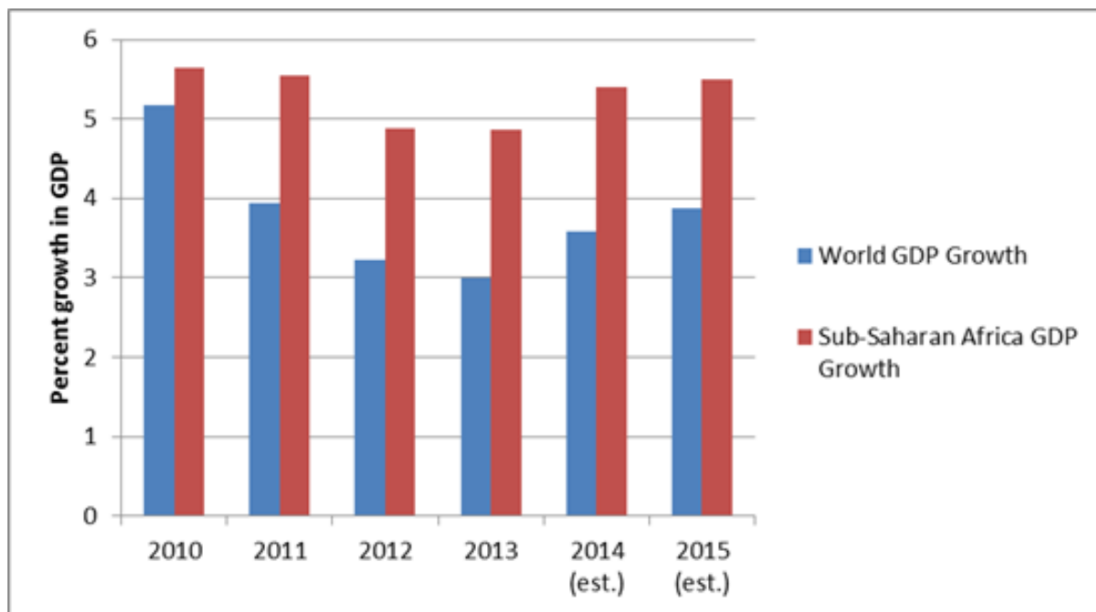


Figure 7. Percent growth in GDP of World and Africa, [22]

For the U.N. to achieve its Sustainable Development Goals, the United States must support the economic development of Sub-Saharan Africa where 40 percent of people are still living in poverty. Currently, the major act of legislation that underpins the U.S.-Sub-Saharan African trade relationship is the African Growth and Opportunity Act (AGOA). AGOA provides preferential access to Sub-Saharan African goods to the U.S. market by duty-free allowance. Before the authorization of AGOA in 2001, this

preferential access was still active through the Generalized System of Preference (GSP), a program that applies to exports from various developing countries. While the GSP expired in 2013, AGOA has been re-authorized until 2025 and includes GSP-approved goods, totaling to 6,800 product lines from 38 countries in Sub-Saharan Africa [6].

In 2017, eleven AGOA beneficiary countries each exported more than \$100 million worth of goods under AGOA/GSP

legislation. Seven other countries exported more than \$10 million in AGOA products in that year. Petroleum products continue to account for the largest portion of AGOA imports with a 66 percent share of overall AGOA imports [6]. This number has decreased from 86 percent in 2013, as oil prices continue to drop with the increase in domestic oil production [20]. Primary metals and transportation equipment such as motor vehicles are some of the largest export sectors, followed by apparel which is the most diversified sector in terms of the number of beneficiary countries. The leading export aggregates are listed in Figure 8 which shows the year to date exports for 2017-18. From Figure 9, we see that Nigeria (\$13.8 billion; mainly crude oil), South Africa (\$6.6 billion; mainly vehicles and parts, iron/steel, and fruits and nuts), Chad (\$3.06 billion; mainly crude oil), and Angola (\$1.61; mainly crude oil) are the main AGOA exporters to date.

A survey conducted by the U.S. Census Bureau found that African businesses view AGOA as very important for their trade with the U.S. AGOA supports local businesses and economies by including them into the global economy [21]. Not only does AGOA help small businesses abroad, but also small- and medium-sized businesses in the United States, which accounted for 92% of the U.S. exports to Sub-Saharan Africa in

2012 [22]. Not only is AGOA an important tool in achieving greater access to U.S.-Sub-Saharan Africa trade, but it also aids in goals to promote market reform and good governance. For a country to be eligible to receive AGOA's preferences, they must comply with the following: progress towards market-based economy, lesser corruption, and strengthened rule of law; the country must not be engaging in activities that undermine the U.S. national security; and the country must not be engaging in human rights violations. Democracy has been on the rise in Sub-Saharan Africa; a Freedom House report shows that the region has shown the largest gains in freedom over the last five years [23].

In order to strengthen U.S.-Sub-Saharan Africa trade relations, the United States will need to prioritize the development of non-oil exports in Africa. Since 2011, exports of crude oil have been decreasing due to the United States' increased domestic production. Given this trend, the U.S. will need to refocus efforts to expand non-oil imports to avoid deterioration in the overall U.S.-Sub-Saharan Africa economic relationship.

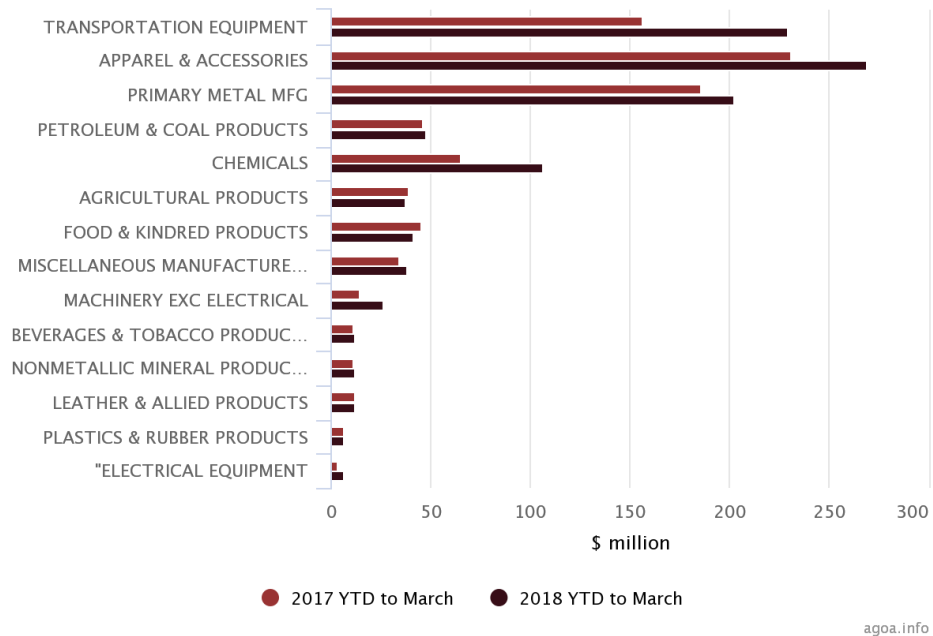


Figure 8. Leading non-oil sector exports under AGOA, year to date 2018

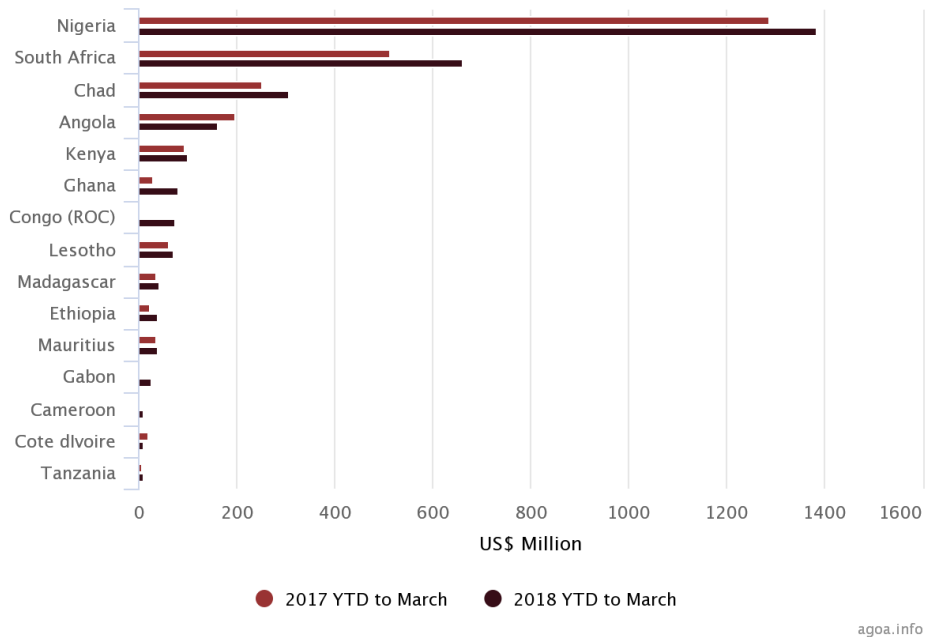


Figure 9. Leading AGOA exporters, year to date, 2018

Technical Standards and Trade

The use of technical standards offers competitive benefits for the development of a nation's core infrastructure, public health systems, and economic globalization. By themselves, standards are documented consensus containing information about how a product should be manufactured, tested, and used in compliance within certain guidelines. In many cases, standards provide uniformity which allows worldwide acceptance of a product, material, or service. Standards can also help remove technical barriers to trade, lead to new market developments, and assure quality products for a variety of industry sectors (Figure 10). According to the National Institute of Standards and Technology (NIST), about 80 percent of global merchandise trade is affected by standards and this influences an estimated \$200 billion in transatlantic trade between the U.S.-European economies alone [24].

In the United States, standards are developed through a complex interplay between the private sector, industry, academia, consumers, and the government. This decentralized system is partitioned into individual sectors and are supported by independent standards developing organizations (SDOs). A unique advantage in the United States is that standards development is demand-driven, meaning that standards are developed in response to specific concerns and needs expressed by industry, government, and consumers. The voluntary institution of U.S. standardization

is firmly rooted in American history and experience, reflecting a national belief that society will flourish in a system free from centralized government control, but strengthened through essential government participation. The American National Standards Institute (ANSI) is responsible for bringing together diverse private and public-sector interests and accrediting standards development organizations, some of them including the American Society of Mechanical Engineers (ASME), the American Standards for Testing Materials (ASTM), or the Institute of Electrical and Electronics Engineers (IEEE).

It can be challenging for the standards community to keep pace with the competitiveness of the global economy. While standards are meant to promote market efficiency, foster international trade, diffuse new technology, and lower barriers to market entry, this is not always the result. In some circumstances, companies and nations can use standards to disadvantage competitors. This can come in the form of national regulations which require excessive testing and redesign of products, thereby adding cost and impeding export access. A 1999 survey by the National Association of Manufacturers reported that U.S. small business manufacturers find international standards or product certifications to be barriers to trade. The Transatlantic Business Dialogue suggests that differing requirements contribute more than 10% to the cost of car design and development [24].

Technical Standards

Define requirements for products, processes and services

Technical standards mean

- Products and services are safe and reliable
- Improved market access
- Better relations with suppliers
- Increased competitiveness
- Increased trade
- Protection of the environment

Figure 10. World Trade Organization’s definition on technical standards [25]

These effects can be exacerbated for developing countries who often lack the institutional capacity to comply with technical regulations and standards set by their trading partners. The World Trade Organization (WTO) has recognized these disadvantages and has instituted the WTO Agreement on Technical Barriers to Trade which aims to ensure that technical regulations, standards, and conformity assessment procedures are non-discriminatory and do not create unnecessary obstacles to trade [26]. The EU has initiatives to better implement the TBT with their developing country partners, specifically in capacity building and reducing the difficulties arising from conformity assessment procedures. The use of accredited conformity assessment is meant to reduce the difficulty, cost, and time resultant of these procedures. The EU accomplishes this through their Mutual Recognition Agreements (MRAs) and Agreements on Conformity Assessment and

Acceptance of Industrial Products (ACAAs) program, where one country accepts the results of conformity assessment tests performed by another country [25].

In order to comply with the WTO TBT, the EU also has several initiatives to achieve transparency with its partners such as the TBT Entry Point which includes a list of contact information to EU members’ conformity assessment specialists. The European Commission has an interactive tool on their website which allows users to track drafted technical regulations and receive notifications from other member bodies. The United States has a similar tool called Notify U.S. which allows U.S. entities the opportunity to review and comment on proposed foreign technical regulations and conformity assessment procedures that can affect their businesses.

While these tools are helpful to businesses and trade specialists in theory, they require the crucial initiative of foreign

entities to submit their proposed amendment to a technical standard. WTO internal sources suggest that the number of TBT measures has been on the rise since the

1990s (Figure 10) as well as the number of specific trade concerns being raised by WTO members in the Technical Barriers to Trade Committee.

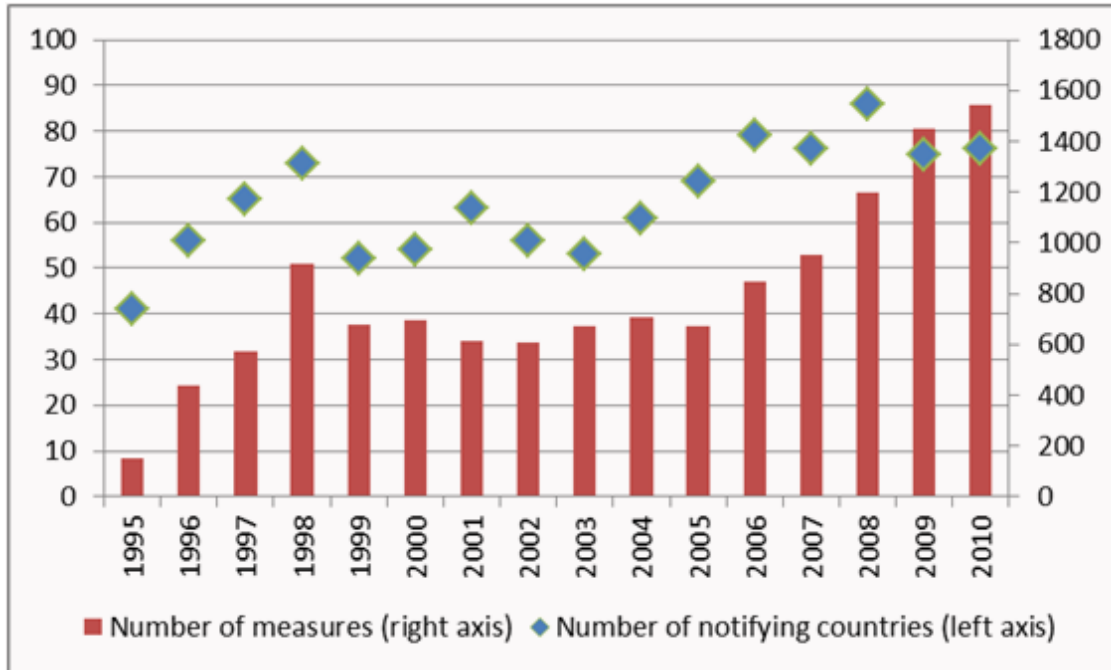


Figure 11. Number of regulatory barriers and notifying countries, 1995-2010 [27]

From this information, it is evident that non-tariff measures are being used to restrict trade access and accomplish policy objectives. However, while in theory TBT is sound policy and its enumerated goals are well-reasoned, it can be hard to achieve. Firstly, achieving transparency is difficult to enforce, complicating the cooperation on non-tariff measures to trade. Another issue is that contrary to tariffs, non-tariff measures increase fixed costs and deter market entry, making it difficult for governments to cooperate on strategic competitive effects of non-tariff measures. In addition to these challenges, technical barriers can create fragmentation of supply chains and produce cross-border spill offs. While the TBT attempts to reduce technical barriers, the enforcement of this policy

remains weakly integrated. Deep, rather than shallow integration seems to be required for the proliferation of global supply chains.

Another issue may be finding a balance between policy commitments and flexibility within multilateral trading systems. TBT emphasizes the potential benefits of a non-violation provision, and the legal framework relies on clear infringement on the General Agreement of Tariffs and Trade (GATT). The transparency provisions in TBT are not sufficient to ensure that members will comply. This is because while TBT claims that transparency benefits all members, it is not necessarily always true. WTO notifications should play a substantial role in regulating technical barriers, but this

can only be accomplished by amending the current incentive program for reporting.

Another key challenge associated with TBT is the distinction between protectionist and non-protectionist technical standards. Under GATT, it is customary to use domestic regulatory practices, given that they do not discriminate against imported products. However, there can often be a fine line and

subjective matter to determine if a standard is prescriptive rather than descriptive. While the convergence of international standards is highly promoted in the WTO TBT, they can cause tensions between members. Preference varies among the WTO members as to which standards to practice, as well as access to capacity building varies among the standards community and their partner countries.

Energy Demand in Sub-Saharan Africa

The energy needs in Sub-Saharan Africa remain dire. The energy hurdles include 620 million people without electricity, decaying infrastructure, environmentally and health hazardous cookstoves, and a reliance on biomass which impacts human health and deforestation. While Africa is naturally plentiful in natural resources such as oil, gas, coal, sun, and wind, the energy resources are not equitably distributed among the African nations. The high share of rural populations coupled with the low ability and willingness to pay for energy resources has pushed these rural communities to be highly dependent on locally available resources from agricultural residues and savanna wood for daily cooking and heating [1]. To put Africa's dismal energy use in perspective, consider the fact that New York state uses the same amount of electricity (40 terawatt hours) as all Sub-Saharan Africa, despite only housing 19.5 million, compared to the 791 million in Africa [27].

While the current energy portfolio is highly dependent on biomass, Sub-Saharan Africa is rich in renewable energy resources. According to the International Renewable

Energy Agency (IREA), the installation costs for power generated by utility-scale solar PV has decreased as much as 61 percent since 2012 to as low as 1.30 USD per watt in Africa, compared to the global average of 1.80 USD per watt [29]. There has also been an increased utilization of mini-grid solar PV and off-grid solar home systems. Since many of the unelectrified regions of Sub-Saharan Africa are rural with low household energy density, the decentralized nature of renewable technologies makes them an economically competitive alternative to massive grid infrastructure.

The Photovoltaic Geographical Information System (PVGIS) has developed a map-based inventory of solar energy resources and an assessment of the electricity generation from photovoltaic systems in Europe, Africa, and Southwest Asia. The map in Figure 12 shows the yearly average of daily total irradiation on a horizontal and/or optimally inclined surface (i.e. solar cell). The data is derived by a resolution enhancement of the HelioClim-1 database, averaging solar data from a 20-year span 1985-2004 [kWh/m²]. The darker red regions show areas of higher solar

concentration, with some areas able to produce twice as much electricity when compared to Central Europe on average [30]. Spurred by public sector initiative, many government-private partnerships have taken an interest in harnessing Sub-Saharan

Africa's energy potential. The programs most relevant to the current discussion is Power Africa, Trade Africa, President's Advisory Council on Doing Business in Africa, and Millennium Challenge Cooperation.

Photovoltaic Solar Electricity Potential in the Mediterranean Basin, Africa, and Southwest Asia

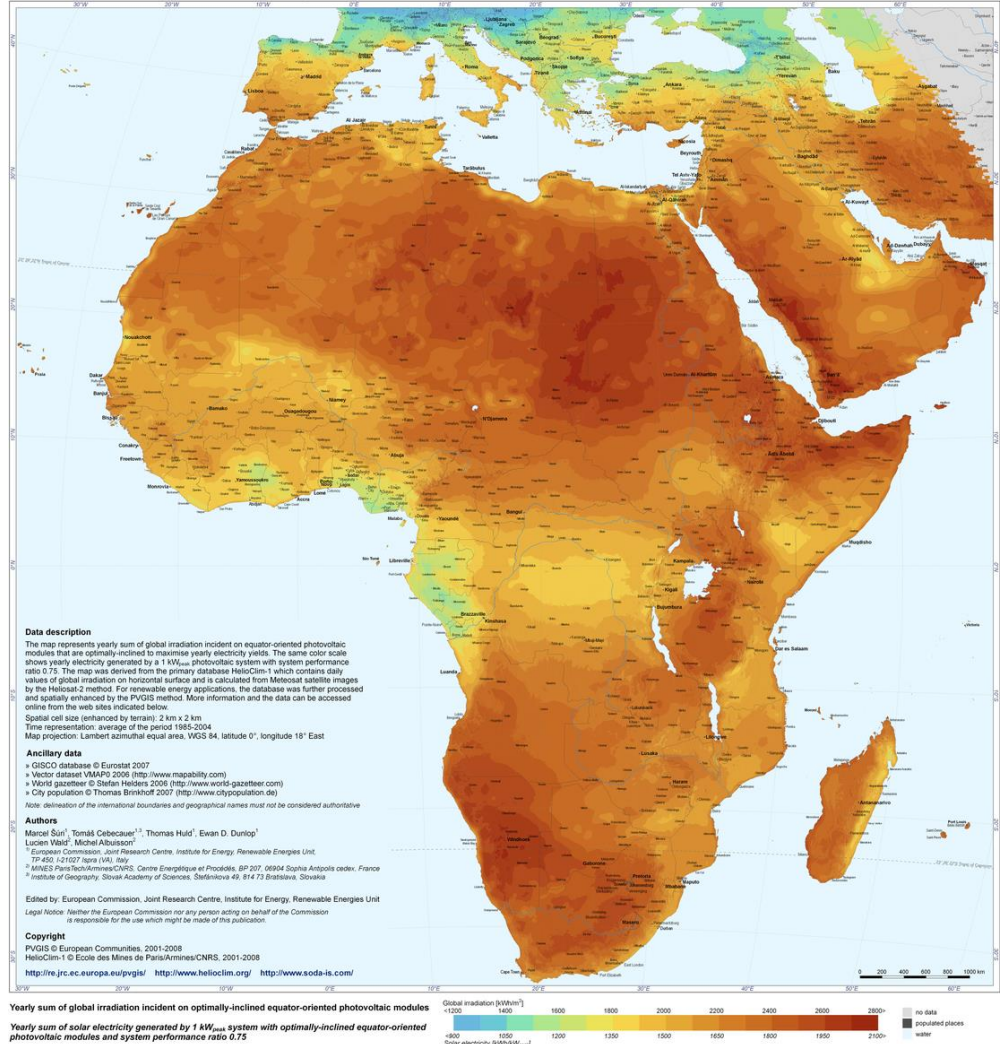


Figure 12. Photovoltaic Solar Electricity Potential in Mediterranean Basin, Africa, and Southwest Asia

POWER AFRICA

Power Africa is a U.S. government-led partnership coordinated by the U.S. Agency for International Development Program (USAID). The aim of the program is to bring together the technical capacities, resources, and programs of 12 U.S.

Government Departments and Agencies and 16 international development partners to drive the Electrify Africa Act of 2015 [4]. The public-private partnership aims to act as a catalyst for market-driven solutions and to foster private investments in Africa. To date, Power Africa and its partners have assisted 84 power projects comprising more than

7,300 megawatts with a total investment of \$14 billion USD. Power Africa has added 10.6 million connections to off-grid, micro-grid, and central grid solutions.

In a recent statement by Administrator of USAID Mark Green, he discusses the changes made to Power Africa 2.0 with a focus in increasing distribution and transmission [31]. Green also stressed the importance of creating an environment that allows private enterprise to flourish. Andrew Herscowitz explains that this new change in direction has been spurred by challenges that some countries have faced in maintaining power such as in Nigeria, where repeated breakdowns in distribution caused major power challenges. Power Africa has helped put four distribution companies in Nigeria and generate revenue of over \$80 million which they invested back into their systems to increase access to electricity.

TRADE AFRICA

Trade Africa is an initiative of the United States Government first announced in July 2013 which aims to strengthen U.S. relationships with Africa by significantly expanding U.S.-African private partnerships and inter-Africa trade. In 2013, the Trade Africa countries included Burundi, Kenya, Rwanda, Tanzania, and Uganda. In 2015, Trade Africa was expanded to include Côte d'Ivoire, Ghana, Mozambique, Senegal, and Zambia [32]. In the initial phase of the plan, Trade Africa wanted to increase exports from members of the East African Community (EAC) by 40% and reduce the time needed to import and export by 15%. Under Trade Africa, the U.S. also wants to eventually expand collaboration with other regional communities.

Trade Africa also wanted to specifically build upon the U.S.-EAC Trade and Investment

Partnership (TIP) program first announced in 2012. Specifically, their goal is to negotiate and sign a Trade Facilitation Agreement which will improve the efficiency of regional trade networks [33]. In addition, Trade Africa wants to also work to better implement the WTO Agreement on Sanitary and Phytosanitary Measures and the Technical Barriers to Trade Agreement (TBT) [34].

PRESIDENT'S ADVISORY COUNCIL ON DOING BUSINESS IN AFRICA

The Advisory Council advises the President, through the Secretary of Commerce, on ways to strengthen commercial engagement between the United States and Africa. In April 2018, the PAC-DBIA held a meeting with Secretary Ross to deliberate on recommendations to the President on how best to strengthen commercial ties with Ethiopia, Kenya, Côte d'Ivoire, and Ghana. The report is prepared under the leadership of US Secretary of Commerce Wilbur Ross. The past report included recommendations to increase the number of government-to-government memorandum of understanding (MOU), U.S. Trade and Development Agency (USTDA) Global Procurement Initiatives (GPI), and bilateral trade agreements [35]. Increasing usage of the GPI was a recommendation for all countries included in the report and is perhaps due to its goal of promoting value-based procurement as a tool for economic growth.

On July 2nd, 2018, the USTDA signed an MOU with the African Development Bank (AfDB) agreeing to partner under the GPI program. This signing signifies the commitment of the AfDB to best practices in public procurement and capacity building throughout Africa. The MOU will be followed by workshops, training initiatives, and

international forums aimed at helping African nations work together to build procurement practices that integrate life-cycle cost analysis and best-value determination in a transparent and fair manner [36]. This MOU also signifies that the suggestions made by the President's Advisory Council are of vital influence to enacting positive changes in the trade relationships in Africa and will be a key feature in influencing future policy changes.

MILLENNIUM CHALLENGE COOPERATION

The Millennium Challenge Cooperation is an independent U.S. foreign aid agency which was enacted in January 2004 by U.S. Congress. MCC focuses on how to deliver smart U.S. foreign investment assistance. They form partnerships with developing countries that are committed to

democratic governance and inclusive economic growth. MCC focuses on solutions led by developing countries to help them refine their own programs through the consultation with civil societies and the private sector [37]. Recently, the MCC joined the President's Advisory Council on Doing Business in Africa on a trip to Côte d'Ivoire and Ghana. The Council leveraged the insights from MCC about the challenges faced by U.S. businesses in market access to Africa. The MCC is working to expand regional integration in Africa, and to leverage MCC investments to increase trade capacity under the AGOA preferences. President Donald J. Trump signed into law the AGOA and MCA Modernization Act (H.R. 3445) on April 23rd, 2018 [38]. This allows MCC to invest regionally and be designated the de facto entity for strategic utilization of AGOA.

POLICY RECOMMENDATIONS

This section analyzes and recommends future steps that policymakers can take to strengthen the competitiveness of U.S. trade with Sub-Saharan Africa. A three-pronged approach is offered here, which combined, is argued to have the greatest potential for impact. In addition to these suggestions, practices to best implement these policies are also considered.

Amendments to the AGOA Framework

The African Growth and Opportunity Act remains one of the most important pieces of legislation in defining the trade and economic partnership between the United States and Africa. Since its inception in May 2000, AGOA has succeeded in economic growth, reduction in poverty reduction, and increased number of jobs [2]. Nevertheless, AGOA remains highly underutilized and has fallen below its expectations due to inherent flaws in its systematic framework.

Perhaps the largest failure of AGOA is the lack of creating a discernable economic transformation on the African continent. The lack of transformation in African countries can be seen in the example of apparel. Many of the components of these products are assembled in other countries, with value added from African countries constituting only between 10 and 20 percent [7]. Expounding this reality is the fact that AGOA has failed to stimulate U.S. investment in Africa as other countries, namely China, Brazil, and India have made significant investments in Africa. The following are

policy suggestions aimed at stimulating U.S. investment and promoting regional trade integration in Sub-Saharan Africa.

PROMOTING PRIVATE SECTOR INVESTMENT

Many U.S. investors feel reluctant to enter African markets due to real and perceived costs. These costs are the result of large startup requirements, owing to the fact of Sub-Saharan Africa's underdeveloped manufacturing capabilities. To decrease these risks for U.S. investors, the U.S. government should continue to support the Millennium Challenge Cooperation which has committed more than \$4 billion in trade-related assistance to AGOA to support infrastructure projects. In February 2018, the Trump Administration issued its fiscal year 2019 budget request, which included a \$800 million for the MCC, a cut of \$105 million (-11.6%) [39]. **Congress should restore the MCC's \$900 million budget to support regional infrastructure expansion associated with the newly signed AGOA and MCA Modernization Act.** This Act, signed in April of 2018, gives MCC the authority to make regional investments which is critical for promoting regional value-chain growth. Restoring the MCC budget to FY2017-level will help accomplish the goals of the Modernization Act, namely the creation of a project database and interlinked regional compacts [40].

In addition, AGOA should be revised to decrease its volatility and create a predictable environment for U.S. investors. **A grandfather clause should be introduced that would allow companies to continue benefiting from AGOA on contracts that are negotiated before its sunset in 2025.** Historically these types of clauses have been implemented on other trade agreements

such as the General Agreement on Tariffs and Trade, as well as the North American Free Trade Agreement [7]. A more aggressive policy approach would be to codify and reauthorize AGOA indefinitely. This would allow U.S. investors to mitigate the risks associated with developing a business based on trade preferences with AGOA, thus allowing the prospect for long-term investment projects. This would strengthen ties with Africa, as African governments and businesses witness the commitment from the U.S. accompanied with the indefinite reauthorization of AGOA.

Reauthorization of AGOA in 2016 was met with bipartisan support, so the permanent reauthorization is not predicted to generate much strife in Congress. However, the authorization committee might be disinclined to relinquish their powers of oversight for AGOA. To combat this lack of oversight, **I recommend that AGOA be permanently reauthorized, but combined with the Modernization Act and subject to yearly appropriations.**

In addition to creating a more predictable environment for private companies, I recommend that tax incentives should be considered to balance the trade deficit. Currently, the U.S. is investing \$22 billion dollars in Sub-Saharan Africa through AGOA preferences, which is estimated to create 120,000 American jobs [41]. **By balancing the \$4 billion USD trade deficit through a tax incentive program, the U.S. has the potential for creating 20,000 new American jobs.** AGOA has done little to advance the interests of U.S. companies as a non-reciprocal preference program, and so tax incentives will provide stimulus for the U.S. to enter Africa's growing competitive market. In a report by the Commission on Capital Flows to Africa, it is estimated that

the cost of a zero tax on repatriated income from African sectors would cost \$70 million a year. At the same time, there would be an African boost for GDP on a ratio of 5 to 1; for every dollar loss for the U.S. Treasury, there would be \$5 of additional income in Africa [42]. African economies would not be the only ones to benefit, but U.S. companies would also reap the return on their tax-incentivized investments.

REGIONAL INTEGRATION

Paramount to the success of AGOA, regional trade integration is perhaps the most important component in ensuring long sustaining trade partnership between the U.S. and Africa. Africa consists of 53 individual countries each with its specific border and restrictions to the movement of people and goods. Another vital component of Africa's geography is that 40 percent of Africa's population lives in countries without access to the sea, making it an extremely landlocked continent. These factors combined means that the continent will have to work together to ensure sustainable economic growth of its people and prioritize trade integration.

One example of properly enacted trade integration under AGOA is Madagascar's garment industry which has increased from \$53 million in 1992 to \$469 million in 2004 [43]. Within this sector, the supply chain has integrated many regions of Africa, sourcing zippers from Swaziland, denim from Lesotho, and cotton yarn from Zambia and South Africa. However, when Madagascar's eligibility was revoked under AGOA stipulations, the entire supply chain was disrupted as a result. The current eligibility procedures under AGOA thereby discourage the development of regional supply chains.

The U.S. and RECs bodies should work to revise AGOA in such a way that helps regional partners recover from revoked eligibility partners in such a way that does not dismantle the regional chain. One proposed option is to **allow non-compliant countries to continue to provide exports to their regional partners, but not export directly to the United States.** Another option would be to impose quotas on countries that break their eligibility but not completely revoke all their AGOA privileges. However, these efforts to revise the eligibility criteria under AGOA should be done in such a way that does not allow AGOA countries to easily circumvent requirements under the act, and thereby undermine U.S. standards for free market, human rights, and sustainable development.

Negotiating Trade Privileges through U.S. Standards

Technical standards protect economies from unscrupulous business practices, ensure consumer safety and environmental protection, and sometimes push the boundaries of technical frontiers. As discussed previously in this report, there can also arise technical barriers to trade when dealing with international parties and their multitude of standards. The World Health Organization (WTO) issued the Technical Barriers to Trade (TBT) Agreement to negate some of the impacts that technical regulations, standards, and conformity assessments might have on trade, namely, using technical barriers for discriminatory practices. While the WTO TBT is in practice a sound policy framework, it remains difficult to enforce compliance and reporting practices. In addition, the WTO TBT Agreement specifically names only three national standards issuing bodies – the

International Standardization Organization (ISO), the International Electrotechnical Commission (IEC) and the International Telecommunication Union (ITU) – leaving out other U.S.-based standards bodies. This is harmful because the language creates preferential treatment towards countries that readily or exclusively use the named standards, thereby excluding other international standards organization representing a multitude of countries and industries.

The United States standards community has always held a viewpoint of a multi-path approach to technical standards. Standards should be set by industries that are influenced by best practices, market-driven approaches, and consumer health. However, U.S. interests should also be considered in TBT discussions and when enacting preferential trade negotiations such as AGOA. The EU and China have been aggressive in dominating Sub-Saharan African economies in the past decade and have in the process promoted EU-based technical standards. Currently, African businesses can sometimes be disadvantaged to export to the U.S. due to the perceived lack of U.S.-based international standards organizations. While educating countries and partners is a vital step to opening U.S. markets to Africa, a more aggressive approach should be taken.

The United States should add stipulations in the amended AGOA

framework that requires African bodies to use some designated number of U.S.-based standard when conducting trade. In return, the United States will provide capacity-building support to help African businesses to meet technical requirements.

Many countries have Memorandum of Understandings (MOUs) signed with multiple standards organizations such as ASTM International, and so these standards come at little to no cost to the countries to adopt. The U.S. should leverage the domestic standards community to create a pathway for capacity building by investing in these programs in return for a preferential trading program. It has never been a more opportune time to revisit AGOA and our trade relationship with Africa, as the African Continental Free Trade Agreement (CFTA) is now being signed and ratified. At Brookings, after being asked what the U.S. could contribute to AfCFTA, Deputy Chairperson of the African Union Commission H.E. Quartey Thomas Kwesi stated that “Africa needs capacity building [44].”

The U.S. Trade and Development Agency should work with U.S. standards organization to develop capacity building programs and leverage existing initiatives such as Trade Africa and Power Africa. A portion of the funding from these programs should be dedicated to promoting U.S.-based technical standards, and helping businesses establish accreditation in their own regulatory framework.

Negotiation of Free Trade Agreements

Regional integration in Sub-Saharan Africa has come a long way since 1910 with the inception of the Southern African Customs Union (SACU). Intra-regional trade agreements have become more prominent in recent years since the 2008 implementation of the Southern Africa Development Community (SADC) Free Trade Agreement (FTA). However, regional economic communities (RECs) may have multiple overlaps where African countries belong to multiple RECs. This tends to limit the efficiency, and thereby causes RECs to underperform on their promises of integration and compliance by member states.

The newest effort in regional integration occurred in March 2018 when 44 African leaders met in Kigali, Rwanda to sign the framework for the African Continental Free Trade Area (AfCFTA). After eight years of negotiations, this agreement will allow a single continental market for goods and services as well as a customs union with free movement of capital and business travelers. The U.N. Economic Commission on Africa estimates that this agreement will bolster intra-African trade up by 52.3 percent and will be doubled by removal of non-tariff barriers [43].

The question remains: how should the U.S. react to the new AfCFTA? With the promise of removing tariffs on 90 percent of goods across the continent, the agreement provides impetus for stronger regional integration and opportunity for the United States to tap into regional value-chain markets. **The United States should take advantage of AfCFTA by expanding the number of products granted duty-free access, eliminating quota restrictions, and requiring gradual reciprocal duty-free treatment for American exports with the goal of negotiating a free trade agreement by 2025.**

While the expansion of two-way trade has significantly expanded since AGOA's inception on 2000, substantial benefits remain unrealized which is due to AGOA being mainly a one-sided trade preference arrangement rather than a bilateral agreement. One of the reasons is that AGOA retains tariffs and quotas on several key products. According to a study conducted by Brookings, if the U.S. granted duty-free and quota-free treatment to all imports from AGOA-eligible countries, exports from those countries would increase by \$105 million and U.S. production of those goods would only fall by \$9.6 million [46]. Negotiating a free trade agreement would open U.S. and African markets to better utilize one another's strengths.

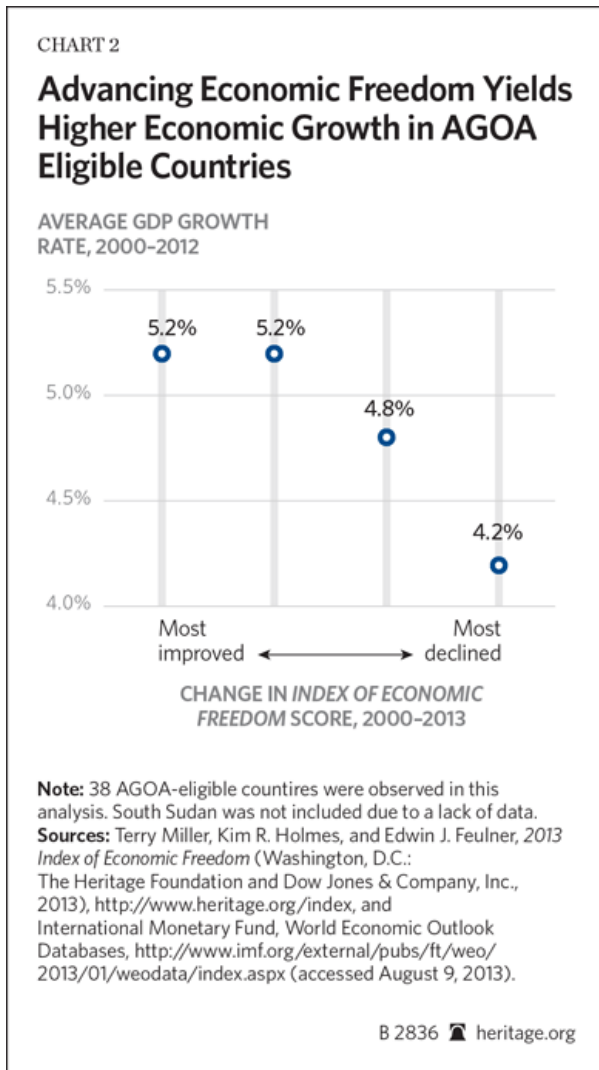


Figure 13. Freedom and Economic Growth in AGOA-eligible countries [47]

Africa's place in the world economy is changing rapidly. The landscape into which AGOA was enacted in 2000 is far different, and while many of the regions remain poor, the African continent has become considerably more integrated and dynamic. Trade investment and policy has gradually improved the economic growth and living standards of Sub-Saharan Africa, as shown by the economic policy analysis conducted by the Index of Economic Freedom in Figure 13.

The improved policy environment has made Africa an attractive trade partner to the rest of the world. The European Union is currently pressuring African countries to enter into economic partnership agreements with preferential access to EU markets contingent on reciprocal preferential access to African markets. Additionally, China's trade with Africa exceeds \$160 billion, and has claimed the spot as Africa's number three trading partner since 2009. If the United States fails to advance AGOA beyond a trade-preference agreement, it will risk losing traction to Europe and China, which are eager to secure economic ties to expanding African regional economies, as well as risk losing the potential to create thousands of American jobs. **Africa should no longer be viewed through the myopic lens of aid and assistance but should be viewed increasingly as a strategic economic partner.** One step towards negotiating a free trade agreement with continental Africa should be to make AGOA preferences contingent on reciprocal duty-free treatment of an expanding list of U.S. export products with the goal of transforming AGOA into a formal FTA by 2025. Congress and the Trump Administration should use the momentum of the newly signed AfCFTA to upgrade AGOA to an instrument that advances economic freedom in Africa and strengthens economic ties towards a free trade agreement.

CONCLUSION

This report has outlined the major concerns surrounding the current U.S.-Sub-Saharan Africa trade landscape. It has been argued that a strategic partnership between the two regions could result in stronger bilateral economic development, promotion of democratic values in a free-market economy, and integration of U.S.-based technical standards into the global economy. While 620 million people in Sub-Saharan Africa do not have access to electricity, legislation such as the Electrify Africa Act of 2015 and initiatives such as Power Africa and Trade Africa have led the path towards solving some of this energy crisis. This report has suggested amendments to the AGOA framework aimed at spurring foreign direct investment, decreasing an unpredictable market place, and promoting African trade integration. The importance of technical standards as the economic bridge between the U.S. and Africa has also been presented, as well as the need for capacity building and codified U.S.-based standards requirements.

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