

THE IMPACT OF THE U.S. SHALE BOOM IN AFRICA

by Nancy E. Brune, Ph.D.

While global oil prices are down in 2015 and U.S. production is off its recent highs, net increases in U.S. production over the last decade have impacted economies and oil markets around the world, including oil-rich countries in Africa. Algeria, Angola, and Nigeria, all members of the Organization of the Petroleum Exporting Countries (OPEC), each send a share of their crude oil exports to the United States. This article describes the impact of the U.S. energy boom on Africa, particularly sub-Saharan Africa, and discusses some of the challenges and opportunities that have resulted from the fall in U.S. demand for Africa's oil resources. Shifts in trade patterns demand a refocusing of U.S. security measures and an increase in strategic collaboration, as opposed to isolation.

Due to technological breakthroughs like hydrologic fracturing, and a business friendly environment, the United States has experienced a steady increase in unconventional sources of energy, specifically light tight oil and shale gas, over the past decade. While global oil prices have declined more than 50 percent since mid-2014 (closing at below \$50 in September 2015) and U.S. production is off its recent highs, net increases in U.S. production over the last decade have impacted economies and oil markets around the world. As of May 2015, for example, the United States has raised local oil output from 5.07 million barrels per day (bpd) in 2007 to an average of 8.71 million barrels per day in 2014.¹ Natural gas production is also surging, and the U.S., which in the last decade built gas import infrastructure, is now expected to become a net exporter by 2017.² As a result, analysts are predicting that the United States will become a net energy exporter by 2022.³

As conventional and unconventional sources of energy have continued to flow, several reports have examined the impact of the U.S. energy boom on the national economy and on our relations with the Middle East and other petroleum-dependent countries.⁴

Dr. Nancy E. Brune is the Executive Director of the Kenny Guinn Center for Policy Priorities, a state-wide policy analysis and research center providing independent data on issues of economic development, education, tax and fiscal policy, and natural resource security.

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However, there has been much less attention paid to how the U.S. shale boom has affected Africa, particularly the oil-producing countries in the region. Algeria, Angola, and Nigeria – all members of The Organization of the Petroleum Exporting Countries (OPEC) – send some share of their crude oil exports to the United States, although the amount varies. This article describes the impact of the U.S. energy boom on Africa, particularly sub-Saharan Africa, and describes some of the challenges and opportunities that have resulted from the fall in U.S. demand for Africa’s oil resources. Shifts in trade patterns demand a refocusing of U.S. security measures and an increase in collaboration, as opposed to isolation.

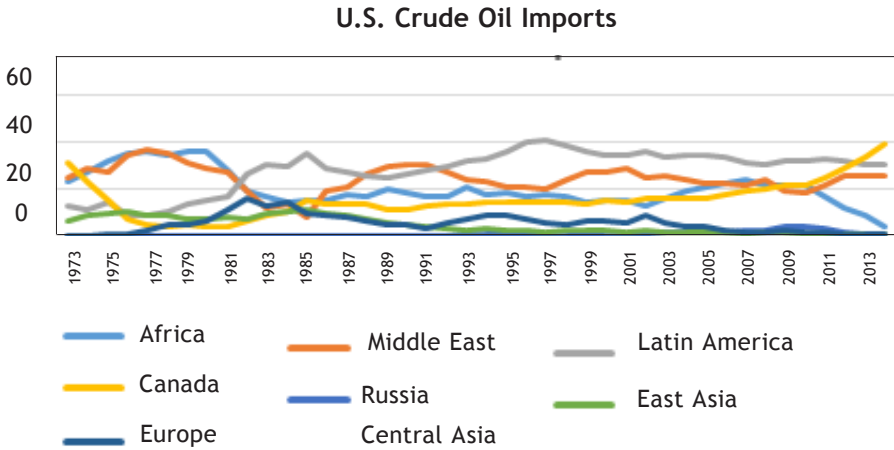


Figure 1. U.S. Crude Oil Imports from Rest of World, by Region

Source: Author’s calculations using data from the U.S. Energy Information Administration

BACKGROUND

The continent of Africa hosts 54 countries. A significant number of these have vast reserves of natural resources including minerals, diamonds, oil, and gas. Table 1 below provides information on those countries that produce oil, their estimated reserves, the dependence of their economies on oil revenue, and the share of their energy exports to the United States.

Prior to recent domestic developments in unconventional fossil-based resources, Africa played an important role in U.S. strategy to diversify its energy base over the last twenty years. In particular, “West Africa has increasingly formed a core part of a broader American global strategy of energy security through diversification,” and “the U.S. has emerged over the last decade to stand now as one of the key players in African energy politics.”⁵ Now, Africa, particularly West Africa, remains one of the areas of the world most adversely impacted by the U.S. energy boom, particularly Algeria, Angola, and Nigeria – all members of OPEC.

Reserves and Revenue by Country

Country	Proven Oil Reserves (TMB) ⁶	Oil Revenues as a percent of export earnings	Oil revenues as a percent of yearly budget.	Oil exports to U.S. as a percent of total oil exports
Algeria ⁷	12.2	98% (2013)	60% (2013)	7.5%
Angola	12.7	90% (2014) ⁸	80% (2014) ^{9,10}	14% ¹¹
Cameroon	0.2	40% (2014) ¹²	40% (2013)	N/A
Chad	1.5	72% (2005-10) ¹³	70% (N/A) ^{14,15}	48% ¹⁶
Congo Republic ¹⁷	1.6	87% (2011)	80% (2011)	12%
Egypt	3.6	N/A	10% (2011) ¹⁸	N/A
Eq. Guinea	1.1	99% (2011) ¹⁹	80% (2014) ²⁰	30% ²¹
Gabon	2.0	90% (2011) ²²	56% (2011) ²³	15% ²⁴
Libya	48.4	98% (2012) ²⁵	95% (2015) ²⁶	3% ^{27,28}
Nigeria	37.1	95% (2014) ²⁹	N/A	3% ³⁰
South Sudan	3.5	90% (N/A)	N/A	Negligible
Sudan	1.5	N/A	N/A	Negligible

Crude oil exports from Africa to the United States have fallen from a high of 2.4 million barrels a day in 2007 to 0.29 million barrels a day in 2014, which represents an 87.7 percent decline (see Figure 1).³¹ As of June 2015, only one country, Angola, was among the top ten suppliers (101 thousand barrels per day) of crude oil to the United States.³²

Nigeria, a member of OPEC, has experienced the biggest blow from rapidly declining U.S. oil imports. In 2005, Nigeria was the fifth largest U.S. supplier. Approximately 70 percent of Nigeria’s oil production is offshore.³³ The U.S. was an attractive market for Nigeria’s high quality, light sweet crudes (Bonny Light and Brent Crude) that are low in sulfur content and most similar in composition to shale oil, particularly that produced in North Dakota’s Bakken field. In 2010, 43 percent of Nigeria’s oil exports (amounting to 373.3 million barrels) were sent to the United States. By 2014, Nigeria’s oil exports to the U.S. had fallen to 33.6 million barrels in the first six months of the year, reflecting a 91 percent decline.³⁴ By July, Nigeria had completely stopped sending oil to the United States.³⁵ The United States changed from being the largest importer of Nigerian oil in 2012 to the 10th largest in 2014, accounting for 1 percent of U.S. total oil imports.

In addition to the U.S. energy boom, Nigeria is suffering from low global oil prices and reduced demand from European refiners, which import around 40 percent of Nigeria’s oil.³⁶ While Nigeria has increased exports to India (overtaking Saudi Arabia as the largest supplier of oil to India), there are new and high-tech refineries in Asia that process heavier, cheaper grades, leaving Nigeria in search of a solid customer base.^{37,38}

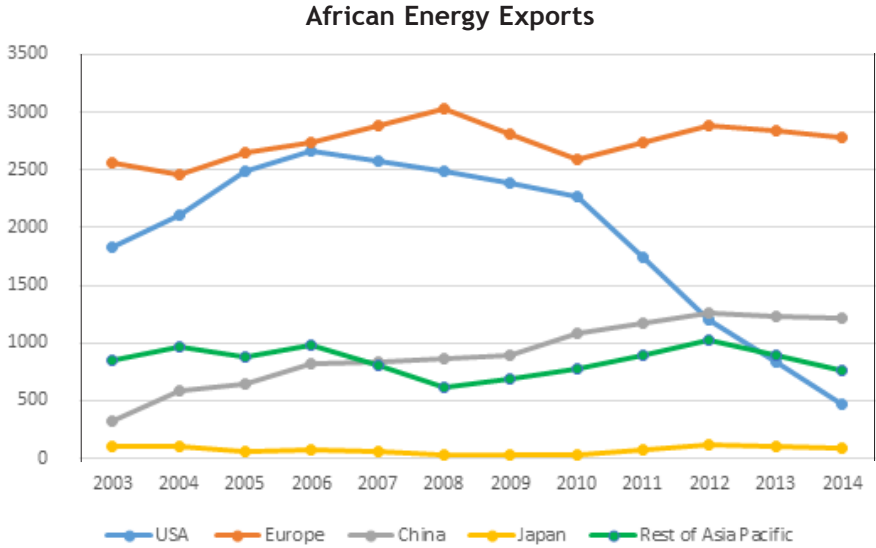


Figure 2. African Exports to the Rest of the World, measured in thousands of barrels per day
Source: Author’s calculations using data from the U.S. Energy Information Administration

In addition to falling demand and soft prices, Nigeria’s production and export trade is adversely impacted by crude oil theft in the Niger Delta, which is estimated at 400,000 barrels per day, and amounts to 10 percent of the country’s production. By some estimates, halted operations and massive oil leakages have resulted in revenue losses totaling an estimated \$1.7 billion per month, which represents 7.7 percent of Nigeria’s GDP.³⁹

Algeria, the second largest oil producer in Africa and a member of OPEC, is heavily reliant on its hydrocarbon sector, which accounted for roughly 60 percent of public revenues and 95 percent of export earnings in 2014.⁴⁰ Increased U.S. domestic production of light tight oil and shale gas has adversely impacted Algeria. Similar to Nigeria, Algeria’s light, low sulfur, sweet crudes are better suited for U.S. refineries than the refineries in China and India that are configured to process heavier, sour crudes.⁴¹ In 2010, the United States was the biggest single destination for Algerian oil exports (53 percent), compared to 31 percent heading to Europe. U.S. imports of Algerian crude peaked in 2007

(244 million barrels annually), and have declined by 84 percent to 40 million in 2014.⁴² In 2014, only 7.5 percent of Algerian oil exports went to the United States, compared to 72 percent to Europe.⁴³

In recent years, Algeria's crude oil production has been stagnant because of delayed production and infrastructure projects. In 2013, the Algerian parliament amended its hydrocarbon law and offered more favorable tax policies and incentives in order to spur renewed foreign investment in its shale resources.

The U.S. energy boom has also impacted Angola, the third largest oil producer in Africa. A member of OPEC, Angola's oil production grew by an annual average of 15 percent over the period 2002-2008 as production started from multiple deep-water fields that had been discovered in the 1990s. Today, eighty percent of Angola's oil production is offshore.⁴⁴ Angola's economy is also almost entirely dependent on oil production, as oil exports accounted for approximately 80 percent of public revenues in 2014. In 2005, Angola was the 7th largest supplier of crude oil to the United States, accounting for 5 percent of total U.S. crude imports on average over the period 2005-2009. As of 2014, only 1.9 percent of U.S. crude imports came from Angola. In 2009, Angola sent 31 percent of its crude oil to the United States; by 2014, only 8 percent of crude oil went to the United States.⁴⁵

Angola has responded to the U.S. energy boom and accompanying decline in imports by redirecting more of its crude oil to China and India. The lion's share (almost 50 percent) of Angola's oil exports now head to China. For the last decade, China has been aggressively securing supplies of natural resources in Africa. As early as 2004, China expanded its relations with Angola, offering loans for construction and energy projects secured with oil.⁴⁶ As of 2015, Angola is the second-largest supplier of oil to China (behind only Saudi Arabia). In addition, India has increased its purchase of Angolan oil in recent years.⁴⁷

On a global scale, Chad is not a significant producer of oil and gas. Chad has approximately 1.5 billion barrels of oil in proven reserves (compared to 37 billion in Nigeria).⁴⁸ Chad is one of the least diversified countries, with petroleum oil accounting for over 90 percent of its export earnings.⁴⁹ While roughly half of Chad's oil is sent to the United States, over the period 2005-2010, the United States' import of Chadian oil accounted for less than 1 percent of its total oil imports.⁵⁰ However, most of Chad's crude oil exports are sent to the United States, so the African nation remains quite dependent on the U.S. market. The United States is a leading investor in Cameroon, largely through the Chad-Cameroon pipeline.

Located in West Africa, Equatorial Guinea also has oil and gas reserves. As of 2014, Equatorial Guinea had proven oil reserves of 1.1 billion barrels. Oil

production is the basis of the country's economy, accounting for 99 percent of export revenues (in 2011) and 90 percent of all government revenues (in 2015).⁵¹ In 2014, total oil production averaged almost 270,000 barrels per day, which is significantly lower than the 2007 peak of 369,000 barrels per day. Equatorial Guinea exports nearly all of the oil it produces, and the small amount of domestic consumption is met through imports of refined products, which was estimated at 2,100 barrels per day in 2014. In 2010, almost 30 percent of Equatorial Guinea's crude oil exports were sent to the U.S. However, by 2013, this amount had fallen to 8.0 percent.⁵² Currently, China is the largest single destination of Equatoguinean crude oil.⁵³ While the U.S. had once been a critical market for Equatorial Guinea, oil imports from the country have never been significant as a share of total crude oil imports. For instance, in 2009, Equatoguinean crude oil accounted for 0.98 percent of total crude oil imports, and later fell to 0.22 in 2013.⁵⁴

With proven oil reserves of 1.6 billion barrels, the Republic of Congo exports nearly all of the crude oil it produces, which comes almost entirely from offshore oil fields. Like most other resource-wealthy countries, the government depends heavily on oil revenues, which account for 87 percent of export earnings and 80 percent of government revenues. In 2013, total oil production amounted to roughly 280,000 barrels per day.⁵⁵ As of 2012, the Republic of Congo sent 43 percent of its oil to China and 12 percent to the United States, which was down from 17 percent in 2010.⁵⁶ Similar to Equatorial Guinea, the Republic of Congo's crude oil exports have never amounted to a significant share of the U.S. total import bill. In 2010, Congolese oil exports accounted for 0.76 percent of total U.S. crude oil imports but only 0.05 in 2014.⁵⁷

With 2.0 billion barrels in proven reserves, Gabon is a mature oil producer whose production has steadily declined after peaking from 370,000 barrels a day in 1997. Like its other resource wealthy neighbors, Gabon's economy is also dominated by oil. The country produced around 240,000 barrels per day of oil in 2013. In 2014, oil revenues comprised over 35 percent of the government's budget and 80 percent of exports.⁵⁸ The country's petroleum consumption is around 16,000 barrels a day, which allows it to export more than 90 percent of what it produces.⁵⁹ In 2010, Gabon exported about half of its oil to the United States.⁶⁰ By 2012, this number had fallen to 15 percent.⁶¹ Over time, Gabon's oil has accounted for less and less of the United States' total import bill. In 1997, 2.8 percent of U.S. crude oil imports came from Gabon. By 2014, this number had fallen to 0.22 percent.⁶²

Despite falling global oil prices, Cameroon is increasing production to over 100,000 barrels a day, which represents a 17 percent increase over 2014 levels.⁶³ After peaking in the late 1980s (at 180,000 barrels of oil a day), Cameroon's pro-

duction fell dramatically in the late 2000s. Leveraging the high global price of oil in the second half of the decade, Cameroon, leveraging international investment, invested in its oil production infrastructure. The result of those efforts is paying off with higher levels of output. Unfortunately, the low global price of oil has put downward pressure on the country's bottom line.

According to the publication *Business in Cameroon*, "The downturn in global oil prices on the international market and the security challenges at Cameroon's borders with the Central African Republic and Nigeria, which are slowing the performance of the tax and customs administrations, did not seem to affect the Treasury Department. Indeed, in the first six months of 2015, the government was able to raise 1.2 trillion CFA in revenue, surpassing initial forecasts by 100 billion CFA, according to Ministry of Finance statistics."⁶⁴

Libya has the largest proven oil reserves in Africa, and the ninth largest in the world. Prior to the onset of political unrest and violent conflict in 2011, the country was producing 1.6 million barrels of oil per day. Over the last year, production has averaged less than 0.50 million barrels of oil per day. Libya exports 70 to 80 percent of its oil to Europe. In 2013, Libya exported around 5 percent of its oil to the United States, which represented less than 1 percent of total U.S. crude oil imports.⁶⁵

While Sudan and South Sudan are oil producers, they have very little energy trade with the United States. South Sudan, which gained independence from Sudan in July 2011, has the lion's share of proven oil reserves (3.5 billion barrels). However, South Sudan relies on Sudan's export pipelines and maritime ports. As of September 2014, oil revenue accounted for 27 percent of Sudan's total government revenues and 98 percent of South Sudan's revenue.⁶⁶ For the first half of 2014, Sudan and South Sudan's oil production averaged 260,000 barrels per day, which is a significant decline from 2010 levels of 490,000 barrels per day. Continued conflict has resulted in falling output. China has invested significantly in the industry and accounts for roughly 86 percent of both countries' crude oil exports.⁶⁷

While Egypt has oil and gas reserves, it does very little energy trade with the United States. Egypt is the largest non-OPEC oil producer in Africa. Egypt's oil production has steadily declined since 2010, while the country's consumption has grown. Egypt provides energy subsidies, which has contributed to the country's high budget deficit.⁶⁸

CHALLENGES TO AFRICAN OIL PRODUCERS

The United States energy relationship with African nations has been shaped by practical considerations as well as its overall strategic goals in the region and

the larger geopolitical context. For example, Nigeria produces low sulfur oil that is similar in composition to the oil that the United States produces and refines in the southern part of the country. The United States has invested heavily in the Chad-Cameroon oil pipeline as a way to support the economies of those countries. Political, diplomatic and security strategy differences have shaped bilateral Libya-U.S. trade since the 1970s.

The combination of low global oil prices and significant shifts in export markets have battered oil-producing countries in Africa. As stated previously, most of the oil producing countries in Africa rely heavily on oil revenues to fund the government. Analysts estimate the fiscal break-even prices that governments built their recent budgets on are as follows: Algeria (\$107-\$130 per barrel); Angola (\$94 per barrel); Republic of Congo (\$70-\$104); Gabon (\$97); Libya (\$106-\$184); and Nigeria (\$124).⁶⁹ All of these are significantly higher than the global oil price of \$49.61 per barrel.⁷⁰

In Angola, government officials project that oil revenue will only cover 37 percent of the country's spending needs in 2015, down from 70 percent last year. The government plans to reduce expenditures by 25 percent (or \$51 billion) to address the shortfall.⁷¹ The Republic of Congo has voted to reduce its 2015 budget by 12 percent.⁷² Angola, however, is weathering the storm by drawing on its sovereign wealth fund, the *Fundo Soberano de Angola* (FSDEA), which was valued at \$4.95 billion as of January 2015.⁷³ Angola has also benefitted from over \$14 billion in loans from China since 2002.⁷⁴

As for Libya, government leaders from the United States and Europe expressed concern about the country's long-term fiscal trajectory. "In light of low oil production and prices, Libya faces a budget deficit that has the potential to consume all of its financial assets if the situation does not stabilize," the formal statement said.⁷⁵ In Gabon, falling oil prices and lower U.S. demand have been exacerbated by ageing fields and union strikes.⁷⁶ In Equatorial Guinea, the economy contracted by 2.1 percent in 2014 and is expected to fall 8.7 percent in 2015.⁷⁷ The economic contraction could test the stability of President Obiang, who has ruled since 1979, and whose family has been accused of corruption and embezzlement.⁷⁸

Algeria has not escaped unscathed. Prior to the decline in global oil prices, Algeria used the proceeds from oil and gas production to accrue significant foreign exchange reserves as well as a stabilization fund (or sovereign wealth fund) which supports its comprehensive social programs.⁷⁹ As of December 2014, the stabilization fund was valued at \$66.1 billion.⁸⁰ After years of largess, Algeria ended 2014 with a budget deficit amounting to 18 percent of GDP "for the first time in fifteen years."⁸¹ In August, Algeria's political leaders wrote a letter to OPEC cautioning that a continued decline in oil prices may warrant a review of

the group's decision to maintain current production levels.⁸²

Not surprisingly, many of the oil producing countries in Africa are struggling to balance their budgets. Many, who have leveraged natural resource wealth to offer direct energy or indirect subsidies, are now scaling back those subsidies. The distributional impact of the subsidies varies across countries. The lack of currency has halted infrastructure investment projects within and outside of the oil sector.

SECURITY CHALLENGES

Unfortunately for the region's political leaders, the fall in foreign exchange reserves and government revenues comes at a time when many oil-producing countries are facing growing internal and transnational security challenges. Nigeria is dealing with violent Islamic extremists. Algeria and Chad are confronting security challenges posed by transnational forces. Libya continues to face internal rebel forces and factions that seek to weaken the government by attacking and damaging the country's supply of natural resources. One question for U.S. national security decision makers is: How do we maintain diplomatic and cooperative security relationships with resources dependent countries and protect our strategic interests while recognizing that the decline in oil revenues for these countries could be very destabilizing?

In Nigeria, the government is fighting the violent, extremist Islamist group, Boko Haram, which has killed an estimated 13,000 people since 2009.⁸³ The country's security budget has grown from \$2.3 billion in 2013⁸⁴ to \$5.8 billion in 2014, much of it linked to the fight against Boko Haram.⁸⁵ Nigeria's security budget accounted for 0.9 percent of gross domestic product (GDP) in 2009 and 0.4 percent in 2004.⁸⁶

Historically, Nigeria has been an important partner in the United States' counterterrorism efforts in Africa. The U.S. African Command (AFRICOM) has helped conduct multilateral training and exercises for Nigeria's army and security forces. In June 2013, a team from the U.S. State Department's Department of Conflict and Stabilization Operations traveled to Nigeria to talk about security and instability in the region and address Nigeria's concerns that the country lacks adequate training and equipment to successfully battle Boko Haram.

Direct security and military assistance to Nigeria, however, has grown increasingly complicated. The U.S. "grew frustrated with Nigeria's response to the kidnapping of 200 schoolgirls in northern Nigeria in April 2014."⁸⁷ Tensions grew when the U.S. refused to sell military hardware to Nigeria "because of its military's reputation for brutality and incompetence."⁸⁸ The U.S. has repeatedly voiced concern over both alleged and documented reports of human rights abuses by the Nigerian military. A 2015 report by Amnesty International reveals

large-scale human rights abuses committed by the Nigerian military in its campaign against Boko Haram.⁸⁹ As noted by Foreign Policy staff writers Dan de Luce and Siobhan O'Grady, "The United States and other Western governments had grown frustrated with [then- President Goodluck] Jonathan's handling of the Boko Haram problem, including the Nigerian army's heavy-handed tactics, shoddy logistics, and the ex-president's preference for unilateral action instead of coordinating with regional governments."⁹⁰

Underscoring the tension, in May 2015, President Obama announced that as much as US\$35 million in U.S. defense and military services would be made available not to Nigeria, but to France to help Mali, Niger, and Chad fight Boko Haram. However, following the visit of President Muhammadu Buhari to Washington, DC where both nations pledged greater cooperation, President Obama announced that he would expand military assistance, including more military training and equipment, to Nigeria to fight the Islamist insurgents.

Recognizing that Boko Haram has "metastasized into a regional threat," the United States has also increased military and financial assistance to its neighbors – Chad and Cameroon, as well as Niger – which includes training and information sharing.⁹¹ According to U.S. AFRICOM, there are plans to support the development of the Lake Chad Basin Multinational Joint Task Force.⁹² In an area that has grown increasingly unstable (coups in Mali, Mauritania and Niger), Chad has emerged as a point of relative stability in a neighborhood characterized by increasing violence. In May 2014, the United States deployed 80 troops to Chad to support efforts to locate the kidnapped Nigerian schoolgirls.⁹³ The U.S. has "poured copious amounts of money, time and effort into making Chad a stable regional counterterrorism partner, sending troops there, training and equipping its army, counseling its military leaders, providing tens of millions of dollars in aid, funding its military expeditions, supplying its army with equipment ranging from tents to trucks, donating additional equipment for its domestic security forces, providing a surveillance and security system for its border security agents..." as reported in *The Nation*.⁹⁴

In the face of declining oil revenues, the security assistance relationship between Chad and the U.S. could shift. Chad might become an even more willing security partner in exchange for greater financial assistance. Similarly, a closer relationship with the U.S. could improve Chad's internal and regional security position in the face of its increasingly limited ability to fund its domestic security bill. Despite Chad's role as a regional strategic partner, internal challenges remain, including the lack of democratic governance and shared prosperity.⁹⁵ The United States should continue to support efforts that strengthen and professionalize Chad's institutions, including its military and judicial systems.

Falling U.S. demand for Algeria's crude oil exports and low prices have challenged Algeria's economy. The weak price of oil has slowed much needed foreign investment in the hydrocarbon sector. In 2013, Islamic militants attacked a gas facility in Tiguentourine, which ended in the death of 39 hostages.⁹⁶ The attack in Algeria is similar to violent attacks that have taken place in Liberia and Nigeria by extremist militants who seek to destroy a critical source of revenue for those who hold power and authority over the oil resources. The incident signaled the growing vulnerability of Algeria to violent, transnational actors and encouraged regional arms proliferation. Growing insecurity on the country's southern borders with Libya, Mali and Niger is prompting greater militarization of the border region by the government.⁹⁷ Since May 2014, Algeria has closed approximately 3,700 miles of border with Mauritania, Mali, Niger and Libya and deployed soldiers to those areas.⁹⁸

Following the attack, the United States "proposed sharing more information with Algerian security forces to help them kill or capture militants in their own country and in areas just across their borders."⁹⁹ Historically, Algeria has been wary of support from the U.S. or its European neighbors. U.S. Secretary of State John Kerry said, "We will look to increase our security assistance to Algeria. We really want to work in a cooperative way, and we want to do this so that Algerian security services have the tools and the training needed in order to defeat al-Qaida and other terrorist groups."¹⁰⁰ As noted by the U.S. State Department, "U.S. bilateral foreign assistance to Algeria is designed to strengthen Algeria's capacity to combat terrorism and crime, support the building of stable institutions that contribute to the security and stability of the region, and support Algeria's civil society."¹⁰¹

Angola, which emerged from civil war in 2002, is also confronting the impact of a decline in U.S. demand for oil and lower global oil prices. Low oil prices have limited the government's ability to provide fuel subsidies to the population and provide patronage to the supporters of President Eduardo dos Santos, who has held the office since 1979.¹⁰² Antigovernment sentiment is growing.¹⁰³ Ironically, Angola, known for having the "best funded security forces in Africa," may no longer be able to fund its domestic and external security apparatus to maintain order in the face of growing opposition.¹⁰⁴

Libya was never as dependent on the U.S. to purchase its oil the way that Nigeria and other African oil producers were.¹⁰⁵ However, Libya is confronting an increasingly dangerous security environment, which has the potential to severely devastate the country's economy, which remains heavily dependent on oil revenue. Militia groups, including members of ISIS, conducted attacks on oil facilities and pipelines regularly during the first half of this year. Oil production has fallen from 1.6 million barrels a day in 2010, to around 410,000 barrels a

day in June 2015. The lack of oil revenues makes it difficult to pay civil servants and soldiers and build a state security apparatus.

OPPORTUNITIES FOR ENGAGEMENT

Policy makers and political leaders must consider how to leverage U.S. energy resiliency, resulting from the higher production of unconventional energy sources, while acknowledging that our energy boom could have destabilizing effects on those countries who used to supply our energy. Given our strategic interests in the region, the United States should continue engagement with our trade and strategic partners on the continent even though our direct interest is no longer access to vital energy supplies.

Energy Infrastructure Investment

Africa desperately needs investment in its energy sector. For example Nigeria, which is an energy rich country, cannot supply sufficient power to its 180 million residents. Currently, it generates less than 4,000 megawatts (MW) annually, which means that the majority of Nigerians, who cannot afford diesel generators, have no access to electricity. The lack of energy or power infrastructure continues to hinder economic growth and development.

To address this issue, President Obama launched the Power Africa Initiative in 2013, in which he pledged \$7 billion of investment over the next five years to increase energy production and access to energy in Nigeria, as well as Ethiopia, Ghana, Kenya, Liberia, and Tanzania. Power Africa is helping support the development of Nigeria's energy sector through credit instruments, grants, technical assistance, and investment promotion efforts. On the other side of the Atlantic, the U.S. is leveraging Power Africa to provide support for U.S. trade missions and investment support in Nigeria's power sector by providing political risk insurance, as well as other supports. Since its launch, Power Africa has awarded \$700,000 for off-grid energy projects in Nigeria.¹⁰⁶ The United States must continue to work with private sector interests, regional banks, and governments in our oil-producing partners in Africa to continue and increase investment in the power sector. Greater U.S. engagement in Nigeria's energy sector will provide opportunities to U.S. companies while also helping build out Nigeria's core infrastructure, which is a critical component of the country's long-term economic growth.

Integrated Partnerships: Education, Science and Technology

Several oil producing countries, like Gabon, are using falling oil prices and U.S. demand for oil imports as an excuse to accelerate continued diversification of the economy.¹⁰⁷ The United States should explore opportunities to develop strategic and integrated partnerships that align with economic diversification

goals, and expand education and science and technology (S&T) partnerships with our oil producing trade partners. An important component of developing long-term, mutually beneficial and impactful S&T partnerships includes partnerships with local institutions and universities.

Modernization of Oil Sector

As appropriate, the United States should work with government agencies and U.S. and international businesses to support the modernization of and investment in the oil sectors in the countries impacted by the U.S. energy boom. By many accounts, global investors are looking for upstream and downstream assets in oil-producing countries in Africa.¹⁰⁸ The U.S. should work closely with private sector interests to support investment in our oil-producing trading partners. Additionally, the U.S. should continue providing technical assistance to help countries develop sound regulatory frameworks and policies in the energy and power sectors.¹⁰⁹ Nowhere is this more critical than Nigeria, where the failure of Nigeria's political leaders to pass the Petroleum Industry Bill (introduced in 2008) has created an uncertain investment environment in the sector and has failed to address concerns for greater transparency. The uncertainty, in addition to growing terrorism, has caused numerous businesses to flee from Nigeria's oil industry.¹¹⁰

Much Needed Reform

Over the very long term, the U.S. energy boom and falling oil prices could provide the appropriate convergence of factors to address much needed reform in many of Africa's oil-producing nations. For too long, oil producing countries have relied on their natural resource wealth to compensate their supporters and avoid much needed fiscal reform. Given the decline in oil revenues, countries may be forced now to reduce market distorting subsidies. For example, fuel subsidies in Nigeria cost the economy \$7.5 billion accounting for 30 percent of 2011 budget. In contrast, the country's education budget amounts to 8 percent of the total budget. In 2010, 65 percent of subsidies benefitted 40 percent of the richest households.¹¹¹ Similarly, declining oil revenues are likely to affect Algeria's ability to provide social transfers and subsidies, which have been used to "avoid popular revolt."¹¹² Nigerian President Buhari, upon taking office in May 2015, fired the board of the Nigerian National Petroleum Company and is expected to restart discussions about the provisions contained in the PIB.¹¹³ In late September, President Buhari declared himself the head of the Ministry of Petroleum Resources in an effort to "sanitize Nigeria's oil industry and free it from corruption and shady deals."¹¹⁴ Other countries, like Gabon, are taking advantage of the low oil price environment to continue much needed reforms to diversify their

economies away from the hydrocarbon sector.¹¹⁵ Algeria, which knows all too well how economic stagnation can fuel violent, internal conflict, is pursuing a series of reforms that are needed to “diversify [its] economy from heavy oil and gas dependence to agricultural and consumer goods industrial development, accompanied with significant R&D spending to support these sectors.”¹¹⁶


The United States should continue to encourage the pursuit of policies by our oil-producing strategic partners that strengthen good governance, regulatory reforms, and democracy. These much needed reforms could improve the overall security environment throughout Africa, would support parallel efforts to invest in the infrastructure and economy, and could expand opportunities for substantive, constructive engagement (e.g. S&T partnerships) beyond traditional security cooperative partnerships.

CONCLUSION

The United States energy boom in unconventional energy sources has had far reaching effects around the world. Although the oil-producing nations of Africa are not among those with the largest reserves or output (with the exception of Libya and Nigeria), many of them relied heavily on the United States as the primary destination of their oil exports. This was especially true of Angola and Nigeria, which produce sweet, low sulfur crudes, which are similar to those produced and refined in the U.S.

While energy may no longer be the source of the ties that bind, the United States has a continued interest in Africa. According to the National Military Strategy published by the Joint Chiefs of Staff, the United States is “working to strengthen institutions across Africa, aimed at fostering stability, building peace-keeping capacity, and countering transregional extremism.”¹¹⁷ The 2015 National Security Strategy also noted that the United States will “advance an international order that promotes peace, security, and opportunity through stronger cooperation to meet global challenges... by investing in Africa’s economic, agricultural, health, governance, and security capacity.” Government leaders in the U.S. should work closely with those nations in Africa impacted by the U.S. energy boom to identify a pathway for investing in the diversification of their economy, to support the capacity of their internal security apparatus, and to help develop robust regulatory regimes.

The U.S. energy boom has been a game changer. However, it also provides an opportunity to hit the reset button on our engagement strategies with oil-producing nations in Africa and identify ways to pursue more mutually beneficial partnerships. New engagement strategies should help address growing security concerns in those countries and the region, identify best practices and policies that can help avoid boom and bust cycles of commodity-driven wealth, expand

education and S&T partnerships, and promote good governance. The U.S. shale energy boom may provide an opportunity to engage and cooperate in a more meaningful way that expands trade and economic opportunities on both sides of the Atlantic. 

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