The Perils of Palm Oil

Environmental Degradation and Food Insecurity in West Africa

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Palm oil companies are buying millions of acres of land in West and Central Africa, where conditions are ideal and land is cheap. The conversion of forests and farmland into palm oil plantations will accelerate deforestation, aggravate environmental degradation, and worsen regional food insecurity. Conflict and unrest exacerbated by food insecurity and a rapidly growing youth population will intensify political volatility in affected states, such as Nigeria. As a major regional power and U.S. ally, Nigeria's stability is essential for regional security. The threat posed by palm oil production in West Africa can be fully addressed by creating a council to integrate existing programs devoted to improving regional food security and mitigating environmental concerns, such as deforestation.

Introduction

Palm oil production has devastated forests around the globe and is responsible for numerous alarming environmental effects, including severe forest fires, air and water pollution, and the disruption of food chains. Environmental concerns and new production restrictions have pushed major multinational companies in the global palm oil market to develop new plantations in West and Central Africa. For poor African nations, the promise of international investment in the lucrative palm oil market is hard to resist.

West Africa is already one of the world's most food insecure regions, and environmental degradation and deforestation due to palm oil production will exacerbate this crisis. Deforestation from large-scale palm oil production will worsen regional food security by removing the safety net function of forests, replacing staple crops, and bringing about other negative environmental consequences, such as reduced rainfall. Food insecurity has been linked to episodes of violence and civil unrest, including the Arab Spring. In recent years, Nigeria's population growth, economic clout, and large military have allowed it to take on the role of a major regional power in West Africa. However, Nigeria's current food insecurity and suitability for growing palm oil make it particularly vulnerable to the destabilizing impact of large-scale palm oil production.

While current efforts to manage the effects of palm oil production focus on deforestation, the risk to food security in West Africa merits a tailored response. The creation of a council of relevant U.S. agencies and initiatives would enable existing programs to more effectively manage the multi-faceted challenge posed by expanding palm oil production. This council would not require new investment, but would rely on current resources and programs. The council would enable the United States to make full use of current resources and address long-term food insecurity and environmental threats in West Africa by integrating existing programs.

Growth and Consequences of the Global Palm Oil Market

Palm oil production is an extremely lucrative and rapidly expanding global industry. The recognition of an untapped market in West Africa and environmental concerns in current palm oil producing countries have led many multinational companies to develop new plantations in West Africa. At the same time, palm oil production has caused a slew of severe environmental repercussions in Southeast Asia, including deforestation, pollution, and recurring forest fires.

Global palm oil market trends

Current global palm oil production is valued at approximately $50 billion annually, and consumption is projected to triple between 2009 and 2050.[1] From 2016 to 2021 the palm oil market is predicted to grow at 7.2 percent annually.[2] Half of all packaged products (particularly foods and cosmetics) contain palm oil, and it is increasingly being used as a biofuel in European countries.[3]

The vast majority of palm oil is currently produced in Southeast Asia—Indonesia and Malaysia account for 80 percent of global production.[4] However, palm oil companies are searching for a new region in which to establish plantations. The combined effects of optimistic demand projections in the global palm oil market and restrictions on logging and land acquisition in Southeast Asia have led companies to West Africa. Palm oil is native to West Africa, so the region is uniquely well-suited to succeed Southeast Asia as a center of global palm oil production.

Between 2010 and 2015, more than five million hectares of land were allocated by West African governments for new palm oil plantations. Golden Veroleum Liberia (GVL), the world's second largest palm oil producer, recently signed a multi-billion-dollar contract with the Liberian government, leasing the company 220,000 hectares for 65 years.[5] The contract also included the option for GVL to extend the contract to 98 years.[6] In 2015, GVL came under heavy criticism for purchasing more than 13,000 hectares of land in Liberia from frightened landowners during the Ebola crisis.[7] The vast GVL purchases in Liberia are an example of questionable respect for land rights, a practice for which palm oil companies are notorious.

In an interview with *The Guardian*, Liberian farmer Lee Sworh expressed his concerns about the arrival of GVL's massive plantations. Sworh, who lives in a region where GVL is looking to expand, explained that "when the people come and take this land, you will not farm like this any longer, all of these places will be controlled by investors. You can't farm here, you will not do anything here. They will plant their palm."[8] The replacement of land currently used for farming with palm oil plantations is a particularly dangerous threat to food security.

Other multinational palm oil companies are also investing heavily in the development of palm oil plantations in Africa. Wilmar, the world's largest palm oil producer, has increased its revenues in Africa by 29 percent within the last five years alone.[9] Another company, Herakles Capital, plans to establish a palm oil plantation in Cameroon ten times the size of Manhattan.[10]

Deforestation and environmental degradation

The expansion of palm oil production leads to deforestation and serious environmental degradation. Cultivation and production of palm oil is the leading cause of deforestation today in Indonesia, Malaysia, and other equatorial countries.[11] A 2013 study found that multinational palm oil companies were responsible for approximately 90 percent of the deforestation in Sumatra between 2000 and 2010. In addition to deforestation, palm oil plantations also have a range of other environmental impacts, including habitat damage, forest fragmentation, biodiversity loss, disruption of food chains, changes in soil composition, water and air pollution, conversion of wetlands, peatlands, and arable lands, and increased greenhouse gas emissions.[12] These environmental consequences reduce the overall health of residents and agricultural productivity of affected regions.

Two of the most important environmental impacts of palm oil production are the increased use of slash-and-burn techniques to clear land for new plantations and reduced climate change resilience due to deforestation.

- *Slash-and-burn.* Palm oil cultivation has been linked to annual fires, such as those that devastated Indonesia in 2015.[13] The recurring fires were widely attributed to the practice of slash-and-burn agriculture, in which land is burned to clear it for new plantations. An analysis by the World Resources Institute found that nearly half of the 2015 fires in Indonesia started on or adjacent to palm oil plantations.[14] The haze, smoke, and pollution affected not only Indonesia, but also neighboring Malaysia and Singapore. Ultimately, the smoke and pollution from the fires led tens of thousands of people to seek medical assistance for respiratory problems.[15]

  In September 2014, several major multinational producers signed the Indonesian Palm Oil Pledge (IPOP), committing to sustainable palm oil production and no new deforestation. The effectiveness of IPOP, however, is hampered by the fact that slash-and-burn clearing is predominantly practiced by smallholder farmers, who lack the capital and tools needed to clear land using more sustainable techniques.[16] Many large palm oil companies, including signatories to IPOP, purchase significant amounts of oil palm from smallholders. A representative from Wilmar, the world's largest palm oil producer, told *The Guardian* that although the company had pledged to adhere to a no-burning policy, it would not cut off smallholders found to be practicing slash-and-burn.[17] Wilmar's failure to commit to sourcing from smallholders who engage in responsible cultivation, despite membership in several regulatory organizations (including IPOP), is emblematic of the ineffectiveness of many current international attempts to reduce deforestation caused by palm oil production.

- *Reduced resilience to climate change.* Deforestation leads to higher carbon emissions and lower regional resilience to climate change. Primary forests are more stable, resistant, and adaptive to climate change than plantations.[18] The resilience of forest ecosystems to shifting environmental conditions, such as climate change, rainfall patterns, and temperature, depends on several key factors. These factors are: diversity of species, variability within species, and the regional makeup of ecosystems.[19] Plantations are less resilient than natural forests in all three categories. Furthermore, deforestation can have

devastating ecological consequences for remaining forests in the surrounding area.[20] Forests play an important role in regulating regional climates, and deforestation can produce changes to albedo, carbon-cycle dynamics, and energy and moisture exchanges.[21] Converting West Africa's natural forests into palm oil plantations will reduce climate resilience in a region that is already one of the world's most vulnerable.

The impact of palm oil production on regional food security and stability will be greater in West Africa than in Southeast Asia. Palm oil production in Southeast Asia has had devastating environmental effects. Half of the forest cover in Sumatra, one of Indonesia's most intensive palm oil producing regions, was lost between 1985 and 2008.[22] However, food security in Southeast Asia is far more robust than in West Africa. In the past several decades, much of Southeast Asia has made vast strides towards food security—the percentage of the population classified as food insecure in Southeast Asia plummeted 18.7 points in the last 20 years.[23] Food insecurity is already acute in West Africa. The environmental consequences of palm oil production are thus likely to be more destabilizing than in Southeast Asia.

Food Insecurity and Instability in West Africa

When aggravated by other economic and demographic factors, food insecurity can spark or exacerbate civil unrest and conflict. Food security in West Africa is extremely fragile, and many countries such as Nigeria face serious food crises. Therefore, further deterioration of regional food security caused by deforestation and the environmental effects of palm oil production will heighten the risk of political instability.

Food insecurity and conflict

Food insecurity exists when there is inadequate physical, economic, or social access to sufficient amounts of safe, nutritious food.[24] A 2011 report by the World Food Programme found that food insecurity (especially in the form of high food prices) is associated with increased risk of democratic breakdown, civil unrest, protest, rioting, and other forms of conflict. Food insecurity frequently results from conflict (so-called "food wars") and can also trigger conflict.

Food insecurity contributed to the 2011 popular uprisings in Egypt, Morocco, and Tunisia at the beginning of the Arab Spring by exacerbating political weaknesses in those countries.[25] Many of the Arab countries that experienced the earliest uprisings in 2011 are heavily dependent on cereal imports as a crucial staple food.[26] Reduction in food security in West and Central Africa due to deforestation and an overall reduction in environmental climate resilience will make the region, already one of the world's most food insecure, increasingly vulnerable to food price shocks.

Increases in global food prices cause a particularly destabilizing form of food insecurity and have been repeatedly linked to outbreaks of violence and civil unrest. Countries that rely heavily on food imports, including much of West Africa, are particularly vulnerable to food price shocks. The 2007-2008 global food crisis was caused by a sharp hike in the price of maize, rice, and wheat on the global food market and led to rioting in countries around the world.

- *Food price shock.* The global food price level and food price shocks are typically identified using the data of the Food and Agricultural Organization of the United Nations (FAO), which produces an annual food price index. Price increases act as a trip wire that can lead to violence in countries whose economies are sensitive to fluctuations in the commodities market.[27] Food price shocks not only lead to increased food insecurity, they can exacerbate (and are exacerbated by) conflict. This pattern suggests that food price shocks, and food price inflation generally, are important drivers of particularly volatile food insecurity. Food price shocks have been linked to a number of historical outbreaks of unrest, from the French Revolution to the Arab Spring.

- *2007-2008 global food crisis.* Fluctuations in the prices of maize, rice, and wheat—three of the world's most important staple crops—are particularly dangerous to food security. During the 2007-2008 global food crisis, the worst incidence of food price shock in recent history, global wheat prices rose by 200 percent and overall food prices by 75 percent—devastating the food security of much of sub-Saharan Africa.[28] The massive surge of prices in the global food market during 2007 and 2008 was labeled a "silent tsunami of hunger" by the World Bank and sparked violent protests, riots, and civil unrest around the developing world.[29] The high world food prices triggered protest and/or violent rioting in 48 countries throughout 2007 and 2008.[30] The crisis provoked rioting that prompted both UN Secretary General Ban Ki-moon and the director of the World Food Programme to voice concerns about the impact of food insecurity on regional and international security.[31]

West Africa is vulnerable to several region specific risks, such as population and climate pressures, reliance on imports, regional instability, and poor underlying food security. These challenges, as well as worldwide food insecurity trends, mean West Africa is exceptionally susceptible to worsening food insecurity.

Food security risk in West Africa

Food insecurity in sub-Saharan Africa varies in type and degree of severity, and includes famine, insufficient food production and availability, and poor nutritional value. In 2017, sub-Saharan Africa received the second highest Global Hunger Index score.[32] Seven of the eight countries with food security levels rated "extremely alarming" are in sub-Saharan Africa.[33] The region also suffers from the world's highest hunger-related child mortality rate.[34] Between 2005 and 2016 Africa was the only region of the world where the absolute number of stunted children rose.[35]

Many West African countries, including Nigeria, are heavily dependent on food imports, making them highly vulnerable to price fluctuations in the global market. Furthermore, vast palm oil concessions occupy land that could be used to plant vital staple crops, such as cassava.[36] Establishing palm oil plantations in Nigeria's fertile southern regions will deepen the country's reliance on food imports.

West Africa faces significant climate and environmental pressures and has experienced the world's most severe land degradation in recent decades. Roughly one third of the population of sub-

Saharan Africa currently lives in areas that have been affected by land degradation since the 1980s.[37] Land degradation leads to decreased soil quality and declining agricultural productivity. Continued land degradation will imperil the food security of much of West Africa's rural poor, many of whom depend on farming for their livelihoods.[38]

Furthermore, the vast majority of agriculture in West Africa is rainfed. In 2011, the United Nations Environment Programme (UNEP) estimated that only five percent of the agriculture in the Sahel and West Africa is irrigated.[39] To be productive, rainfed agriculture requires roughly 350 millimeters of rain annually.[40] Increasing temperature and decreasing rainfall have pushed the boundary at which rainfed agriculture is possible further south and will continue to do so.[41]

According to the Intergovernmental Panel on Climate Change, West Africa and the Sahel are two regions that are among the world's most at risk for the negative impacts of future climate change.[42] UNEP assessed four specific climate change barometers in West Africa: changes in temperature, rainfall, drought, and prevalence of extreme flood events. Between 1976 and 2006 roughly half the total area of West Africa (accounting for half the region's total population) underwent temperature increases of between 0.5ºC and 1.0ºC.[43] Moreover, the UNEP study observed volatility in the duration and intensity of seasonal rainfall, leading to reduced crop yield and poor soil quality.[44] Regional drought occurrence has also increased. Recurring droughts are a leading cause of food insecurity in West Africa and the Sahel. Droughts can cause significant internal displacement as well as reductions in overall levels of household and national food security.[45] Between 1982 and 2009 vast regions of Chad, Mali, Mauritania, and Niger suffered between six to ten drought seasons, with some areas of these countries experiencing as many as 15 droughts.[46] A high number of droughts also occurred in several of West Africa's less arid countries, including Liberia, Burkina Faso, Senegal, Ghana and Nigeria.[47]

Forests play an important role in regulating and generating rainfall. A fully grown tree can release up to 1,000 liters of water vapor into the atmosphere every day.[48] The Amazon rain forest generates roughly 20 billion tons of water vapor daily.[49] The water vapor produced by forests can travel long distances in the form of cloud banks, creating a complex rainfall delivery system called 'flying rivers.'[50] Recurrent droughts already plague much of West Africa and further disruption of regional precipitation patterns will threaten its agricultural production.

The food security threat in much of West Africa is severe. Extant climate and environmental trends and rapid population growth mean that any reduction in regional food security could have serious consequences. Palm oil production will aggravate worrying trends in West Africa, such as deforestation, rainfall changes, and land degradation. Nigeria, West Africa's largest country, exhibits many of the region's major food insecurity pressures and is also Africa's premier palm oil producer.

Nigeria: On the Brink of Crisis

Nigeria is on the leading edge of multinational investment in palm oil production in Africa. Furthermore, Nigeria's food security situation is already extremely vulnerable. In 2017, the United Nations listed Nigeria as one of four countries currently at risk of famine.[51] Many of the same

trends that threaten food insecurity in West Africa also affect Nigeria. Therefore, the negative effects of palm oil production on Nigerian food insecurity should serve as a warning to other countries in the region.

Nigerian palm oil production

Nigeria is Africa's preeminent palm oil producer and is poised to overtake Colombia as the world's fourth largest palm oil producing country.[52] Sales growth forecasts for palm oil in Nigeria are up 40 percent for 2018.[53] Across much of southern Nigeria there is a band of land with ideal growing conditions for palm oil called the 'palm belt.'[54] The palm belt is the center of palm oil production in Nigeria and cultivation there is likely to intensify.

Currently, Nigeria's palm oil sector is significantly underperforming its potential output. Substantial amounts of palm oil productivity in Nigeria are lost annually to outdated machinery and inefficient market infrastructure.[55] Furthermore, the Nigerian plantations of many multinational companies, such as Wilmar, have only begun to bear fruit within the past several years. Despite initial struggles with low productivity, the largest palm oil producers in Nigeria have aggressively sought to expand their plantations.[56]

Food insecurity in Nigeria

In the 1950s, Nigeria was a net exporter of food.[57] However, the discovery of oil undercut agricultural development and led to increases in the price of staple goods. For example, the price of rice has increased by more than 100 percent since 2006.[58] Nigeria now imports nearly three million tons of rice annually, but only produces half a million tons for the domestic market. This heavy reliance on imported staple crops means Nigeria is extremely vulnerable to fluctuations in the global food market, such as the price hikes of the 2007-2008 global food crisis.

Instability in neighboring states, the ongoing conflict with Boko Haram, and the threat of climate change also threaten Nigeria's food security. Conflict impacts food insecurity by disrupting agricultural production and transportation as well as by displacing residents.[59] Furthermore, much of the violence in the fight against Boko Haram has taken place in Nigeria's arid northern region, which is already considerably more food insecure than the tropical south. A 2017 report by the Food and Agricultural Organization of the United Nations (FAO) estimated that 1.8 million people have been displaced within Nigeria and more than 200,000 refugees have flooded into Niger, Cameroon, and Chad.[60] The FAO also found that more than 50,000 Nigerians currently live in conditions that meet the classification for famine, the most severe stage of food insecurity.[61]

In addition to palm oil production, Nigeria faces several challenges that can worsen or accelerate the negative consequences of food insecurity. These risk factors include a large youth bulge, poor governance and weak land rights, rapid urbanization, and reliance on food imports.

- *Youth bulge.* Many studies have posited that, although food insecurity alone is not typically sufficient to cause serious conflict, it can lead to social upheaval when aggravated by

economic, social, or political factors. In developing countries, the presence of large youth populations can act as a trigger for violence and unrest.[62] Youth bulges occur when a developing country with high fertility and mortality rates reduces its infant and child mortality rate more rapidly than it decreases its fertility rate.[63] The resulting imbalance fuels an explosion in the youth population, a demographic phenomenon observable in numerous countries across sub-Saharan Africa.[64] Half of Nigeria's population is between the ages of 15 and 34.[65] Furthermore, youth populations are disproportionately vulnerable to food insecurity, due to their high unemployment rates and lack of financial stability.[66]

- *Rapid urbanization.* Rapid urbanization coupled with a youth bulge leaves an aging, shrinking rural population to bear the responsibility of food production for an expanding, food insecure urban population. The confluence of these two factors renders the population profoundly vulnerable to food insecurity. Large youth populations tend to concentrate in major cities and can be a destabilizing factor even in the absence of food insecurity.[67] Generally, countries with larger numbers of 15 to 24 year olds relative to the size of their population experience higher rates of protest, rioting, civil conflict, and terrorist attacks.[68] Food insecurity can spark violence by motivating large, volatile, and politically and economically marginalized youth populations to take up arms.[69]

- *Governance* Nigeria's ability to control and benefit from palm oil production faces two serious obstacles: poor governance (particularly corruption) and weak land rights. Although Nigeria is Africa's largest crude oil exporter, billions of dollars of revenue have been lost to poor infrastructure and corruption. In 2016, the state-owned Nigerian National Petroleum Corporation failed to pay the Nigerian treasury nearly $16 billion in revenue.[70] In 2017, Transparency International ranked Nigeria 148 (out of 180) on its annual Corruption Perceptions Index.[71] Furthermore, Nigeria's tax-to-GDP ratio is just 8 percent, considerably lower than those of Ghana (13.7 percent), the Côte d'Ivoire (14 percent), and Senegal (20.5 percent)—West Africa's second, third, and fourth largest economies—and roughly half the world average.[72] In the past several decades, many countries in Southeast Asia have translated economic growth into significant reductions in food insecurity. However, Nigeria has been unable to use its vast oil reserves to strengthen food security and other development indicators, such as reduced infant mortality. Ongoing systemic governance and corruption problems means that the Nigerian government is poorly positioned to effectively manage palm oil development.

- *Land rights* The global palm oil industry has a troubled history with land right disputes in Southeast Asia, a pattern that will likely continue as companies purchase and develop land in Africa. Abraham Baffoe, the Africa director for the environmental rights NGO Proforest, succinctly captured the disconnect between formal land purchases and practical land use patterns, noting that: "When land is legally owned by the government, communities still have traditional-use rights and that is a form of ownership." Often, palm oil companies purchase large tracts of land from the government without consulting local communities and with no obligation to compensate residents.[73] Dispute over customary land rights was a factor in all but three of the more than 30 armed conflicts in Africa between 1990 and 2009.[74]

Much of the land in rural Nigeria is owned according to unwritten or customary local laws. The traditional land holding system is defined by the presence of multiple individual or communal claims on a single piece of land.[75] Furthermore, numerous types of land rights exist, which can compete or co-exist in complex ways. Examples of recognized forms of land rights include usufruct land rights (the right to use another person's property on the condition its substance is not wasted or destroyed), residual rights, symbolic rights, grazing rights, communal rights, and right of occupancy.[76]

- *Climate change risk.* Higher and more unpredictable temperatures caused by climate change, along with the increased threat of extreme weather events such as flood and drought, threaten Nigeria's already fragile agricultural sector. Much of Nigeria's poor population is heavily reliant on farming for their livelihoods and food security. Studies have repeatedly found that deforestation of tropical regions is linked to reduced rainfall. Furthermore, changes in rainfall patterns can extend for thousands of miles, affecting not only the forest, but also peripheral areas. The agricultural production system in Nigeria is primarily rain-fed, and less than one percent of crop land is currently irrigated.[77] Northern Nigeria already faces serious desertification, and any further reduction in regional rainfall could have devastating consequences for regional food security. Even without the added pressure of climate change, much of the agricultural production in Nigeria is subject to seasonal fluctuations and erratic crop yields. Furthermore, Nigerian food security is already fragile due to its reliance on unpredictable seasonal rainfall and volatile climate pressures. Massive deforestation caused by palm oil production will further destabilize food security by accelerating climate trends and removing the natural resources on which local populations rely.

Nigeria is the center of West African palm oil production and faces a number of the region's systemic challenges to stability and food security. These challenges include a youth bulge, rapid urbanization, governance and land rights, vulnerability to climate change, and fragile food security. Palm oil production in Nigeria risks aggravating these underlying problems, worsening food insecurity and inciting conflict and unrest.

Security implications

In a future where one in four Africans is Nigerian, what happens in Nigeria has serious implications for regional and international security. Nigeria is a leading member of the African Union and one of Africa's most important regional powers.

- *Domestic counterterrorism.* Currently, one of the primary U.S. interests in West Africa is combatting Boko Haram, the Islamic State of Iraq and the Levant (ISIS), and other extremist organizations. In 2017 the Nigerian government withdrew more than $1 billion from a national oil fund to support the fight against Boko Haram.[78] With international assistance Nigeria has taken back nearly all of the land conquered by Boko Haram.[79] Nevertheless, extremist groups continue to pose a serious threat in Nigeria. Recently, Boko Haram kidnapped more than one hundred girls from the village of Dapchi, in northeastern Nigeria.[80] Nigeria already faces an array of governance, economic, and social challenges

and increased inequality and reduced food security due to palm oil production will exacerbate these challenges. Worsening food security could also spark greater internal instability, hampering Nigeria's ability to combat Boko Haram and other security threats domestically and throughout West Africa.

- *Regional stability.* Along with Egypt, Kenya, and South Africa, Nigeria is one of Africa's major regional powers and plays a critical role in West Africa. Furthermore, Nigeria has the largest economy in West Africa and the second largest economy in all of Africa. Nigeria was a driving force behind the creation of the Economic Community of West African States (ECOWAS) in 1995. Nigeria's GDP is greater than that of all other ECOWAS countries combined.[81] The Nigerian military is the largest in West Africa and plays a leading role combatting extremism in the region. Moreover, during the Ebola crisis the Nigerian government rapidly and effectively contained the spread of the disease and participated in regional and international humanitarian efforts to combat Ebola across West Africa.[82] Although Nigeria's internal challenges and state fragility have overshadowed its potential as a major power, the country's large economy, population, and military make it uniquely important to a stable West Africa.

- *International security.* The commander of the U.S. Africa Command argued that that a stable Nigeria is crucial to limiting the spread of Boko Haram and pointed out that Nigeria is now the seventh largest country in the world.[83] The United States, United Kingdom, France, and the African Union have all committed financial and military resources to support Nigeria's battle with Boko Haram. Boko Haram is allied with ISIS, Al-Qaeda in the Islamic Maghreb, and other extremist organizations against which the United States and its allies are currently fighting.

  Nigeria's large population and economy have positioned it to take on a major international role. By 2040, Nigeria's population is projected to reach up to 320 million—making it the world's fourth most populous country after China, India, and the U.S.[84] Nigeria's largest city, Lagos, has a population of roughly 21 million people and has surpassed Cairo to become the biggest city in Africa.[85] Nigeria is also a leading member of the African Union (AU) and has championed African integration and free trade for several decades.[86] Currently, Nigeria has major deployments in a number of African countries under the banner of ECOWAS and the AU and is an important contributor of peacekeeping troops.[87] Nigeria's rapidly growing population and economy mean it is already one of the world's most important countries and will continue to increase in both size and influence.

Refining current environmental and food insecurity efforts

Reconciling competing economic and environmental needs will require a sophisticated, multipronged approach and cooperation among the parties involved in the production, processing, and sale of palm oil. The palm oil industry is extremely lucrative, and countries in West Africa stand to gain millions of dollars in revenue from land sales. Therefore, while the environmental threat of palm oil is well established, it must be balanced against fundamental economic concerns.[88]

Current international responses

The current international effort to address the challenge posed by palm oil includes development programs, public-private partnerships, and a variety of policy proposals about how to manage the relationship between palm oil production and deforestation. A number of existing programs work to mitigate the environmental impact of palm oil production and support food security in West Africa. The Roundtable on Sustainable Palm Oil is the largest and most important effort to manage palm oil development and emphasizes limiting deforestation. In addition to organizations such as the Roundtable on Sustainable Palm Oil, there are many development initiatives currently underway in West Africa. Among these are several U.S. programs dedicated to supporting regional food security.

- *Roundtable on Sustainable Palm Oil.* The most influential organization dedicated to managing the ecological and human impact of palm oil production is the Roundtable on Sustainable Palm Oil (RSPO). RSPO was established in 2004 with the goal of fostering the production and use of sustainable palm oil products. The standard of sustainability used by RSPO is based on eight principles emphasizing transparent sourcing, financial viability of planting projects, and environmental responsibility.[89]

  Critics of RSPO note the influence exercised by multinational companies and the lack of enforcement mechanisms to ensure compliance with principles of sustainability. RSPO is industry-led, which allows palm oil companies to set their own standards for sustainable production, environmental regulation, and community outreach. Many—even most—of the major global players in the palm oil industry are members of RSPO. [90] Furthermore, RSPO's governing board includes numerous multinational palm oil production companies with lackluster environmental records, such as Wilmar.

  In 2017, RSPO certified 19 percent of global palm oil production as sustainable.[91] However, RSPO certification does not guarantee that a company's production is deforestation free. Moreover, there are serious problems with the RSPO guidelines as an effective tool for limiting the impact of palm oil production on local environments and communities.

- *Failure to make and meet sustainability commitments.* The allure of profits has significantly weakened current attempts by international organizations to regulate the environmental impact of palm oil production. In 2014, a study of the ten largest American food producers gave just one company—Nestlé—a positive score on its commitment to minimizing deforestation caused by palm oil production. Furthermore, the study found that even companies that had pledged to reduce deforestation had failed to make significant progress towards traceable and transparent sourcing.[92] A 2017 scorecard of 47 large brands headquartered in Malaysia and Singapore found that 70 percent had taken no steps towards sourcing sustainable palm oil.[93] Many efforts to rein in the environmental impacts of palm oil production, including the influential RSPO, rely heavily on self-reporting from multinational companies that is often difficult to verify.

- *Africa Palm Oil Initiative.* The Africa Palm Oil Initiative (APOI) was created by the Tropical Forest Alliance, a public-private partnership. Its stated goal is to support the development of palm oil production in West and Central Africa as a sustainable, low-carbon industry, while protecting the region's vast tropical forests. The APOI is currently working with ten countries in West and Central Africa, including Nigeria.[94] Although the APOI plan encompasses crucial efforts to support good governance, protect land use rights, and limit deforestation, it does not engage substantively with the food security threat posed by palm oil production in West Africa, nor does it require member countries to do so.

- *Feed the Future West Africa.* The West Africa Feed the Future program centers on three goals: increased agricultural productivity, improved regional trade, and enhanced institutional capacity. All three Feed the Future goals have direct implications for the Africa Palm Oil Initiative's program to support responsible development of oil palm in West Africa. Another USAID program, the Office of Food for Peace, is currently working with NGOs to provide food supplies, cash transfers, and vouchers to nearly 800,000 people in Northeastern Nigeria.[95]

- *Agricultural intensification.* Intensification proposals center on the idea that increasing yields from land already converted to palm oil plantations will limit the demand for new land. Proponents of agricultural intensification argue that it will inevitably reduce future forest loss, and this argument is frequently used to rebut criticism of unsustainable palm oil production techniques. Mitigating the transformation of new lands into plantations is crucial to preventing deforestation. Intensification caused by improvements in technology has been shown to be land-saving at the global level.[96] However, market-driven intensification generally leads to the expansion of cropland, as the high profitability of the good increases financial returns on newly converted lands. In Brazil, for example, a rapid increase in the production of soy has significantly contributed to deforestation. The rush of palm oil companies to West Africa is the result of market-driven intensification and is therefore unlikely to limit regional forest loss.[97]

Strengthening food security in West Africa

The powerful economic benefits of palm oil production in West Africa mean the expansion of palm oil plantations in the region is inevitable. However, fostering responsible palm oil production and combatting regional food insecurity is both possible and necessary. Safeguarding food security in palm oil producing regions necessitates a two-pronged approach. First, increasing smallholder production is a key piece of many efforts to improve food insecurity in West Africa. Second, respect for land rights is crucial to enabling West African land-owners and community members to realize the positive potential of palm oil production. Disputes over land rights have marred palm oil companies in Southeast Asia for decades. Preventing such conflicts in West Africa is vital to regional security. Together, improving smallholder production and strengthening land rights are crucial to ensuring responsible palm oil development and protecting food security in West Africa.

- *Smallholder production.* Supporting smallholder farmers must be the cornerstone of efforts to support food security and foster sustainable production. To remain productive, palm oil

trees must be replanted at maximum intervals of 30 years.[98] This growing timeline means that all existing palm oil plantations must be replanted by 2050.[99] However, replanting is prohibitively expensive for many smallholder farmers. Failure to replant increases pressure to deforest and encourages the use of slash-and-burn methods to clear new land for cultivation.[100]

Smallholder farming has several additional limitations as a potential method of mitigating the serious challenges posed by large-scale palm oil production in West Africa. Many smallholder farmers face considerable obstacles to trading with big companies, such as lack of respect for land ownership rights, little or no access to credit, vulnerability to price gouging, obstacles to market integration, and aging tree crops.[101] The combination of poor land rights and governance can lead smallholder farmers and other community members to feel exploited and excluded from the potential benefits of palm oil production. Finally, it is often costly and inefficient to integrate smallholders into sustainability programs.[102] Most smallholder farmers lack incentives to focus on environmental considerations and are instead focused on short-term goals.

- *Bolstering land rights.* Strengthening land rights is key not only to political stability and conflict resolution, but it also insulates smallholder farmers and communities from increased food insecurity. Clear land use rights incentivize farmers to invest in terraced fields, tree planting, high-quality fertilizer and other sustainable production practices by lengthening their planning horizons.[103] Farmers can help make their land rights more secure by formally documenting land transactions in writing and using other methods such as surveys or photographs to record land as their own.[104] International organizations such as the RSPO and the Africa Palm Oil Initiative can support the negotiation of collective agreements on the use of shared resources that empower communities to bargain more effectively with both their own governments and multinational palm oil companies.[105] In 2016, the GIS company Esri created maps of land and property rights for rural communities in Sierra Leone.[106] Clear delineation of property boundaries and respect for land rights is key to ensuring that West African communities are able to control their land and benefit appropriately from its sale.

Integrating environmental and food security programs

The United States already has a number of active food security and environmental initiatives in West Africa, including Feed the Future and the Africa Oil Palm Initiative (APOI). Feed the Future, APOI, and a number of similar programs work on separate but linked aspects of the threat posed by palm oil production in West Africa and have compatible goals.

Both Feed the Future and APOI are currently working in Nigeria. However, Feed the Future is primarily concerned with food insecurity in Nigeria's northern and northeastern regions. At the same time, APOI is working to foster cooperation between business and government leaders, civil society members, and private sector representatives in southern Nigeria.

Many countries have begun to push for a more coordinated approach to international development. The U.K. Department for International Development advocates the use of 'integrated development' programs that bring together different development sectors at work in a single region or community.[107] USAID already uses country development cooperation strategies to incorporate all US development efforts within a single country.[108] A larger scale version of the country development cooperation programs, along the lines of the U.K.'s integrated development approach, could be created to address palm oil production in West Africa.

With minimal cost, a council of U.S. agencies dedicated to addressing various facets of food insecurity and palm oil production in West Africa could be created. Many examples of similar councils already exist, such as the U.S. Interagency Council on Homelessness, which includes 19 federal agencies, as well as partner members from the private sector.[109] The creation of such a council would facilitate cooperation from programs housed in different agencies or branches and enable the U.S. to more effectively coordinate and deploy existing resources. Programs such as Feed the Future and APOI that are currently at work in different parts of Nigeria would be able to integrate their development methods and skills. Furthermore, the council could include partners such as non-governmental organizations and other groups invested in mitigating the environmental or food insecurity implications of palm oil production. The council would enable relevant U.S. agencies and organizations dedicated to the environment, combating poverty, and other challenges in West Africa to harmonize their efforts in the region.

Conclusion

Palm oil production poses a serious risk to West African environmental integrity, food security, and regional stability. The powerful economic incentives for palm oil production in Africa mean the proliferation of plantations is inevitable. Therefore, ensuring that this development takes place as sustainably as possible and that the benefits of production are shared with community members is crucial. Deforestation and other environmental impacts from palm oil plantations will negatively impact food security in a region that is already one of the world's most vulnerable.

If left unchecked, large-scale palm oil production will accelerate food insecurity in Nigeria, exacerbating domestic unrest and instability. Nigeria is already one of the world's most populous countries as well as an important regional power and a U.S. ally in the fight against extremist organizations in Africa. As Nigeria's population and economy continue to grow, a stable Nigeria will be increasingly important to regional and international security.

The United States currently commits significant resources to addressing food insecurity and environmental threats in West Africa. However, to respond more efficiently to the complex threat palm oil production poses, a council of relevant agencies should be created to enable interagency cooperation and foster sustainable growth that benefits the people of West Africa. Integrating development approaches is crucial to effective foreign aid and would allow U.S. agencies to energetically respond to the complex challenge of palm oil production in West Africa.

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