



Climate Change, Sub-Saharan Africa, and US National Security



American Security Project



Perspective

—
John Madeira

August 2019

BOARD OF DIRECTORS



The Honorable Gary Hart, Chairman Emeritus

Senator Hart served the State of Colorado in the U.S. Senate and was a member of the Committee on Armed Services during his tenure.



Governor Christine Todd Whitman, Chairperson

Christine Todd Whitman is the President of the Whitman Strategy Group, a consulting firm that specializes in energy and environmental issues.



Nelson W. Cunningham, President of ASP

Nelson Cunningham is President of McLarty Associates, the international strategic advisory firm headed by former White House Chief of Staff and Special Envoy for the Americas Thomas F. "Mack" McLarty, III.



Brigadier General Stephen A. Cheney, USMC (Ret.)

Brigadier General Cheney is the Chief Executive Officer of ASP.



Norman R. Augustine

Mr. Augustine was Chairman and Principal Officer of the American Red Cross for nine years and Chairman of the Council of the National Academy of Engineering.



Matthew Bergman

Matthew Bergman is an attorney, philanthropist and entrepreneur based in Seattle. He serves as a Trustee of Reed College on the Board of Visitors of Lewis & Clark Law School.



Ambassador Jeffrey Bleich

The Hon. Jeffery Bleich heads the Global Practice for Munger, Tolles & Olson. He served as the U.S. Ambassador to Australia from 2009 to 2013. He previously served in the Clinton Administration.



Alejandro Brito

Alejandro Brito is President of Brito Development Group (BDG), LLP. In the last twenty years, Mr. Brito has overseen the design, construction, development and management of over 1,500 luxury housing units in Puerto Rico.



The Honorable Donald Beyer

Congressman Donald Beyer is the former United States Ambassador to Switzerland and Liechtenstein, as well as a former Lieutenant Governor and President of the Senate of Virginia.



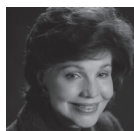
Lieutenant General Daniel Christman, USA (Ret.)

Lieutenant General Christman is Senior Vice President for International Affairs at the United States Chamber of Commerce.



Robert B. Crowe

Robert B. Crowe is a Partner of Nelson Mullins Riley & Scarborough in its Boston and Washington, DC offices. He is co-chair of the firm's Government Relations practice.



Lee Cullum

Lee Cullum, at one time a commentator on the PBS NewsHour and "All Things Considered" on NPR, currently contributes to the Dallas Morning News and hosts "CEO."



Nicholas Clark

Nicholas Clark is the former CEO and Executive Director of Alexium International. He is also co-founder and Managing Partner at Viaticus Capital.



Admiral William Fallon, USN (Ret.)

Admiral Fallon has led U.S. and Allied forces and played a leadership role in military and diplomatic matters at the highest levels of the U.S. government.



Scott Gilbert

Scott Gilbert is a Partner of Gilbert LLP and Managing Director of Reneo LLC.



Vice Admiral Lee Gunn, USN (Ret.)

Vice Admiral Gunn is the President of the Institute of Public Research at the CNA Corporation, a non-profit corporation in Virginia.



The Honorable Chuck Hagel

Chuck Hagel served as the 24th U.S. Secretary of Defense and served two terms in the United States Senate (1997-2009). Hagel was a senior member of the Senate Foreign Relations; Banking, Housing and Urban Affairs; and Intelligence Committees.



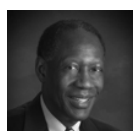
Lieutenant General Claudia Kennedy, USA (Ret.)

Lieutenant General Kennedy was the first woman to achieve the rank of three-star general in the United States Army.



The Honorable John F. Kerry

John Kerry is a distinguished fellow for global affairs at Yale University. In 2013, Kerry was sworn in as the 68th secretary of state of the United States. Kerry served for more than twenty-five years as a U.S. senator from Massachusetts.



General Lester L. Lyles, USAF (Ret.)

General Lyles retired from the United States Air Force after a distinguished 35 year career. He is presently Chairman of USAA, a member of the Defense Science Board, and a member of the President's Intelligence Advisory Board.



Dennis Mehiel

Dennis Mehiel is the Principal Shareholder and Chairman of U.S. Corrugated, Inc.



Stuart Piltsch

Stuart Piltsch is the Co-Founder and Managing Director of Cambridge Advisory Group, an actuarial and benefits consulting firm based in Philadelphia.



Ed Reilly

Edward Reilly is Global Chief Executive Officer of the Strategic Communications practice of FTI Consulting.



LtGen Norman Seip, USAF (Ret)

Lieutenant General Norman R. Seip, USAF (Ret) served in the Air Force for 35 years. His last assignment was Commander of 12th Air Force.



David Wade

David Wade is a consultant helping global corporations and organizations with strategic advice, public affairs and thought leadership, crisis communications, political intelligence gathering, and federal and legislative strategy.

In this Report:

Over the next century, states in Sub-Saharan Africa will become major players in the global community. As climate change continues to take a toll on the Earth, how Sub-Saharan African states handle the effects of climate change will help determine the future of the continent.

This report explores the effects of climate change on Sub-Saharan Africa and how it impacts US national security. Specifically, the report examines the impact of climate change on water availability, agricultural production, rural to urban migration, and how those effects threaten US national security by potentially derailing a promising future, benefitting terrorist organizations, and fueling ethnic conflict.

Interact:

Join our discussion on Twitter with #ASPClimateSecurity

Discuss climate change, Africa, and US national security with author @Madeira_JohnM

Learn more about ASP at @amsecproject

IN BRIEF

- Despite the political charge climate change carries in the US, the international scientific community has proven the science behind climate change time and again.
- Climate change is not just a “green” issue, but an issue of US and international security. The environment and climate change have appeared in US national security and defense documents for decades.
- Climate change will have a large impact on Sub-Saharan Africa. Nine of the ten most climate change vulnerable states are in Sub-Saharan Africa.
- Climate change will add stress to water availability, negatively impact agricultural production, and increase rural to urban migration. These changes can lead to instability.
- Instability can derail a promising economic future for Sub-Saharan Africa, strengthen terrorist organizations, and play a role in fueling ethnic conflict.

About the Author

John Madeira is a second-year graduate student at the Pennsylvania State University's School of International Affairs. In May 2020, John will graduate with a Masters of International Affairs degree that focuses on Africa studies and non-traditional security threats, such as climate change and health security.

Introduction

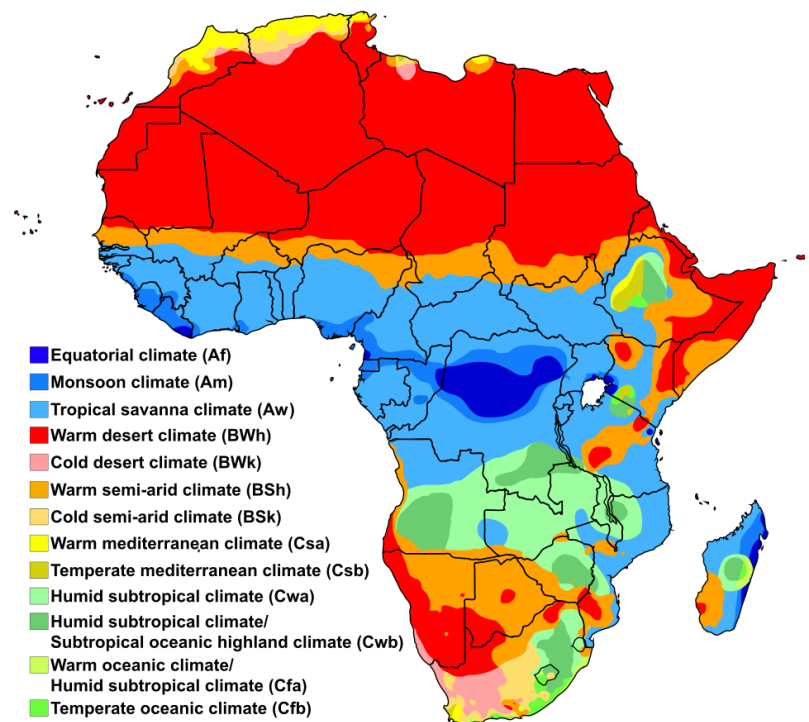
More than thirty years ago, the Intergovernmental Panel on Climate Change (IPCC) – an intergovernmental body within the United Nations system – was formed. The IPCC publishes reports that contribute to the work of the United Nations Framework Convention on Climate Change, the main international treaty on climate change.

According to the most recent IPCC report, the Fifth Assessment Report, Africa is expected to be subjected to some of the most severe consequences of climate change. The report states that temperatures in Africa are expected to rise faster than the global average increase for the 21st century.¹ The report also predicts mean annual precipitation will decrease in southern Africa but increase in central and Eastern Africa.²

Climate change is more than just science, it is a national security issue. Climate change harms US national security in several ways. Domestically, symptoms of climate change such as extreme heat, sea level rise, and floods are a detriment to force readiness by threatening military infrastructure and training schedules. Internationally, negative effects of climate change, including land degradation, changing rainfall patterns, and an increase in extreme weather events drive competition for land resources and contribute to conflict.

In January 2019, the US Intelligence Community (IC) issued a Worldwide Threat Assessment that identified a wide range of threats. The report stated, “Global environmental and ecological degradation, as well as climate change, are likely to fuel competition for resources, economic distress, and social discontent through 2019 and beyond. Climate hazards such as extreme weather, higher temperatures, droughts, floods, wildfires, storms, sea level rise, soil degradation, and acidifying oceans are intensifying, threatening infrastructure, health, and water and food security. Irreversible damage to ecosystems and habitats will undermine the economic benefits they provide, worsened by air, soil, water, and marine pollution.”³

Africa map of Köppen climate classification



The various climates of Africa. Source: [Wikimedia Commons](#)

Sub-Saharan Africa is one of the most vulnerable regions in the world to climate change, which makes it important to US national security interests. According to the Climate Vulnerability Index, nine of the ten most climate change vulnerable states are in Sub-Saharan Africa: Burundi, the Democratic Republic of Congo (DRC), Congo, Madagascar, Guinea, Liberia, South Sudan, Central African Republic, and Sierra Leone.⁴

Climate Change & Instability

Given the variety of climatic zones in Africa, the effects of climate change are not uniform across the entire continent. Some important consequences of climate change in Sub-Saharan Africa include increased stress on water availability, reduced agricultural production and food insecurity, and rural to urban migration. These effects contribute to instability, which creates security concerns for the US. Climate change is not likely to directly lead to conflict, but rather exacerbate existing issues that can create conflict and instability.

Stress on Water Availability

Land use, water withdrawals, hydrological characteristics, and natural climate variability can have significant impacts on water availability even without the effects of human-driven climate change taken into consideration.⁵ Factors such as population growth, urbanization, agriculture, and land use change will have serious negative impacts on water availability and those impacts will be magnified by climate change.⁶ Assumptions about the impact of climate change on water availability across the entire continent can be difficult, but specific predictions can be made more confidently. For example, in Southern Africa, countries in the Zambezi River Basin could see climate change play a role in future water shortages, although other non-climate factors will also play a significant role.⁷ In Zimbabwe, climate change is expected to increase water shortages for people downstream of the Rova Dam. Other areas expected to experience water shortages include the Okavango Delta and Breede river in South Africa.⁸

Adding climate change to the list of contributors to diminishing water availability will only exacerbate the problem and add more stress to communities. As one of the primary drivers of conflict, reduction in water availability could create or worsen existing conflict. Declining water availability is also important because of the key role it plays in development projects and on agriculture.

Agricultural Production

Agricultural production is one of the areas most heavily affected by climate change. Agriculture plays a leading role in supporting the rural population and driving economic growth. According to the World Bank, agriculture accounts for 54% of male employment⁹ and 55% of female employment¹⁰ in Sub-Saharan Africa. 60% of the population lives in rural areas¹¹ and 85% of the population depends on rain-fed agriculture and other agricultural-based rural activities.¹² In 2017, climate sensitive industries (agriculture, forestry, and fishing) accounted for more than 15% of the GDP in Sub-Saharan Africa; substantially larger than the world average of 3.4% for 2017.¹³

Consequences of climate change, including increased temperature, changes in precipitation, changes in rainfall variability, and more frequent extreme weather events can have significant impacts on agricultural production. Because of climate change, total land area suitable for agriculture, the length of the growing season, and crop yield potential are expected to decrease.¹⁴ Decreases in agricultural output will have significant impacts on both human security and economic growth by causing food insecurity. According to the Food and Agriculture Organization, the impacts of climate change will affect all four components of food security – food availability, food access, utilization, and stability. Food insecurity plays a role in driving instability as it acts as a “threat and impact multiplier for violent conflict.”¹⁵

Rural to Urban Migration

As climate change affects agricultural production, it will also impact rural to urban migration. At the EU-Africa Alliance in Agriculture event in January 2019, FAO Director-General José Graziano da Silva said, “In Africa, we need to invest in rural development aimed at creating jobs and opportunities for young people to remain in rural areas. We need youth for modern agriculture.”¹⁶ As agricultural production diminishes because of climate change, farmers and youth could look towards manufacturing and move into cities.

Sub-Saharan African cities are some of the fastest growing cities in the world. Cities have grown at an average rate of four percent for the last two decades¹⁷ and by 2100, five of the ten most populous countries in the world could be in Africa.¹⁸ As of 2014, Africa had nearly 350 million people living in cities, but two-thirds of the population still lived in rural settings.¹⁹ Climate change can drive rural populations to cities, especially when those cities are likely to be manufacturing centers.²⁰ In those regions, migration into cities provides an escape from an agrarian livelihood that is impacted by climate change.

As Africa’s economy modernizes and manufacturing expands, more rural populations suffering from the effects of climate change could move towards cities that become manufacturing hubs, even if the living conditions in cities are poor. Africa’s urban population reports some of the highest levels of fear and violence in the world, while also experiencing a growing number of residents living in urban slums.²¹ The rapid levels of urbanization is making it challenging for cities to offer public services, employment, and basic security.²² When public services, jobs, and security become scarce, the consequences can include an increase in political and social instability. If job creation cannot keep up with climate-driven urbanization on top of already occurring urbanization, it will only compound socio-economic issues like unemployment.

Instability in Africa & Effects on US National Security

The effects of climate change are unlikely to lead directly to conflict, but climate change can exacerbate pre-existing conditions which can lead to conflict. Climate change contributes to instability in Sub-Saharan Africa, which has several adverse effects on US national security. Instability can derail a potentially promising future for the region, benefit the numerous terrorist organizations operating in Sub-Saharan Africa, and fuel ethnic conflict and human displacement.

Africa’s Promising Future

Over the course of the next few decades, Africa will undergo drastic demographic and economic changes. By the end of the century, nearly 40% of the world’s population will be African.²³ The demographics of the continent are also trending younger, a phenomenon known as a “youth boom” or “youth bulge.”²⁴

While drastic demographic changes will occur, perhaps the largest transformation in Africa will be economic. By the end of May 2019, enough African states had ratified the African Continental Free Trade Agreement (AfCFTA) to push the pan-African free trade market into effect. 54 of the 55 African states have agreed to AfCFTA, which will cover more than 1.3 billion people, create a \$3.4 trillion economic bloc, and bring about a new age of development across Africa.²⁵

As the demographic profile of Africa changes, the continent could find itself in a position to reap the rewards of the demographic dividend. Declining fertility and mortality rates will lead to a working-age population growth at a time when most advanced economies are facing an aging working population. Africa's share of the global working-age population is expected to increase from 12.6 percent in 2010 to more than 41 percent by 2100.²⁶

But demographic changes do not guarantee economic growth, especially if climate change is not addressed. Rising temperatures

will impact worker productivity and affect numerous sectors, including agriculture, mining, oil, gas, and manufacturing.²⁷ Temperature increases, coupled with urbanization and a growing population, will also put a strain on electrical infrastructure due to demand for air conditioning. Between 2026 and 2045 companies in Africa will face increasing operational costs due to a spike in energy demand and risks of power outages.²⁸



The “youth bulge” will be key to determining the future of Africa. USAID Photo.

Terrorism in Africa

The Middle East has dominated the discussion surrounding terrorism in the aftermath 9/11, but Sub-Saharan Africa has also become a stronghold for terrorism. The IC's Worldwide Threat Assessment states, “Terrorism too will continue to be a top threat to US and partner interests worldwide, particularly in Sub-Saharan Africa, the Middle East, South Asia, and Southeast Asia,”²⁹ and “Global jihadist groups in parts of Africa and Asia in the last year have expanded their abilities to strike local US interests, stoke insurgencies, and foster like-minded networks in neighboring countries.”³⁰

According to the 2017 Global Terrorism Index, three of the four most deadly global terrorist organizations are active in Africa. The deadliest organization - The Islamic State of Iraq and the Levant (ISIL) - is headquartered in the Middle East but is active in Algeria, Burkina Faso, Cameroon, Chad, Niger, Nigeria, and Somalia.³¹ The second deadliest group is Boko Haram, which operates in Cameroon, Chad, Niger, and Nigeria. Boko Haram's 192 violent incidents in 2017 accounted for more than 1,000 deaths and 1,100 injuries in Africa.³² Finally, the fourth³³ most dangerous terrorist group is al-Qaeda. In 2017, al-Qaeda attacks in Sub-Saharan Africa occurred in Burkina Faso, Cote D'Ivoire, Kenya, Mali, Niger, Somalia, and Uganda.³⁴

The effects of climate change have already benefitted two different terrorist groups in the Sahel region. First, in Mali, the Front de Libération du Macina (FLM) preys on existing grievances between ethnic groups over land access to recruit members of the Fulani ethnic group - a majority Muslim group of nomadic or semi-nomadic herders.

Tensions between the Fulani and sedentary farmers in the region have traditionally been peaceful, but as access to usable land has diminished, competition between the farmers and herders has grown more violent. The FLM has exploited these grievances in Mali to recruit by using ethnic and religious narratives.³⁵ FLM is a relatively lesser-known organization but has stated goals similar to the al-Qaeda branch that is active in the region, al-Qaeda in the Islamic Maghreb.³⁶

Fulani attacks are not limited to just Mali. In Nigeria, Fulani herders were responsible for 450 recorded attacks between 2010 and 2016 that resulted in more than 2,800 deaths.³⁷ The root of the conflict between the Fulani and farmers in Nigeria lies in climate-driven land degradation and increased violence in the north, which forces herders to move south.³⁸

Second, in the Lake Chad Basin, climate change has also played a role in conflict and aided terrorist recruitment. The Basin, which borders Nigeria, Niger, Chad, and Cameroon, has been a stronghold for the Islamic State West African Province (ISWAP) and Boko Haram. Irregular rains and rising temperatures have spurred conflict by causing food shortages and frustration, while the fighting has made it more difficult for people to deal with climate change.³⁹ In order to secure their position in the region ISWAP has attempted to win over the people by offering protection for herders seeking grazing lands, digging wells, and giving out seeds.⁴⁰

On the other side of the continent, the al-Qaeda aligned group al-Shabaab has taken root in the Horn of Africa in opposition to a struggling Somali government. In Somalia, – where a weak central government and conflict-ridden society has been the norm – about 70% of the Somali people depend heavily on regular climactic patterns

to meet their basic needs.⁴¹ Consequences of climate change, most notably famine and food insecurity, have aided al-Shabaab's recruitment of young people who join the group in order to survive.⁴²

Terrorism is also expanding out of the Sahel and Horn of Africa. In April 2019, ISIL claimed their first attack in the DRC, killing eight soldiers.⁴³

International state sponsors of terrorism are also moving into Sub-Saharan Africa. In June 2019, Western security officials reported that Iran was setting up a “network of terror cells in Africa to attack US and other Western targets in retaliation for Washington's decision to



Members of the Combined Joint Task Force Horn of Africa train to combat extremism in East Africa. DoD Photo.

impose sanctions against Tehran.”⁴⁴ The network of terror cells was established on the orders of the head of the Quds Force, the elite group of Iran's Revolutionary Guard Corps, to attack US and Western targets in Sudan, Chad, Ghana, Niger, Gambia, and the Central African Republic.⁴⁵

As the US continues to fight the Global War on Terror, Africa will likely remain a key theater for US military operations. Climate change has already played a major role in aiding terrorist recruitment and it will only compound the growing terrorist threat in Africa.

Ethnic Conflict in Africa

Similar to how climate change benefits terrorist organizations, the primary way climate change will play a role in ethnic conflict is by reducing the amount of usable land for farming and herding communities.

A prime example of climate-driven land degradation contributing to conflict is in the Sahel, particularly in Mali. One of the reasons FLM has been so successful in recruiting in Mali is because of the conflict between the Dogon and Fulani ethnic groups. Conflict between the two groups has stemmed from land access issues, specifically accusations that the Fulani cattle have destroyed Dogon farms. The destruction of farmland is becoming more and more important as the amount of land and water available for farming or grazing diminishes because of climate change. Climate change has caused the grasslands of the Sahel to recede almost a mile per year⁴⁶, which has led to higher levels of competition. This conflict between the Fulani and Dogon in Mali is important to US national security because it creates grievances and opportunities that terrorist organizations can exploit to recruit and put down roots.

In the DRC, conflict between the Hema and Lendu ethnic groups in the northeastern Ituri province is rampant, and climate change has not been a major contributor – yet. In Ituri province, conflict between the Hema, traditionally herders, and the Lendu, traditionally farmers, has been on-and-off for decades.

In the DRC, agriculture is a central part of the economy and the primary source of livelihood for many Congolese as it accounts for 40% of GDP and employs 70% of the population.⁴⁷ However, climate stressors such as rising temperatures, rainfall variability, prolonged dry spells, or more frequent extreme weather events are predicted to undermine agricultural production in the DRC.⁴⁸ As climate change increases the agricultural vulnerabilities within the DRC, especially in Ituri province where there is conflict between the Hema and Lendu, competition for land could lead to more violence. Already, the conflict between the Hema and Lendu has caused mass levels of migration as more than 300,000 people have been forced to flee due to the resurgence of conflict.⁴⁹

Human displacement at this level is a threat to US national security. According to the IC's Worldwide Treat Assessment, "Global displacement almost certainly will remain near record highs, and host countries are unlikely to see many refugees or internally displaced persons return home, increasing humanitarian needs and the risk of political upheaval, health crises, and recruitment and radicalization by militant groups."⁵⁰

Conclusion

Africa is a large continent - stretching from the Mediterranean down past the Tropic of Capricorn. Given the size and positioning of the continent, climate change will affect the regions of Africa differently. However, three ways climate change is impacting Sub-Saharan Africa is by reducing water availability, harming agriculture, and contributing to rural to urban migration. Climate change will amplify already existing stressors to water availability, negatively affect agriculture by reducing the total amount of land available for agricultural purposes, and contribute to already high levels of rural to urban migration.

While the effects of climate change will most likely not lead to conflict directly, they can exacerbate underlying conditions that lead to conflict. Conflict and instability in Sub-Saharan Africa have a chance to destabilize the region, which poses a threat to US national security. Africa has the potential for a prosperous future, but the negative effects of climate change may derail that future, benefit terrorist organizations by allowing them to exploit conflict to recruit, and contribute to ethnic conflicts that create large levels of human displacement.

Endnotes

1. Intergovernmental Panel on Climate Change. “AR5 Climate Change 2014: Impacts, Adaptation, and Vulnerability.” 2014. https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap22_FINAL.pdf p. 1206. Accessed June 26, 2019.
2. https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap22_FINAL.pdf. Ibid, p. 1210
3. Office of the Director of National Intelligence. “Worldwide Threat Assessment of the US Intelligence Community.” January 29, 2019. <https://www.dni.gov/files/ODNI/documents/2019-ATA-SFR---SSCI.pdf> p. 23. Accessed June 26 2019.
4. Nugent, Ciara. “The 10 Countries Most Vulnerable to Climate Change Will Experience Population Booms in the Coming Decades.” *TIME*. July 11, 2019. <https://time.com/5621885/climate-change-population-growth/>. Accessed July 22, 2019.
5. Intergovernmental Panel on Climate Change. “AR5 Climate Change 2014: Impacts, Adaptation, and Vulnerability.” 2014. https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap22_FINAL.pdf p. 1217. Accessed July 1, 2019.
6. Intergovernmental Panel on Climate Change, p. 1217.
7. Ibid.
8. Ibid.
9. World Bank Group. “Employment in agriculture, male (% of male employment) (modeled ILO estimate).” 2018. <https://data.worldbank.org/indicator/SL.AGR.EMPL.MA.ZS?view=chart>. Accessed June 27, 2019.
10. World Bank Group. “Employment in agriculture, female (% of female employment) (modeled ILO estimate).” 2018. <https://data.worldbank.org/indicator/SL.AGR.EMPL.FE.ZS>. Accessed June 27, 2019.
11. World Bank Group. “Rural population (% of total population).” 2017. <https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?view=chart>. Accessed June 27, 2019.
12. Kotirm Julius H. “Climate change and variability in Sub-Saharan Arica: a review of current and future trends and impacts on agriculture and food security.” *Environmental Development and Sustainability*. https://www.researchgate.net/publication/226269932_Climate_change_and_variability_in_Sub-Saharan_Africa_A_review_of_current_and_future_trends_and_impacts_on_agriculture_and_food_security, p. 589. Accessed June 27, 2019.
13. World Bank Group. “Agriculture, forestry, and fishing, value added (% of GDP).” 2017. <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?view=chart>. Accessed July 9, 2019.
14. Kotirm, p. 587.
15. Brinkman, Henk-Jan and Hendrix, Cullen S. “Food Insecurity and Violent Conflict: Causes, Consequences, and Addressing the Challenges.” *World Food Programme*. July 2011. https://documents.wfp.org/stellent/groups/public/documents/newsroom/wfp238358.pdf?_ga=2.170862627.2042524635.1562692886-1009497414.1562692886. p. 2. Accessed July 9, 2019.
16. Food and Agriculture Organization of the United Nations. “In Africa, investing in rural development and agriculture will offer rural youth an alternative to migration.” January 18, 2019. <http://www.fao.org/news/story/en/item/1177305/icode/>. Accessed June 27, 2019.
17. Henderson, J. Vernon, Storeygard, Adam and Deichmann, Uwe. “Has climate change driven urbanization in Africa?” *Journal of Economic Development*. January 2017. <https://www.sciencedirect.com/science/article/pii/S0304387816300670>, p. 60. Accessed July 1, 2019.
18. Gramlich, John. “For World Population Day, a look at the countries with the biggest projected gains – and losses – by 2100.” *Pew Research Center*. July 10, 2019. <https://www.pewresearch.org/fact-tank/2019/07/10/for-world-population-day-a-look-at-the-countries-with-the-biggest-projected-gains-and-losses-by-2100/>. Accessed July 11, 2019.
19. Henderson, p. 60.
20. Ibid.
21. Commins, Stephen. “From Urban Fragility to Urban Stability.” *Africa Center for Strategic Studies*. June 12, 2018. <https://africacenter.org/publication/from-urban-fragility-to-urban-stability/>. Accessed July 8, 2019.
22. Ibid.
23. Rickman, Ari and Booker, Salih. “The future is African – and the United States is not prepared.” *The Washington Post*. June 6, 2018. https://www.washingtonpost.com/news/democracy-post/wp/2018/06/09/the-future-is-african-and-the-united-states-is-not-prepared/?utm_term=.3b621d6abfda, Accessed July 1, 2019.

24. Fleischman, Janet. "Demographic Trends and Youth Empowerment in Africa." *Center for Strategic and International Studies*. June 26, 2019. <https://www.csis.org/analysis/demographic-trends-and-youth-empowerment-africa>. Accessed July 29, 2019.
25. "African leader launch landmark 55-nation trade zone." *DW*. July 7, 2019. <https://www.dw.com/en/african-leaders-launch-landmark-55-nation-trade-zone/a-49503393>. Accessed July 8, 2019.
26. Drummond, Paulo, Thakoor, Vimal and Yu, Shu. "Africa Rising: Harnessing the Demographic Divided." . *International Monetary Fund*. August 2014. <https://www.imf.org/external/pubs/ft/wp/2014/wp14143.pdf>. p. 4. Accessed July 1, 2019.
27. Dahir, Abdi Latif. "Rising global temperatures will cool Africa's economic growth than anywhere else." *Quartz Africa*. August 2, 2018. <https://qz.com/africa/1346715/rising-temperatures-to-slow-africa-economic-growth/>. Accessed July 9, 2019.
28. Ibid.
29. Office of the Director of National Intelligence, p. 4
30. Office of the Director of National Intelligence, p. 11
31. Institute for Economics and Peace. "Global Terrorism Index 2017." <http://visionofhumanity.org/app/uploads/2017/11/Global-Terrorism-Index-2017.pdf>. p. 73. Accessed July 1, 2019.
32. Institute for Economics and Peace, p. 74.
33. The third deadliest group according to the report is the Taliban, which is active in Afghanistan and Pakistan.
34. Institute for Economics and Peace, p. 75.
35. Institute for Economics and Peace, p. 76.
36. Ibid.
37. Ibid.
38. "Stopping Nigeria's Spiraling Farmer-Herder Violence". *International Crisis Group*. July 26, 2018. <https://www.crisisgroup.org/africa/west-africa/nigeria/262-stopping-nigerias-spiralling-farmer-herder-violence>. Accessed July 22, 2019.
39. Peyton, Nellie. "Climate change pushes farmers to 'tipping point' in Lake Chad crisis." *Thompson Reuters Foundation*. May 15, 2019. <http://news.trust.org/item/20190515174236-28kl1/>. Accessed July 1, 2019.
40. Ibid.
41. Kuele, Giovanna and Miola, Cristina. "Climate change is feeding armed conflict in Somalia." *Institute for Security Studies*. April 6, 2018.
42. Ibid.
43. Wembi, Steve and Goldstein, Joseph. "ISIS Claims First Attack in the Democratic Republic of Congo." *The New York Times*. April 19, 2019. <https://www.nytimes.com/2019/04/19/world/africa/isis-congo-attack.html>. Accessed July 1, 2019. <https://issafrica.org/iss-today/climate-change-is-feeding-armed-conflict-in-somalia>. Accessed July 2, 2019.
44. Coughlin, Con. "Tehran sets up terror cells in Africa as Western sanctions bite." *The Telegraph*. June 24, 2019. https://www.telegraph.co.uk/news/2019/06/24/tehran-sets-terror-cells-africa-western-sanctions-bite/?utm_source=In+Case+Yo+Missed+It&utm_campaign=4d4910cac1-EMAIL_CAMPAIGN_2019_06_24_02_54&utm_medium=email&utm_term=0_46caece17e-4d4910cac1-242779353&mc_cid=4d4910cac1&mc_eid=91343f06e6. Accessed July 1, 2019.
45. Ibid.
46. US Senate Committee on Armed Services. "Hearing on the US Central Command and US Africa Command in review of the Defense Authorization Request for Fiscal year 2019." March 13, 2018. <https://www.armed-services.senate.gov/hearings/18-03-13-united-states-central-command-and-united-states-africa-command>. Accessed July 9, 2019.
47. USAID. "Climate Risk Profile: Democratic Republic of Congo." July 2018. https://www.climatelinks.org/sites/default/files/asset/document/20180716_USAID-ATLAS_Climate-Risk-Profile_DRC.pdf. p. 3. Accessed July 10, 2019.
48. USAID. "Climate Risk Profile: Democratic Republic of Congo." July 2018. https://www.climatelinks.org/sites/default/files/asset/document/20180716_USAID-ATLAS_Climate-Risk-Profile_DRC.pdf. p. 3. Accessed July 10, 2019.
49. "300,000 flee flare-up of ethnic violence in north-eastern DR Congo." *UN News*. June 18, 2019. <https://news.un.org/en/story/2019/06/1040711>. Accessed July 10, 2019.
50. Office of the Director of National Intelligence, p. 22

The American Security Project (ASP) is a nonpartisan organization created to educate the American public and the world about the changing nature of national security in the 21st Century.

Gone are the days when a nation's security could be measured by bombers and battleships. Security in this new era requires harnessing all of America's strengths: the force of our diplomacy; the might of our military; the vigor and competitiveness of our economy; and the power of our ideals.

We believe that America must lead in the pursuit of our common goals and shared security. We must confront international challenges with our partners and with all the tools at our disposal and address emerging problems before they become security crises. And to do this we must forge a bipartisan consensus here at home.

ASP brings together prominent American business leaders, former members of Congress, retired military flag officers, and prominent former government officials. ASP conducts research on a broad range of issues and engages and empowers the American public by taking its findings directly to them via events, traditional & new media, meetings, and publications.

We live in a time when the threats to our security are as complex and diverse as terrorism, nuclear proliferation, climate change, energy challenges, and our economic wellbeing. Partisan bickering and age old solutions simply won't solve our problems. America – and the world - needs an honest dialogue about security that is as robust as it is realistic.

ASP exists to promote that dialogue, to forge that consensus, and to spur constructive action so that America meets the challenges to its security while seizing the opportunities that abound.



American Security Project

www.americansecurityproject.org