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Claremont McKenna College

**A Hot Conflict Growing Ever Hotter:
How Climate Change Provokes Instances of Violence in South Sudan**

Submitted to

Professor Peter Uvin

By

Madison Clare Menard

For Senior Thesis

Fall 2021

"القوة السياسية تنبع من فوهة البندقية". ماو تسي تونغ

"Political power grows out of the barrel of a gun."

Mao Zedong

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Abstract

In South Sudan, people are not engaging in violent altercations because of climate change. People are not deciding to kill other people because the average temperature of the world has risen 1 degree celsius, or harming their neighbor because of irregular rain patterns. Alas the link from climate change to violence is not as direct as that. Rather, climate change has played a non-direct role in the South Sudanese conflict. Within the political marketplace it has subtly altered conditions which later spark or intensify outbreaks of violence. Climate change in this sense should be viewed as a stressor of sorts rather than a direct cause of violence. As will be described in the first section, climate change places increased stress on the security of food, health, shelter, and the economy. The increased lack of accessibility combined with the preexisting political and ethnic tensions that exist in South Sudan's political marketplace has led to an exacerbation of violence in the region; this is unlikely to end given the hopeless outlook for both climate change resolutions and the deeply rooted predisposition to violence which South Sudan has had since its birth as a nation.

Introduction

For centuries, generals and political leaders have considered wars and mass violence to be the most extreme threat to national security. As the world has modernized, this sentiment slowly seems to be slipping away, especially in light of public sentiment surrounding the threat of climate change, which very well may become another existential threat should humanity not change its harmful practices. However, just because one beast rises does not mean the original monster disappears. In this case, the original monster, war and violence, may actually become stronger with the additions of the new beast, climate change. This is an interesting argument to consider, and it makes sense that climate change could create ideal political, economic, and social instability that could fuel instances of violence around the world.

The topic of climate change has become a hot topic in global politics and media. Climate change is the local, regional, or global change in average weather that subsequently has impacts on the world's biotic and abiotic factors within ecosystems over time. According to NASA, "Climate... refers to the long-term regional or even global average of temperature, humidity and rainfall patterns over seasons, years or decades".¹ Climate change includes global warming, which is the gradual increase in average temperature in a region over time.

The gradual change in global temperatures has been driven largely by anthropogenic practices including emissions from industries, alterations to natural habitats, and agricultural practices. As humans continue to alter Earth's climate, countries are forced to adapt to their ever-changing climates. Climate change interrupts economic and agricultural practices in

¹ Dunbar, Brian. "What Is Climate Change?" *NASA*, NASA, 13 May 2015, <https://www.nasa.gov/audience/forstudents/k-4/stories/nasa-knows/what-is-climate-change-k4.html>.

particular, leading to increased strain on political, economic, and social systems that are not equipped to deal with the drier temperatures, increased natural disasters, and harsher seasons. Climate change effectively provides an ever looming backdrop to the other political, economic, and social issues which governments and countries are also confronted with.

One such issue confronting governments around the world is violence. For the purpose of this paper, violence will be defined according to the World Health Organization's definition, stating that violence is, "The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation". The acts of violence that are especially concerning to governments and political leaders are those in which multiple people are killed as the result of economic, ethnic, social, or political differences and disagreements, and include wars, terror attacks, ethnic cleansings, genocides, and crimes against humanity. These instances are highly covered by media sources, making them readily accessible for civilian consumers of information and subject to rapid dissemination.

How can we measure climate change's influence on violence? Some countries have more violent incidents while others seem to be at peace. With this in mind, it is better to study the influence of climate change on violence on a region by region or country by country basis. This allows for an accurate representation of climate change's impact on the respective country without being overwhelmed by data from other countries with dissimilar attributes. South Sudan has been selected as the country of interest for this study, but why? It is because South Sudan is a country that has not only experienced high levels of violence in the past decade but has also

experienced several instances of extreme natural disaster driven by global climate change.

Although the civil war has been prominently featured in international media since its beginning in 2013, instances of extreme drought and flooding are less common in news sources, but precipitates political, economic, and social tensions which have fueled the past decade of violence in the young country.

This paper aims to identify just how strong the relationship between climate change and violence is in South Sudan. It begins in section 1, which provides background on climate change globally, in Africa, and in South Sudan specifically. Section 2 provides insight into South Sudan's political history of violence. Section 3, on the political theory of violence in Africa, is included to help describe the nature of the violence and the indirect nature of climate change's effect on violence. Finally, section 4 examines the strength of the observed relationship between climate change and violence, both political and ethnic, in South Sudan.

Ultimately, the conclusion is that in South Sudan, people are not engaging in violent altercations *because* of climate change. People are not deciding to kill other people because of a rise in the average temperature of the world or because of irregular rain patterns. The link from climate change to violence is not as direct as that. Rather, climate change plays a non-direct role in South Sudanese conflict, subtly altering conditions which later spark or intensify outbreaks of violence. Climate change in this sense should be viewed as a powerful and significant stressor rather than a direct cause of violence.

Climate Change: A Global and Regional Threat

Climate change is the local, regional, or global change in average weather that subsequently can have impacts on biotic and abiotic factors within ecosystems over time. According to NASA, “Climate... refers to the long-term regional or even global average of temperature, humidity and rainfall patterns over seasons, years or decades”.² Using resources such as ice cores and tree rings, scientists have been able to reconstruct what the climate was like thousands of years ago. The earliest records of the earth’s climate go all the way to 800,000 years in the past.³ NASA’s and the National Oceanic and Atmospheric Administration’s (NOAA) charts tracking global climate changes, including average surface temperature, average precipitation, and sea levels, show great changes to each of those factors beginning in the 1800’s.⁴ While these changes were previously driven by natural causes, they have been accelerated by an increase in human development which has subsequently led to an increase in the size of the post-industrial revolution human population.

² Dunbar, Brian. “What Is Climate Change?”

³ Dahlman, Rebecca Lindsey and LuAnn. “Climate Change: Global Temperature.” *Climate Change: Global Temperature* | NOAA Climate.gov, 15 Mar. 2021, <https://www.climate.gov/news-features/understanding-climate/climate-change-global-temperature>.

⁴ Dahlman, Rebecca Lindsey and LuAnn. “Climate Change: Global Temperature.”

It is important to note that the definition of climate change does not include harm done to the environment by humans. In other words, if the damage does not affect average weather patterns, then it cannot be called climate change. Such damages would be better suited under the definition of environmental degradation, which encompasses environmental threats and systems which harm the environment but do not contribute to climate change.⁵ Examples of environmental degradation that do not affect weather patterns include industrial pollution, overuse of resources, and use of harmful pesticides on crops. Compared to climate change, environmental degradation is only caused by anthropogenic causes.

Since the industrial revolution, the climate has been changing at an accelerated rate because modern machines release climate-altering molecules, including carbon dioxide, methane, and ozone, into the atmosphere.⁶ Global temperatures are increasing due to the release of the aforementioned climate altering molecules, also known as greenhouse gases

⁵ Rinkesh. "Causes, Effects and Solutions to Environmental Degradation." *Conserve Energy Future*, 29 June 2020, <https://www.conserve-energy-future.com/causes-and-effects-of-environmental-degradation.php>.

⁶ Mann, Michael E. "Greenhouse Gas." *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., 29 Oct. 2021, <https://www.britannica.com/science/greenhouse-gas>.

, into the Earth's atmosphere.⁷ These molecules trap the longwave heat radiation that the earth naturally emits in the atmosphere rather than being released into space, thus warming the air and subsequently, the Earth's surface. According to the NOAA, "Averaged across land and ocean, the 2020 surface temperature was 1.76° F (0.98° Celsius) warmer than the twentieth-century average of 57.0°F (13.9°C) and 2.14°F (1.19°C) warmer than the pre-industrial period (1880-1900)".⁸ This seemingly small rise in temperature has had an extremely detrimental effect on many ecosystems around the world by damaging both living and non living components of earth's natural environment. For example, climate change has led to a sea level rise of 8-9 inches since 1880, and has placed 1 million species of animals at risk of extinction.⁹

⁷ Mann, Michael E. "Greenhouse Gas."

⁸ Dahlman, Rebecca Lindsey and LuAnn. "Climate Change: Global Temperature."

⁹ Lindsey, Rebecca. "Climate Change: Global Sea Level." *Climate Change: Global Sea Level | NOAA Climate.gov*, 7 Oct. 2021, <https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level>. ; CBS News Editors. "1 Million Species of Plants and Animals at Risk of Extinction, U.N. Report Warns." *CBS News*, CBS Interactive, 6 May 2019, <https://www.cbsnews.com/news/report-1-million-animals-plant-species-face-extinction-due-climate-change-human-activity-population/>.

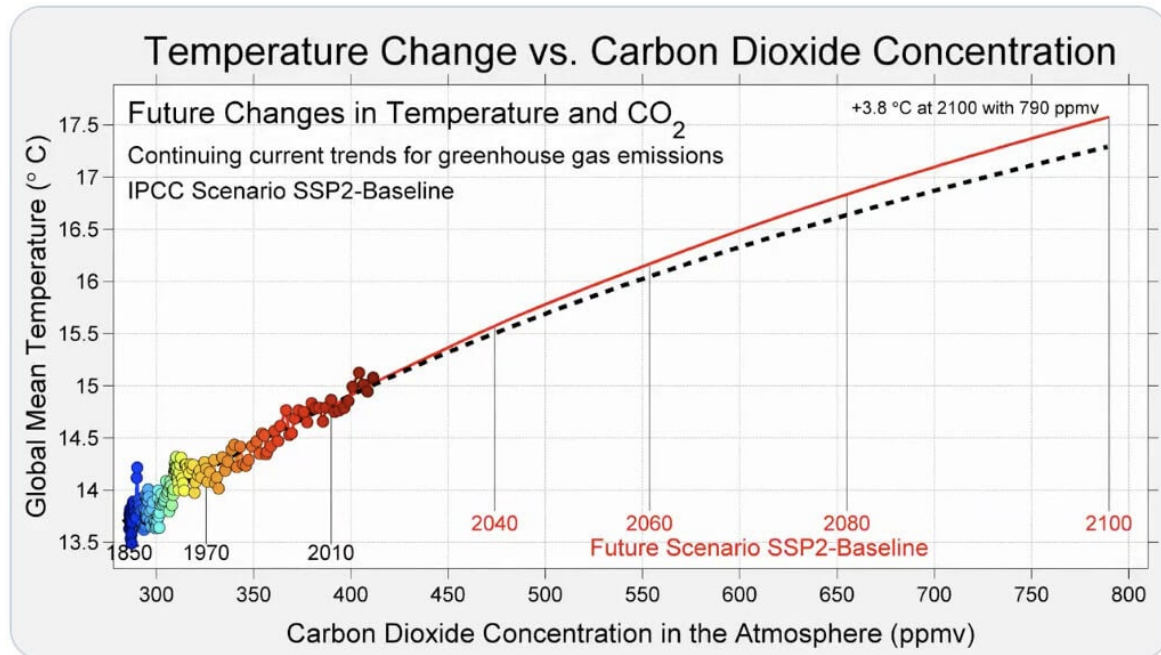


Figure 1¹⁰.

This Graphic displays the correlation between average global temperature and carbon dioxide concentrations in the atmosphere. Carbon Dioxide is a greenhouse gas that traps infrared radiation close to earth's surface. The positive relationship between the two has driven much of the climate change since industrialization in the 1800's.

¹⁰ Berkeley Earth. "Temperature Change vs. Carbon Dioxide Concentration." *Berkeley Earth*, 24 Feb. 2021, <https://berkeleyearth.org/dv/temperature-change-vs-carbon-dioxide-concentration/>.

As the threat of climate change continues to grow more intense, scientists have created tools which allow for the observation and quantification of climate change. One tool often used to describe the catastrophic levels of climate change is the Doomsday Clock, which was developed in 1947 as a “metaphorical clock” which would be used to describe the probability of a global climate driven disaster at a given point in time.¹¹ Each hour on the clock’s face represents a corresponding level of threat to humanity. For example, while hours 1-6 are relatively stable and nonthreatening, hours 6-12 grow increasingly more worrisome as the value of the hour increases. The later hours represent instability and high probability of disaster and conflict . In Particular, the 12th hour represents an imminent anthropogenic global catastrophe from which it would be difficult to recover.

¹¹ BBC News Editors. “Doomsday Clock Nears Apocalypse over Climate and Nuclear Fears.” *BBC News*, BBC, 23 Jan. 2020, <https://www.bbc.com/news/world-us-canada-51213185>.

While the clock was initially used during the Cold War as a means of measuring likelihood of nuclear war, it has since been converted to a tool to measure the imminent threat of climate change. As of 2007, the Bulletin of Atomic Scientists began to incorporate the dangers of climate change and environmental degradation into their Doomsday Clock calculations, which has brought the clock to 5 minutes before midnight.¹² On January 23, 2020, the Doomsday Clock was moved to 100 seconds before midnight because human behavior has increased the destruction of the environment to an almost irreversible, apocalyptic level.¹³ The pressing danger of climate change and environmental degradation has forced the clock to read the closest it has *ever* been to midnight.

It has become increasingly clear that climate change threatens human security throughout the world, especially in those places which are most intensely affected by changes in average weather and precipitation. When analyzing climate change, threats to individuals and to communities often go hand in hand. This correlation between people and their communal security was illustrated in the UN 1994 “Human Development Report” (HDR) definition of human security.¹⁴ The HDR is a document that deals with threats pertaining to individuals and their communities, especially security risks involving “economic, health, food, environmental, community, personal, and political” factors.¹⁵ Individuals and communities can face serious

¹² Ventana al Conocimiento . “The Doomsday Clock, 75 Years Predicting the End.” *OpenMind*, 27 Aug. 2021, <https://www.bbvaopenmind.com/en/science/environment/the-doomsday-clock-75-years-predicting-the-end-of-humanity/>.

¹³ BBC News Editors. “Doomsday Clock Nears Apocalypse over Climate and Nuclear Fears.”

¹⁴ United Nations Development Program. “Human Development Reports | United Nations Development ...” *UNDP*, 1994, http://hdr.undp.org/sites/default/files/reports/255/hdr_1994_en_complete_nostats.pdf.

¹⁵ United Nations Development Reports Editors. “Human Development Reports.” *About Human Development | Human Development Reports*, 22 Nov. 2021, <http://hdr.undp.org/en/humandev>.

health, economic, food, and living risks from climate change because higher quantities of intense and turbulent weather patterns have threatened the settlements and individuals who inhabit increasingly at-risk territories. More specific examples are illustrated below:

Health

Individuals are at risk of developing or worsening serious health concerns that can be amplified or created by anthropogenic pollutants. For example, increasingly severe flood conditions which are caused by climate change pose a serious threat to human health. Flooding has the potential to overwhelm infrastructure systems in countries and provinces around the world. When floods overwhelm the capacity of freshwater that a reservoir or watershed can handle, it invites the possibility of contamination. Floods can introduce bacteria and germs into freshwater systems, increasing the risk of people acquiring waterborne illnesses and viruses. Later in this paper, we will look more specifically at how flood conditions in the Jonglei state of South Sudan contribute to an increased rate of emigration from the state, as continued floods not only destroyed shelter and water security, but also placed the population at risk of water borne diseases such as cholera.¹⁶

Food and Water

¹⁶ Rieckmann, Andreas, et al. "Exploring Droughts and Floods and Their Association with Cholera Outbreaks in Sub-Saharan Africa: A Register-Based Ecological Study from 1990 to 2010." *The American Journal of Tropical Medicine and Hygiene*, The American Society of Tropical Medicine and Hygiene, May 2018, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5953376/>.

Human-driven climate change also threatens individuals' and communities' access to constant and reliable sources of food and fresh water. Modernization of food industries has enabled the global human population to grow, as increased food production allows for more life to thrive. As the human population grows over time, it becomes more important to continue to produce more food and have more fresh water available for people to use for drinking or agriculture/farming. Providing for a constant food and water supply grows ever more challenging in light of an increasingly changing climate. For example, drought conditions make it difficult to produce enough vegetation to grow crops to feed both humans and livestock. In countries where food production is already low, the increasingly dry conditions not only increase the threat of starvation but also greatly strain fresh water sources which are needed for drinking water as well. However, some areas that were once too cold for harvesting may well be able to produce more when they become warmer.

Shelter

Security also includes having access to shelter, such as a house or other dwelling. This has also been put at risk due to climate change. There is research that has shown an increased intensity of natural disasters due to global warming.¹⁷ Thousands of people and communities have been displaced from their homes around the globe because of the increasing intensity of natural disasters such as tornadoes, mudslides, and floods. In the wake of Hurricane Katrina in 2005, approximately 1 million people were displaced from their homes. The intense nature of the

¹⁷ UN News Editors. "Climate and Weather Related Disasters Surge Five-Fold over 50 Years, but Early Warnings Save Lives - WMO Report || UN News." *United Nations*, United Nations, 1 Sept. 2021, <https://news.un.org/en/story/2021/09/1098662>.

storm compared to previous storms that had affected the region also killed almost 1,000 people in the state of Louisiana alone. Many American people were left with destroyed homes or without their essential belongings due to the destructive storm and were forced to live in crowded public shelters until new secure housing arrangements could be made. To this day, parts of Louisiana are still recovering from Katrina. Security and peace created by the possession of shelter are obviously put at risk due to the intense nature of such disasters.

Hurricane Sandy in 2012 caused approximately 60 billion dollars in damage and took the lives of approximately 125 people while also severing power to 7 million American households.¹⁸ Hurricane Sandy in particular is indicative of the growing threat of climate change because not only was the scale of the storm intense, but it also affected a region of the US, the Northeastern seaboard, which is not usually hit by hurricanes. Thus, the buildings and homes were not equipped to withstand the strong storm surges, causing destruction that displaced thousands from their homes.¹⁹

Economy

Basic human security has evolved to also include security of the economy. This means that human security relies on access to a marketplace to sell and acquire goods and services in order to finance one's livelihood. Although a comfortable and healthy livelihood differs from geographic region to geographic region, we can basically understand it as having access to

¹⁸ Cappucci, Matthew. "Climate Change Boosted Hurricane Sandy's Damage by \$8 Billion, Study Finds." *The Washington Post*, WP Company, 19 May 2021, <https://www.washingtonpost.com/weather/2021/05/19/hurricane-sandy-climate-change-damages/>.

¹⁹ Cappucci, Matthew. "Climate Change Boosted Hurricane Sandy's Damage by \$8 Billion, Study Finds."

markets, having goods and services to purchase and sell, and having a stable and secure economy (meaning one's livelihood won't suddenly disappear). The increasing rate of global climate change has placed increased stress on healthy economies around the world. Climate change alters natural resource accessibility, which subsequently alters the ability of individuals to produce goods and services which are sold within a marketplace.

An example of this are the recent events seen in California. In 2017, Napa Valley in Northern California suffered tremendous losses to its wine industry when huge wildfires destroyed acres of vineyards and stores of wine. The wildfires were more intense in 2017 due to the severe drought conditions throughout California as a whole. The surplus of overdried landscape made for perfect wildfire conditions, and wildfires destroyed upwards of 50 million dollars of the valuable Napa Valley wine industry.²⁰

Similarly, coastal fishing towns in the gulf of Mexico are facing an increased scarcity of healthy fishing waters. Not only does this threaten the population's access to a stable food supply from the ocean but it also threatens the communities' ability to financially support themselves, as many rely on large fishing hauls to sell at domestic markets and abroad. The increasingly unhealthy waters in the Gulf of Mexico have been called the "Dead Zone", and data shows that unnaturally warm waters in combination with anthropogenic pollution (not climate change) have lead to generously low oxygen levels in the Gulf, leading to a lack of oxygen for marine organisms, such as fish, to use in order to survive.²¹ Thus, fish populations and coastal

²⁰ Flavelle, Christopher. "Scorched, Parched and Now Uninsurable: Climate Change Hits Wine Country." *The New York Times*, The New York Times, 18 July 2021, <https://www.nytimes.com/2021/07/18/climate/napa-wine-heat-hot-weather.html>.

²¹ The Nature Conservancy Editors. "Gulf of Mexico Dead Zone." *The Nature Conservancy*, 22 Nov. 2021, <https://www.nature.org/en-us/about-us/where-we-work/priority-landscapes/gulf-of-mexico/stories-in-the-gulf-of-mexico/gulf-of-mexico-dead-zone/>.

populations have both been devastated as climate change continues to threaten their security of economy, health, and food.²²

Temperature change in the last 50 years

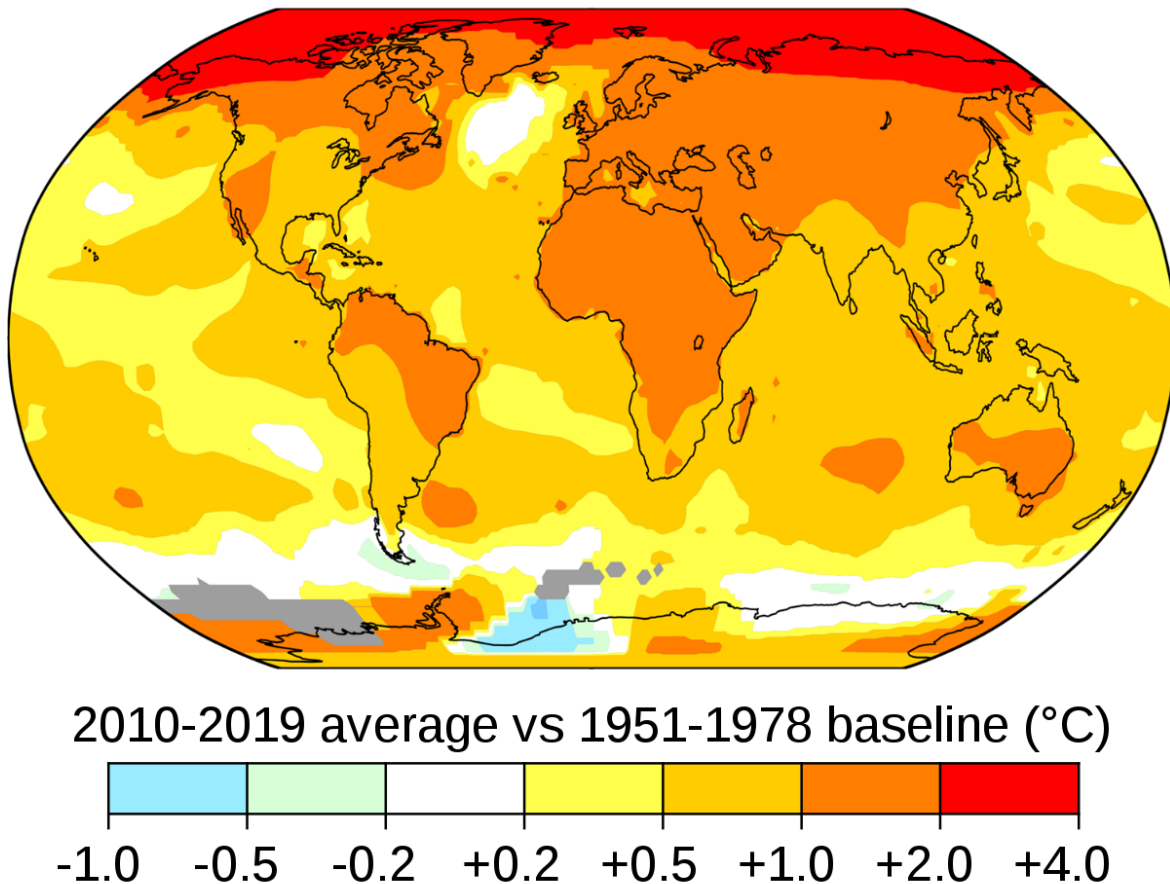


Figure 2.²³

²² Lee, Elizabeth. "‘Dead Zone’ Threatens Livelihood of Gulf of Mexico Fishermen." *VOA*, 'Dead Zone' Threatens Livelihood of Gulf of Mexico Fishermen, 24 June 2019, https://www.voanews.com/a/usa_dead-zone-threatens-livelihood-gulf-mexico-fishermen/6170500.html.

²³ Gough, Evan. "According to NASA, 2019 Was the Second Hottest Year on Record." *Universe Today*, 20 Jan. 2020, <https://www.universetoday.com/144652/according-to-nasa-2019-was-the-second-hottest-year-on-record/>.

This figure shows the increase in temperature that almost all of the world has experienced since the 1951-1978 baseline. This is indicative of a rapidly changing climate in the past 60 years that negatively affects biotic and abiotic organisms and systems all around the world.

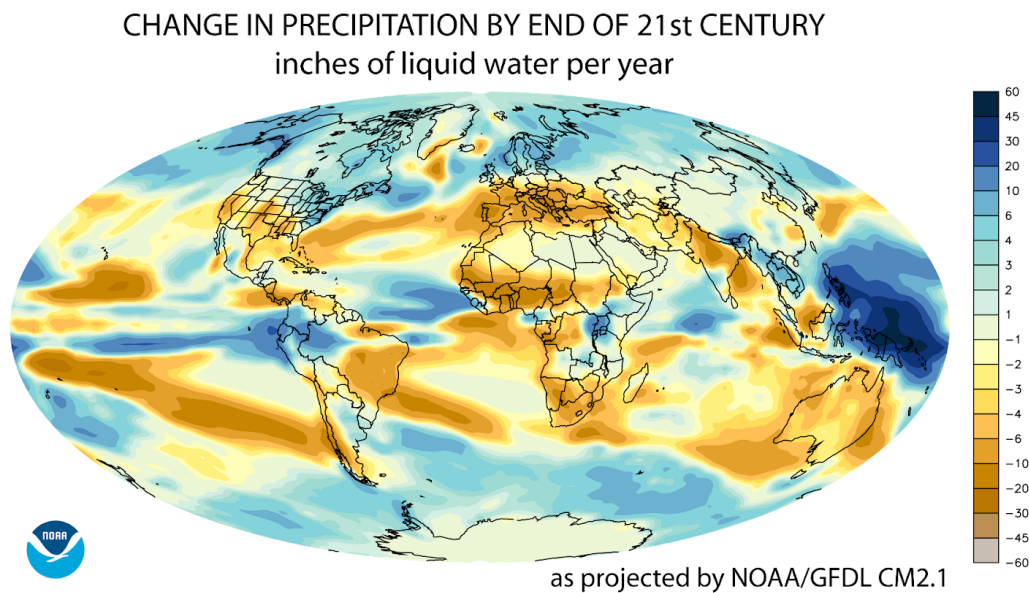


Figure 3.²⁴

This figure shows changes in precipitation compared to historic averages. Note that a lot of landmass, specifically between 30 degrees North and 30 degrees South, experience a decrease in precipitation compared to the past. Such changes are detrimental to natural habitats and also to human activity such as agriculture and farming.

²⁴ Penn State. "Climate Change Predictions." *Climate Change Predictions* | *EARTH 103: Earth in the Future*, 2021, <https://www.e-education.psu.edu/earth103/node/902>.

Climate Change in Africa

Both human security and environmental stability are impacted by climate change globally as well as regionally. The case in Africa is no different. The 2019 State of Climate in Africa report highlighted the impending threats to human security and economics in Africa in light of growing environmental changes.²⁵ The World Meteorological Organization summarized their findings by remarking that, “Temperatures in Africa have been rising in recent decades at a rate comparable to that of most other continents and thus somewhat faster than global mean surface temperature, which incorporates a large ocean component. The year 2019 was among the three warmest years on record for the continent. Annual rainfall exhibited sharp geographical contrasts in 2019, with totals remarkably below long-term means in Southern Africa and west of the High Atlas Mountains and above-average rainfall recorded in other areas, in particular in Central and East Africa... This is more than the average global sea-level rise of 3–4 mm per year.... Africa was severely hit by extreme weather and climate events in 2019... Tropical Cyclones Idai and Kenneth resulted in severe humanitarian impacts, including hundreds of casualties and hundreds of thousands of displaced persons... The areas most severely affected by drought in 2019 were in Southern Africa and were many of the same areas that were also affected by a protracted drought in 2014–2016. In contrast, a dramatic shift in conditions was experienced in the Greater Horn of Africa, from very dry conditions in 2018 and most of 2019 to floods and landslides associated with heavy rainfall in late 2019.”²⁶

²⁵ ECA Editors. “State of the Climate in Africa 2019 Report.” *State of the Climate in Africa 2019 Report* | United Nations Economic Commission for Africa, 26 Oct. 1970, <https://www.uneca.org/events/african-climate-policy-centre/state-climate-africa-2019-report>.

²⁶ WMO Editors. “Multi-Agency Report Highlights the Current and Future State of the Climate in Africa.” *World Meteorological Organization*, 26 Oct. 2020, <https://public.wmo.int/en/media/press-release/multi-agency-report-highlights-current-and-future-state-of-climate-afr>

Furthermore, the report emphasizes the importance of agriculture within African society. The author writes, “Agriculture is the backbone of Africa’s economy and accounts for the majority of livelihoods across the continent. Africa is therefore an exposure and vulnerability “hot spot” for climate variability and change impacts. Projections under the Intergovernmental Panel on Climate Change (IPCC)...suggest that warming scenarios ...have devastating effects on crop production and food security.”²⁷

It is clear from the report’s findings that the criteria laid out in the UN’s 1994 “Human Development Report” definition of human security are all at stake, for not only are food and fresh water supply at risk due to erratic precipitation levels, but shelter and health are also at risk due to increased severity of natural disasters, which not only destroy structures and infrastructure but can also cause physical harm to inhabitants.

ica?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A%2Bwmo%2FapqD%2B%28World%2BMeteorological%2BOrganization%2BNews%29.

²⁷ WMO Editors. “Multi-Agency Report Highlights the Current and Future State of the Climate in Africa.”

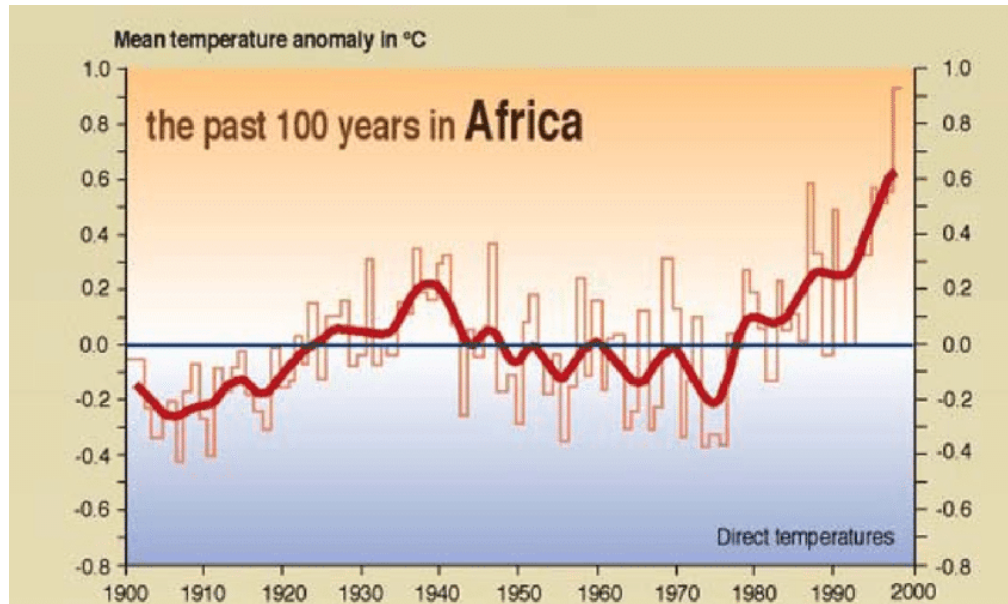


Figure 4.²⁸

Regional temperatures have risen compared to past decades. This is in part due to the release of natural and (mainly) anthropogenic greenhouse gasses into the atmosphere which raise temperatures around the world. Even Though Africa does not pollute as much as other continents, atmospheric circulation pushes greenhouse gasses around the globe so that they affect the entire world.

²⁸ Research Gate Editors. *Temperature Trends for the Arctic*, 2021, https://www.researchgate.net/figure/Temperature-trends-for-the-Arctic-showing-a-the-annual-surface-temperature-tr ends-over_fig2_222911133.

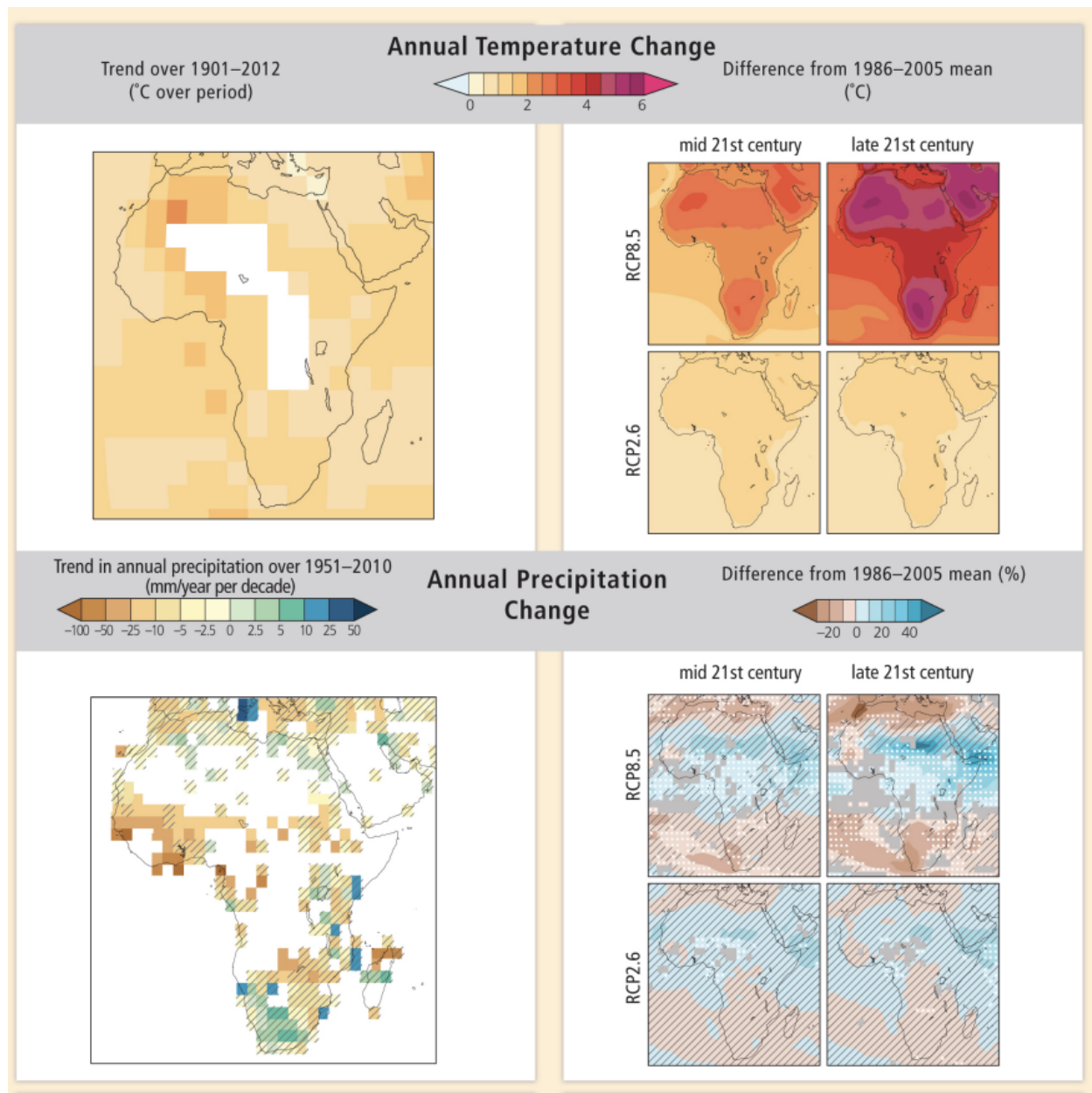
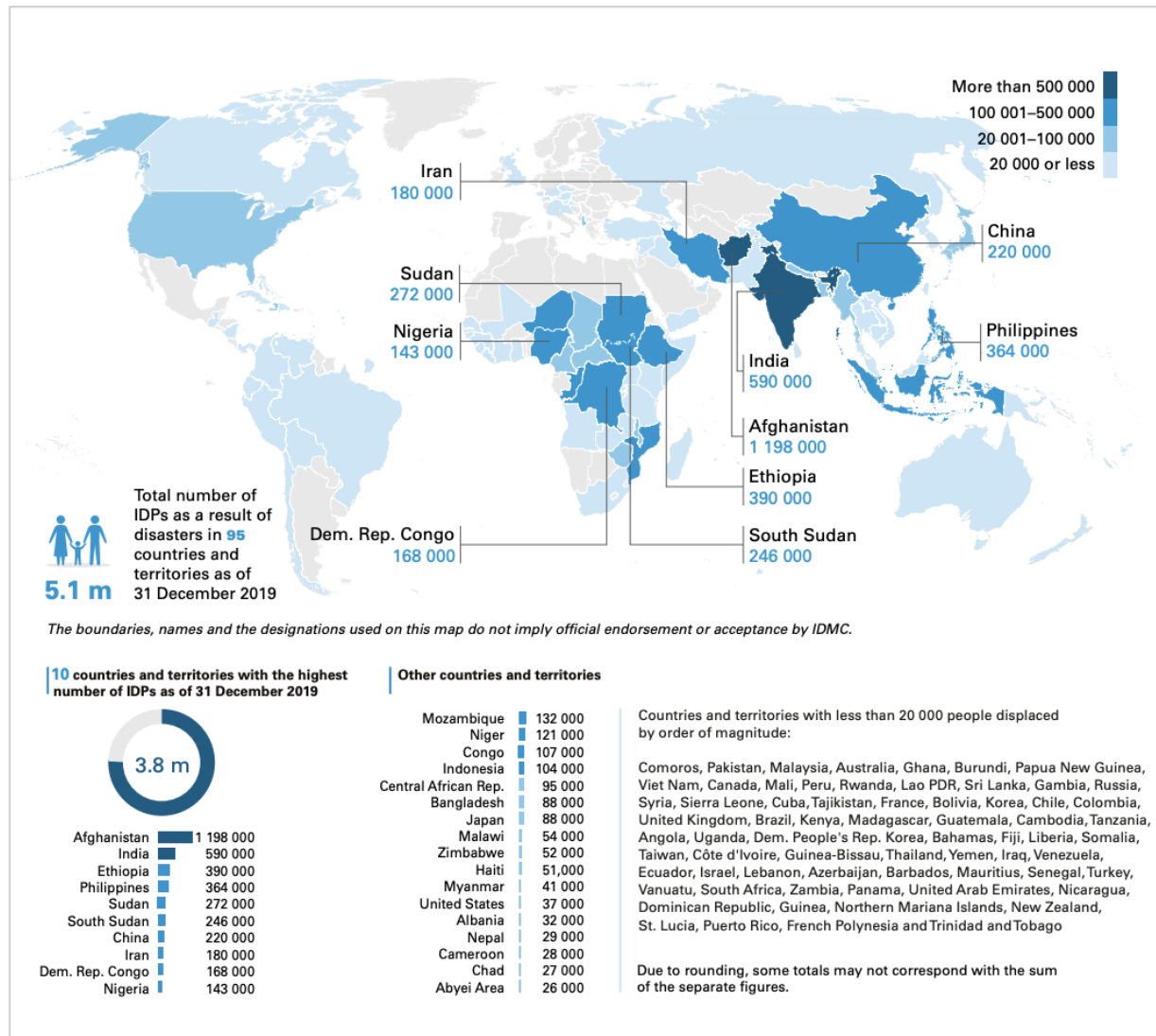


Figure 5.²⁹

This figure includes four different maps which show changes in temperature and precipitation in Africa specifically. Overall, temperatures have risen across the continent and precipitation has increased in the north, and decreased in the south.

²⁹ World Meteorological Organization. “State of the Climate in Africa.” *State of the Climate in Africa 2019*, 2019, https://etrp.wmo.int/pluginfile.php/44778/mod_resource/content/1/ClimAdap_session5_JVazquez.pdf.

Figure 6.³⁰

This graphic from the World Meteorological Organization shows the total number of internally displaced people from countries across the globe as a result of increased rates of climate disasters. Sudan and South Sudan in particular are among those countries which experience the most displaced peoples as a result of an increasingly changing climate.

³⁰ World Meteorological Organization. "State of the Climate in Africa." *State of the Climate in Africa 2019*, 2019, https://etrp.wmo.int/pluginfile.php/44778/mod_resource/content/1/ClimAdap_session5_JVazquez.pdf.

Climate Change in South Sudan

South Sudan is a sub-Saharan, land-locked African country that borders Sudan, Ethiopia, Uganda, Kenya, the Democratic Republic of the Congo, and the Central African Republic. South Sudan's geographic location is highly vulnerable to climate change, including flooding, droughts and, most recently, a locust infestation (due to warming changing climate conditions that promote the reproduction of locusts).³¹ The changes to climate over time affect personal security in South Sudan by decreasing access to stable sources of food, fresh water, shelter, and healthy living conditions.

According to the Ministry of Foreign Affairs report on Climate Change in South Sudan, the country is, “ experiencing the effects of long-term climate change, such as increased temperatures and precipitation change, as well as short-term changes, like more frequent droughts and floods”.³² This aligns with the general climate change trends seen in Africa as a whole in recent years.

³¹ World Bank Group Editors. “World Bank Climate Change Knowledge Portal.” *Summary | Climate Change Knowledge Portal*, 22 Nov. 2021, <https://climateknowledgeportal.worldbank.org/country/south-sudan>. ; ACCORD. “Climate, Peace and Security: The Case of South Sudan - South Sudan.” *ReliefWeb*, 24 Mar. 2021, <https://reliefweb.int/report/south-sudan/climate-peace-and-security-case-south-sudan>. ; Stalon, Jean-Luc. “Confronting Climate Change in South Sudan | Africa Renewal.” *United Nations*, United Nations, 29 June 2017, <https://www.un.org/africarenewal/news/confronting-climate-change-south-sudan>.

³² Yaw Tchie, Andrew E. “Climate, Peace and Security: The Case of South Sudan.” *NUPI*, 24 Mar. 2021, https://www.nupi.no/nupi_eng/Publications/CRISTin-Pub/Climate-Peace-and-Security-The-case-of-South-Sudan.

Temperature:

Mean annual temperatures across South Sudan have varied between 26°C (79 degrees fahrenheit) and 32°C (90 degrees fahrenheit) over the past 30 years, with an increase of 0.4°C every decade.

³³ The average temperature is projected to increase between 1°C and 1.5°C by 2060, leading to a warmer and drier climate.³⁴

Precipitation:

In the last 20 years, rainfall in South Sudan has been erratic, and swings between heavy and light rainfall within a given season. For example, “summer rainfall has decreased by 15–20 per cent, particularly in the north-east, whereas other regions experienced flooding in 2019”.³⁵ In 2019 alone, flooding displaced hundreds of people from their homes due to heavy rainfall during the wet season. This directly harmed crop yields for 2019, contaminated fresh water sources, destroyed homes, and injured and killed many citizens.³⁶ As climate change continues to increase due to increased anthropogenic emissions, one can expect to see these instances of abnormal weather patterns increase and further threaten security and stability within South Sudan.

South Sudan’s security of shelter, food and water, health, and economy face increased threat due to climate change, and these will be addressed sequentially.

³³ Yaw Tchier, Andrew E. “Climate, Peace and Security: The Case of South Sudan.”

³⁴ Yaw Tchier, Andrew E. “Climate, Peace and Security: The Case of South Sudan.” ; de Coning, Cedric H. “Climate, Peace and Security Fact Sheet: South Sudan.” *NUPI*, 11 Mar. 2021, https://www.nupi.no/nupi_eng/Publications/CRISTin-Pub/Climate-Peace-and-Security-Fact-Sheet-South-Sudan.

³⁵ de Coning, Cedric H. “Climate, Peace and Security Fact Sheet: South Sudan.”

³⁶ Quinn, Colin. “South Sudan Climate Vulnerability Profile: Sector- and ...” *USAID*, May 2019, https://www.climate-links.org/sites/default/files/asset/document/USAID_The%20Cadmus%20Group_South%20Sudan%20Climate%20Vulnerability%20Profile%20to%20Improve%20Resilience.pdf.

Shelter

South Sudan naturally experiences a wet and a dry season, so heavy rainfall during the wet season is no surprise to the people living there. However, climate change has increased the intensity of instances of heavy rainfall in recent years. Globally, wet seasons, tropical storms, hurricanes, and heavy rainfall have become more intense, and have been characterized by record breaking rainfall, with more severe dry seasons and droughts breaking up the wet seasons.³⁷ South Sudan is no exception to this trend. In the last decade, the region has suffered extreme swings in climate, changing from extreme drought to extreme precipitation in a very short time period. Floods in particular provide great threat to the security of shelter in South Sudan, as structures, homes, and roads were not built to accommodate the extremely heavy downpours, flash floods, and lasting floods which have occurred with frightening frequency since 2012.³⁸ As many as 1 million people have been affected by the floods, with thousands of people being displaced from their homes due to water damage, the growth of flood zones, and the increased area of land which has been ruined due to waterlogged soil. In particular, the lands surrounding the West Nile River have faced increased threat to shelter security as intense flooding continues to overwhelm infrastructure and ruin homes.³⁹

³⁷ Dahlman, Rebecca Lindsey and LuAnn. "Climate Change: Global Temperature."

³⁸ Quinn, Colin. "South Sudan Climate Vulnerability Profile: Sector- and ..."

³⁹ Yaw Tchier, Andrew E. "Climate, Peace and Security: The Case of South Sudan."

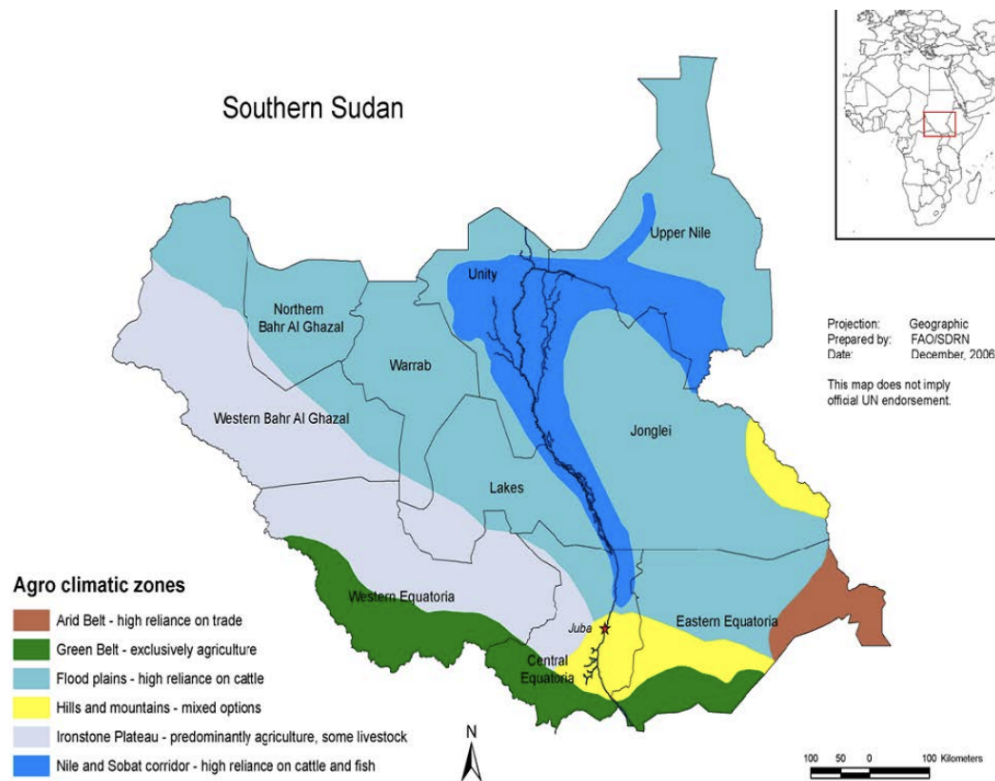


Figure 7.⁴⁰

This map shows the climatic zones of south sudan. The country is climatically diverse, having natural wetlands, arid deserts, regions with hills, and also jungles.

Food and Water

Food and Water security has also faced increased threat due to climate change, and, similar to the security of shelter, has been greatly influenced by extreme flooding. This has been offset to some extent by extreme drought conditions in the dry season. Floods throughout South

⁴⁰ USAID. "Recent Reported Incidents of Violence in South Sudan (Last Updated 04/11/14) - South Sudan." *ReliefWeb*, Dec. 2014, <https://reliefweb.int/map/south-sudan/recent-reported-incidents-violence-south-sudan-last-updated-041114>.

Sudan harm the health of the naturally fertile soils near the West Nile, as the soil becomes waterlogged and thus loses the ability to be as productive as it was in years before the intensification of climate change.⁴¹ Floods also destroy existing agricultural fields as the rising water levels wash away crops during especially heavy rainfall.

In addition to extreme floods, South Sudan's food supply is threatened by the increasing frequency of extreme drought periods between wet seasons has also shattered the security of food not only for the people of South Sudan but also for their livestock. Droughts that dried up previously arable soil have also dried out areas of the sizable grasslands surrounding the Nile River.⁴² The shrinking area has led to less land for cattle to graze on, which has resulted not only in a lack of food for the cattle to graze on but also a reduction in the size of herds that pastoral populations are able to keep.⁴³

As crops and cattle continue to be threatened by an ever changing climate, food insecurity in South Sudan continues to intensify. As of 2019, an estimated 6 million people faced acute food insecurity and required outside assistance in order to procure a stable source of food,⁴⁴ accounting for approximately 51% of South Sudan's 11.7 million population!⁴⁵ Unfortunately,

⁴¹ Hyun Maeng, Min. "Climate Change, Food Security and Conflict." *SIPRI*, 1 Oct. 2010, <https://www.sipri.org/commentary/blog/mon-10-01-2012-14-00/climate-change-food-security-and-conflict>.

⁴² Phiri, Tomson. "South Sudan Hunger Deepens Due to Drought, Floods and Uncertain Political Future: World Food Programme." *UN World Food Programme*, 12 Dec. 2019, <https://www.wfp.org/news/south-sudan-hunger-deepens-due-drought-floods-and-uncertain-political-future>.

⁴³ Hyun Maeng, Min. "Climate Change, Food Security and Conflict."

⁴⁴ Francis, Okech, et al. "What's Driving South Sudan's Worst Food Crisis since Independence?" *The New Humanitarian*, 23 Aug. 2021, <https://www.thenewhumanitarian.org/news/2021/8/23/funding-gaps-looting-hinder-south-sudan-food-crisis-response>.

⁴⁵ Francis, Okech, et al. "What's Driving South Sudan's Worst Food Crisis since Independence?"

this figure is projected to increase as climate change will only continue to destroy stable food sources.

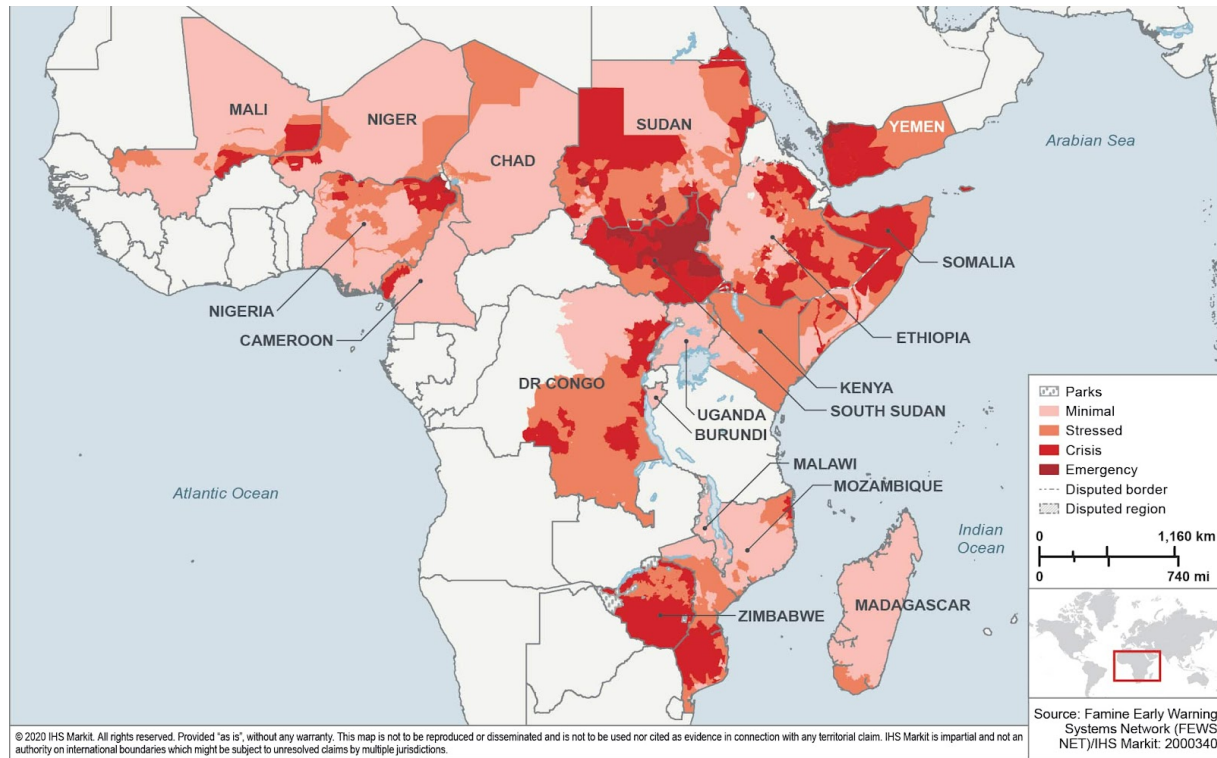


Figure 8.⁴⁶

This graphic touches on food insecurity in South Sudan and Around South Sudan. Compared to other countries in the sub saharan region, South Sudan experiences the worst food insecurity.

⁴⁶ Lechler, Dr. Marie. "Food Insecurity in Sub-Saharan Africa." *IHS Markit*, 14 Jan. 2021, <https://ihsmarkit.com/research-analysis/food-insecurity-in-subsaharan-africa.html>.

Health

One of the main threats to health security in South Sudan are the increasing rates of famine and malnutrition across the country which are exacerbated by the increasingly intense periods of flooding and drought. The health threat of floods does not end at the destruction of shelter and the presence of food and water insecurity. South Sudan has also faced increasing rates of cholera during seasons of extreme flooding in the country. According to Andreas Reikmann et. al.'s study on cholera in Sub Saharan Africa, "Floods may contribute to cholera outbreaks in a number of ways. Floodwaters can overflow sanitation systems and contaminate the environment and water sources. In addition, they may impede access to safe water sources or sanitation facilities".⁴⁷ This is precisely how cholera cases continue to rise in South Sudan. The extreme floods contaminate the freshwater stores of populations in and around the flooding zones, leading to the unknowing consumption of contaminated water. Cholera is not the only disease to linger in contaminated watersheds. Other diseases such as dysentery, hepatitis A, typhoid, and polio are also known to exist in South Sudan's contaminated water.⁴⁸ These cases place increased stress on South Sudan's underequipped and underfunded healthcare system, which struggles to not only address these cases which do not exist in more developed countries, but also to address rising levels of malnutrition.

⁴⁷ Rieckmann, Andreas, et al. "Exploring Droughts and Floods and Their Association with Cholera Outbreaks in Sub-Saharan Africa: A Register-Based Ecological Study from 1990 to 2010." *The American Journal of Tropical Medicine and Hygiene*, The American Society of Tropical Medicine and Hygiene, May 2018, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5953376/>.

⁴⁸ The Last Well Editors. "The Current State of Contaminated Water-Related Diseases in Africa." *The Last Well*, 29 Mar. 2019, <https://thelastwell.org/2019/03/the-current-state-of-contaminated-water-related-diseases-in-africa/>.

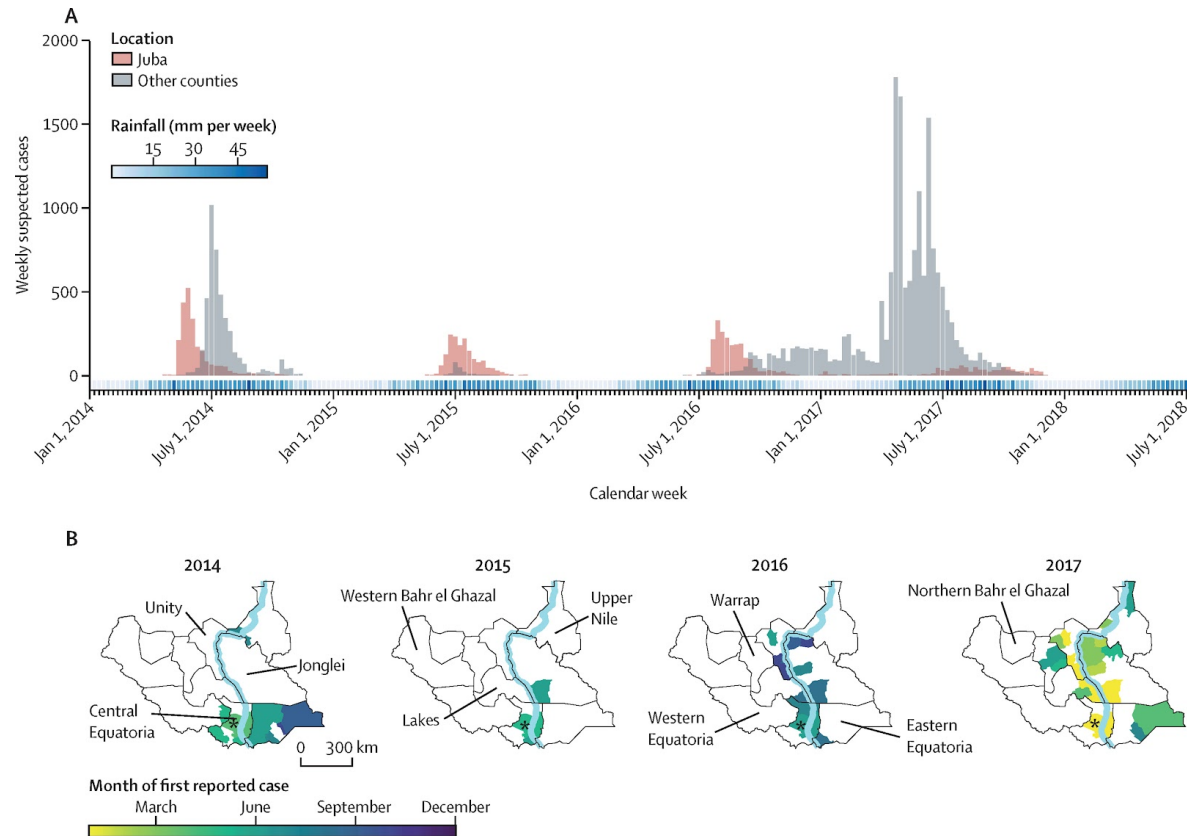


Figure 9.⁴⁹

This graphic shows the reported cases of Cholera in South Sudan over time in relation to the total rainfall in South Sudan over time. This graphic is particularly important because it shows that with almost every rise in rainfall, there is a corresponding rise in cholera. This is because increased rainfall due to climate change can overwhelm South Sudanese infrastructure such as natural watersheds and water purifying centers, causing contamination to fresh water.

⁴⁹ Ministry of Foreign Affairs. "Climate Change Profile South Sudan." *Ministry of Foreign Affairs*, Apr. 2018, file:///Users/madisonmenard/Downloads/South+Sudan%20(2).pdf.

Economy

Lastly, economic security faces increased stress due to climate change. As previously mentioned, flooding and droughts have greatly threatened the pastoral and agricultural industries. These industries make up 15% of South Sudan's national GDP, and a large majority of South Sudan's population engages in agricultural, pastoral, or fishing industries.⁵⁰ A threat to any one of these industries via drought or flood affects the rest, especially as arable and grazeable land becomes all the more scarce.

South Sudan's main exports include gold (70 % total exports), livestock (25%), oil, arabic gum and cotton.⁵¹ While oil and gold are not resources that are greatly affected by climate change, livestock, cotton, and arabic gum are all exports which are included in the agricultural and pastoral activities which are disrupted by intense drought and flood seasons, thus greatly hindering South Sudan's economy not only on a domestic but also a global scale.

⁵⁰ Quinn, Colin. "South Sudan Climate Vulnerability Profile: Sector- and ..."

⁵¹ OEC Editors. "South Sudan (SSD) Exports, Imports, and Trade Partners." *OEC*, 22 Nov. 2021, [https://oec.world/en/profile/country/ssd#:~:text=The%20most%20recent%20exports%20are,and%20Spain%20\(%241.56M\)](https://oec.world/en/profile/country/ssd#:~:text=The%20most%20recent%20exports%20are,and%20Spain%20(%241.56M).).

GDP	15% of GDP; 36% of non-oil GDP
Employment	63% of working population (aged 15 and above) 78% of total population
Trade	Imports: 12% Exports: less than 1% Trade deficit: 11-12%
Households	Total households 81% Engage in cultivation 22% Engage in fisheries 74% Own livestock Rural Households 89% Engage in cultivation 24% Engage in fisheries 80% Own Livestock
Livelihoods	Total population 69% Farm crops 7% Animal husbandry Rural population 78% Farm crops 8% Animal husbandry

Figure 10.⁵²

This graphic breaks down the major industries within South Sudan. It is notable that a vast majority of people engage in farming or pastoral occupations, which are extremely vulnerable to changes in climate.

⁵² World Meteorological Organization. "State of the Climate in Africa." *State of the Climate in Africa 2019*, 2019, https://etrp.wmo.int/pluginfile.php/44778/mod_resource/content/1/ClimAdap_session5_JVazquez.pdf.

Map 2 Changes in Precipitation and temperature increase: 1960-2039

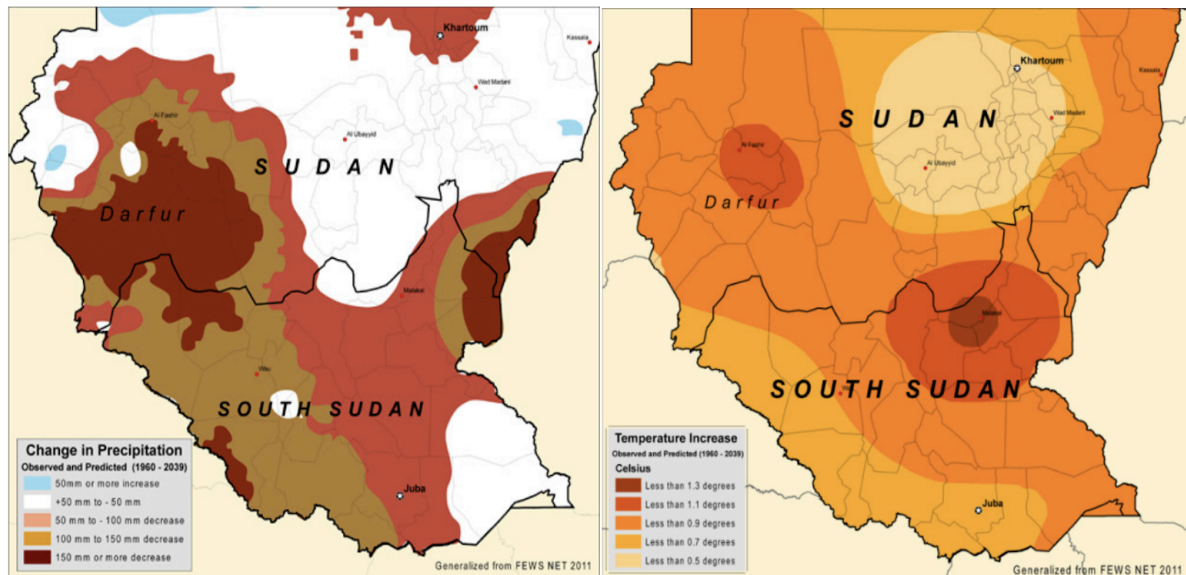


Figure 11.⁵³

Figure 11 further emphasizes the changes in precipitation and temperature in south sudan compared to historic averages. These changes are especially detrimental to farmers, fishermen, and pastoralists who depend on stable climates in order to continue producing stable outputs to sell.

⁵³ Ministry of Foreign Affairs. "Climate Change Profile South Sudan." *Ministry of Foreign Affairs*, Apr. 2018, file:///Users/madisonmenard/Downloads/South+Sudan%20(2).pdf.

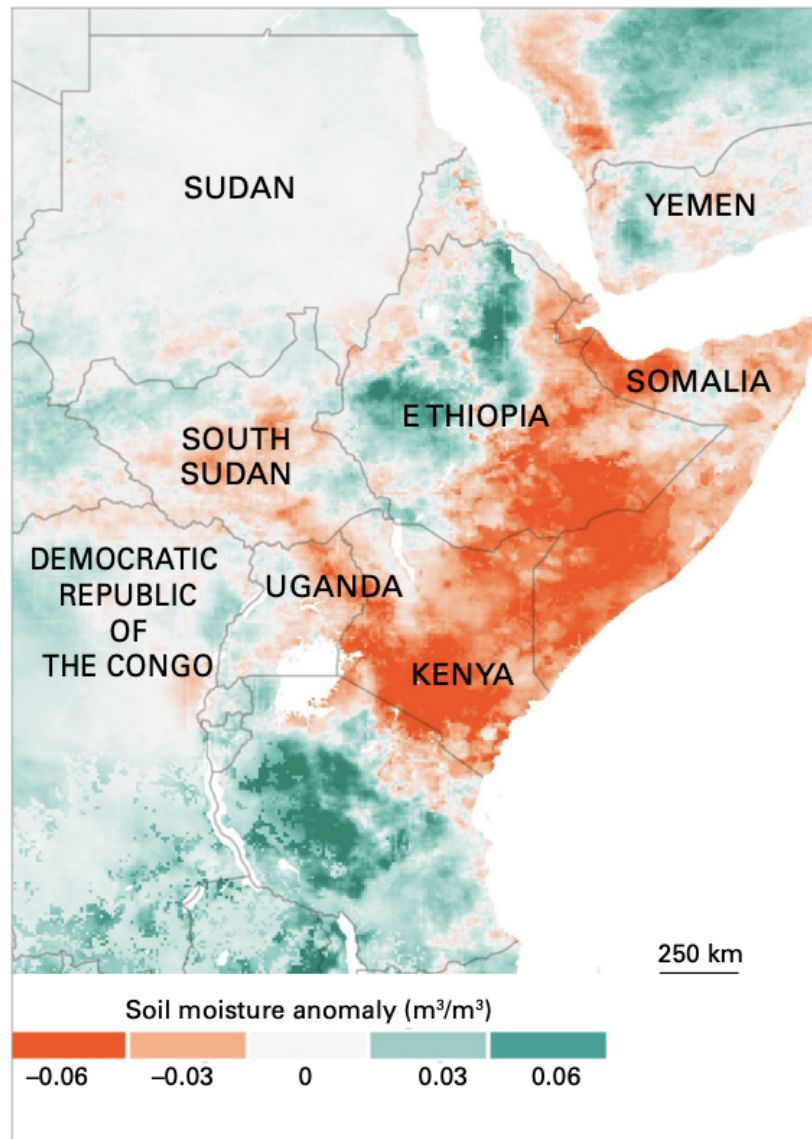


Figure 12.⁵⁴

This map shows soil anomalies in South Sudan's soil for the year 2019. Areas that are green show that they are more moist than average while red areas show drier conditions. For 2019, South Sudan experienced both drier conditions and wetter conditions, which were detrimental to vulnerable industries and populations.

⁵⁴ World Meteorological Organization. "State of the Climate in Africa." *State of the Climate in Africa 2019*, 2019, https://etrp.wmo.int/pluginfile.php/44778/mod_resource/content/1/ClimAdap_session5_JVazquez.pdf.

South Sudan: a New State Built on a Foundation of Violence and Instability

South Sudan is a northeastern, land-locked African country that borders Sudan, Ethiopia, Uganda, Kenya, the Democratic Republic of the Congo, and the Central African Republic. South Sudan's capital is Juba. However, prior to 2011, the territory now known as South Sudan was a part of Sudan. Thus, many of South Sudan's current political, economic, and cultural problems are remnants of the country's ties to Sudan proper and its other neighbors.⁵⁵ The government of South Sudan was created as a republic, though civil war has disrupted the legal and administrative systems of the country. Culturally, the country has a predominantly Christian or animist background, which differs from the largely Muslim culture of Sudan.⁵⁶

Furthermore, since its formal birth in 2011, South Sudan's short yet turbulent history has been defined by recurring instances of violence, caused not only by the ruling politicians but also by the complex historical, economic, and cultural differences between neighboring groups in the country. Before being able to identify and assess the impact that climate change has on violence within the country, it is important to understand the very nature of the violence that is occurring. Only then will we be able to untangle the overlapping causes of violence to see how large of a role, if any, climate change plays in the longevity and degree of violence in South Sudan.

⁵⁵ Alawad Sikainga, Ahmad. "South Sudan." *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., 7 June 2021, <https://www.britannica.com/place/South-Sudan>.

⁵⁶ Alawad Sikainga, Ahmad. "South Sudan."

History Prior to 2011

To fully understand the causes of violence in South Sudan, one must understand the conflicts that have existed within the territory far longer than 2011, even those preceding the colonization of the South Sudanese territory.

Pre-Colonialism

The majority of people of South Sudan are Christian in faith, or follow regional African religions. There exist several ethnic groups within the territory of South Sudan, but the two main ethnic groups are the Dinka and the Nuer. The Dinka makeup $\frac{2}{5}$ of the population and the Nuer makeup $\frac{1}{5}$ of the population. The rest of the population can be broken down into minority groups which include the Anwak, Bari, Shilluk, and Zande.⁵⁷

The Dinka are dispersed throughout the country and are typically cattle herders by profession. The Nuer, on the other hand, have settled through the central/northeastern part of the country. The Nuer are typically farmers by trade.⁵⁸

Colonial Ties

The territory now known as South Sudan was brought under British Mandate in the 1899 Anglo-Egyptian Condominium.⁵⁹ The mandate gave Sudan (which included South Sudan at the time) to the Egyptian and British regimes to rule. However, as the British had colonized Egypt,

⁵⁷ Alawad Sikainga, Ahmad. "South Sudan."

⁵⁸ Southall, Aidan. "Nuer and Dinka Are People: Ecology, Ethnicity and Logical Possibility." *Man*, vol. 11, no. 4, 1976, pp. 463–491. *JSTOR*, <https://doi.org/10.2307/2800433>. Accessed 22 Nov. 2021.

⁵⁹ Alawad Sikainga, Ahmad. "South Sudan."

the British had a far heavier influence on colonial Sudan than the Egyptian government.

Beginning in 1899, the British deployed forces to pacify the local religious uprisings which were occurring all across the country.⁶⁰ These conflicts were mainly Muslim versus Christian in nature, which naturally pitted the northern Muslim/Arab leaning population against the Christian south.

By 1900, the north of Sudan was largely under the control of the British mandate with few uprisings remaining. This allowed the British to begin modernizing the country both economically and politically. The south, however, which included modern day South Sudan, was not so easily quelled. Resistance to British governance was far more intense and took place over the entire British imperial rule in Sudan, approximately 57 years. This greatly impaired the British ability to modernize the south, as their efforts were focused more on peace-keeping than on modernization of institutions and the economy. The lasting effects of the 1900 revolts in south Sudan are apparent, and further increased the divide between the north and the south, for as the north became more modern and western, the south remained comparatively stagnant, lacking any sort of political, cultural, or economic advancement. This created resentment and tension between the north and south, which further fueled desires for separation within South Sudanese nationalist groups.⁶¹

Furthermore, in the decades between 1900 and 1947, the British colonizers made the decision to segregate the Christian Africans of the south from the Muslim Arabs of northern

⁶⁰ Larson, Greg. "Brief History of South Sudan." *Water For South Sudan*, 22 Nov. 2021, <https://www.waterforsouthsudan.org/brief-history-of-south-sudan>.

⁶¹ Economist Intelligence Unit. "Sudan." *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., 17 Nov. 2021, <https://www.britannica.com/place/Sudan>.

Sudan. This physically set the two cultural identities apart, leaving the Muslim population in the modernized north and the Christian population in the unstable south.⁶²

The British were able to maintain peace within Sudan until the end of World War II in 1945. While the British were fighting the war in Europe, members of the educated Sudanese upper class elite created the first nationalist groups, such as the Graduate's General Congress, which included both moderate and radical members bound together by their nationalist ideas for Sudan.⁶³ The Graduate's General Congress became the first political party in Sudan. The British administration tried to accommodate Sudanese cries for self determination by allowing for more Sudanese participation in administrative offices and positions of leadership. In 1947, the British also decided to abolish the longstanding segregation that had lasted nearly half a century between the Muslim Arab North and the Christian African South, allowing for a legislative council in which Arabic was decreed as the national language, not English, much to the south's discontent. The institution of Arabic as the national language limited the ability of the south to participate in the government, thus further marginalizing Christian Africans and adding further stress between the territory of the north and south.⁶⁴

In 1953, the Egyptian and British governments signed an agreement which granted Sudan self determination and self government within three years. In November of 1953, two political parties faced off in the first elections for a representative parliamentary government: the National Unionist Party, led by the charismatic and Egyptian-favored Isma'il al-Azhari, and the Ummah

⁶² Larson, Greg. "Brief History of South Sudan."

⁶³ Economist Intelligence Unit. "Sudan."

⁶⁴ "Sudan's Political History in Brief." *Middle East Journal*, vol. 44, no. 4, 1990, pp. 668–670. *JSTOR*, <http://www.jstor.org/stable/4328197>. Accessed 22 Nov. 2021.

party.⁶⁵ Azhari won the election in an overwhelming victory, which ultimately served to further oppress the southern territories under the domination of the modernized north. Southerners were given little representation within Azhari's government, thus furthering public discontent in the south towards the new republican government.⁶⁶

Post Colonial period

In 1955, several military troops stationed in Torit, a city in the south, mutinied after refusing to relocate to Khartoum, a city in the north. While the mutiny was quickly quashed by the northern government, the discontent and agitation of the south against the north proved pervasive, and continued despite Azhari's efforts to pacify the southern territory. Over time, the southern resistance became more organized, leading to increased armed violent attacks against the north. These attacks were fueled by southern Sudanese nationalist sentiment, and a strong desire to be separate from the Muslim north's government, which had failed to adequately represent the Christian African south.⁶⁷

In 1956, Sudan was declared a republic, but the democratic processes were short lived. By 1958, the government was under the control of General Irahim Abbud, who commanded the Sudanese army. All political parties were dissolved under his leadership, and while his reign

⁶⁵ Larson, Greg. "Brief History of South Sudan."

⁶⁶ Alawad Sikainga, Ahmad. "South Sudan."

⁶⁷ Britannica Editors. "Southern Sudan Liberation Movement." *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., 2021, <https://www.britannica.com/topic/Southern-Sudan-Liberation-Movement>.

momentarily boosted the economy, Abbud was unable to take hold in the disparaged south, which was still waging an armed conflict against the government of the north.⁶⁸

Dissatisfaction with the north led to a series of political strikes and even a coup. All of these events still failed to give southern Sudan equal representation in the eyes of the national government.⁶⁹ The violence continued, and the south Sudanese rebels were reorganized in 1971 under General Joseph Lagu, who was also the head of the South Sudan Liberation Movement (SSLM).⁷⁰ Under his leadership, channels of discourse and negotiation were opened between the northern government and the southern rebellion. The talks between the two groups resulted in the Addis Ababa Agreement in Feb 27, 1972, which granted increased autonomy for the southern region, granting it its own separate legislature and executive body within the Sudanese government as a whole.⁷¹ The agreement temporarily satisfied the demands of the SSLM, and allowed for increased development in the south due to the ceasefire between the government and rebels.

By the 1980's. however, the civil war between the north and south resumed, in part due to the addition of the Muslim Brotherhood into Sudanese politics. The Brotherhood's Muslim policies alienated the south yet again, thus sparking violent clashes between the two groups, mainly along religious lines.⁷² The violence escalated, and was followed by a series of military

⁶⁸ Alawad Sikainga, Ahmad. "South Sudan."

⁶⁹ Larson, Greg. "Brief History of South Sudan."

⁷⁰ Alawad Sikainga, Ahmad. "South Sudan."

⁷¹ Larson, Greg. "Brief History of South Sudan."

⁷² Oxford Islamic Studies Editors. "Muslim Brotherhood in Sudan - Oxford Islamic Studies Online." *Oxford Islamic Studies*, 2021, <http://www.oxfordislamicstudies.com/article/opr/t125/e1641>.

coups, each led by a military leader who sought to increase their own personal power and influence within Sudan, often utilizing violent means at the expense of the rebels in the south.⁷³

Violence continued between the north and south for decades without a resolution until the early 2000s, when it seemed peace could finally be achieved. In 2005, the north and south of Sudan were able to reach a peace agreement.⁷⁴ By 2011, South Sudan voted to become an independent nation, completely separate from Sudan as a whole. Finally, after decades of violence and an estimated 1.5 million deaths, it seemed as though the southern Christian and traditional African population would have a peaceful state of their own.⁷⁵

The Birth of Sudan: 2011

In 2011, South Sudan was created after a referendum. An overwhelming majority of people voted in favor of the creation of an independent state, thus leading to the creation of a republic (as enumerated in the 2011 transitional constitution). The government was structured with an executive head, the president, and with a vice president, who is appointed by the president. Legislative power was bicameral. The political parties that contributed to the seats within both legislative bodies were elected from political parties, including the Sudan People's Liberation Movement (SPLM), the majority party in South Sudan, and others, including the Sudan People's Liberation Movement–Democratic Change (SPLM–DC), Union of Sudan African Parties (USAP), Sudan African National Union (SANU), the South Sudan Democratic

⁷³ Alawad Sikainga, Ahmad. "South Sudan."

⁷⁴ Alawad Sikainga, Ahmad. "South Sudan."

⁷⁵ USCRI. "1.9 Million Dead from Sudan's Civil War; More than 70,000 Deaths in 1998, Report Estimates - Sudan." *ReliefWeb*, 10 Dec. 1998, <https://reliefweb.int/report/sudan/19-million-dead-sudans-civil-war-more-70000-deaths-1998-report-estimates>.

Forum (SSDF), and the United Democratic Salvation Front (UDSF). The constitution also laid out the creation of 10 states within South Sudan, which would balance regional power between them.⁷⁶

Economic Issues

Upon independence, South Sudan was quick to assert its newfound liberation by replacing the Sudanese pound with its own currency, the South Sudanese Pound. The transition period was extremely unstable, as many South Sudanese communities were still using old Sudanese pounds, which were an outdated currency that held little value.⁷⁷ The heightened concerns of economic instability were only exacerbated by the continued issues with borders regarding the oil industry. After the partition, South Sudan found itself still using pipelines that technically belonged to Sudan, which was charging high fees for the usage. Sudan also began to confiscate portions of South Sudan's oil as "fees" for the use of the pipelines.⁷⁸

In South Sudan, the oil economy contributes greatly not only to economic stability but also political stability. The state generated significant profits off of the export and sale of oil.⁷⁹ To have Sudan continue to contest South Sudan's independence by interfering with their oil production further exasperated the domestic and international stability of the country. Furthermore, in addition to oil skirmishes, Sudan and South Sudan continued to argue over

⁷⁶ Alawad Sikainga, Ahmad. "South Sudan."

⁷⁷ Alawad Sikainga, Ahmad. "South Sudan."

⁷⁸ The World Bank Editors. "Overview." *World Bank*, 9 Apr. 2021, <https://www.worldbank.org/en/country/southsudan/overview#1>.

⁷⁹ Mayar, Manyang David. "South Sudan's Oil Industry Remains Dependent on Foreign Help." *VOA*, South Sudan's Oil Industry Remains Dependent on Foreign Help, 6 July 2021, https://www.voanews.com/a/africa_south-sudan-focus_south-sudans-oil-industry-remains-dependent-foreign-help/6207908.html#:~:text=South%20Sudan%20ranks%20third%20in,to%20increase%20production%20and%20revenues

border demarcation, which drew the fledgling government's attention away from domestic needs. Ultimately arguments over the border became violent, and the UN had to step in and officiate the demarcation of borders between the two countries.⁸⁰

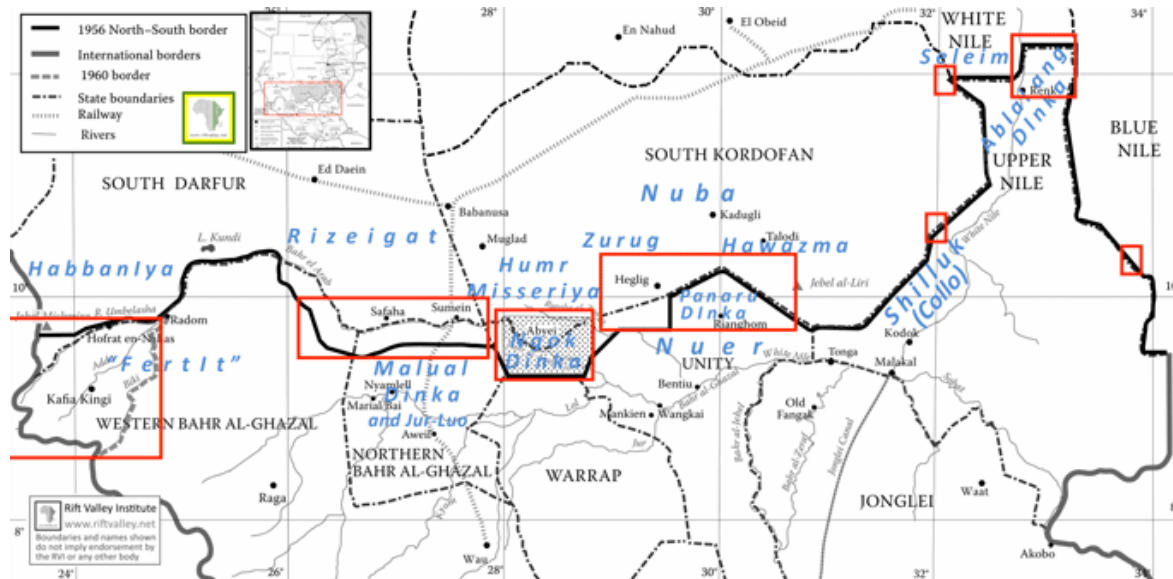


Figure 13.⁸¹

This figure shows some of the territorial regions which Sudan and South Sudan contest over.

South Sudanese Civil War: December 2013-February 2020

In the midst of facing continued economic issues, ethnic violence escalated between the Nuer and Dinka peoples. The conflict between them mainly focused around cattle ranching disputes over grazeable territory which led to a series of attacks between the two groups which

⁸⁰ International Crisis Group Editors. "Oil or Nothing: Dealing with South Sudan's Bleeding Finances." *Crisis Group*, 28 Oct. 2021, <https://www.crisisgroup.org/africa/horn-africa/south-sudan/305-oil-or-nothing-dealing-south-sudans-bleeding-finances>.

⁸¹ Rift Valley Institute Editors. "Contested Borderlands." *Contested Borderlands* | Rift Valley Institute, 1 Jan. 1970, <https://riftvalley.net/projects/contested-borderlands>.

resulted in the deaths of upwards of 1,500 people and displaced more than 10,000 people from their ancestral homes shortly after the 2011 referendum.⁸²

On top of the ethnic violence surrounding cattle ranching, party politics began to show signs of increased ethnic tension shortly after the independence of South Sudan, specifically between the majority party, the SPLM, and its political rivals. The President of South Sudan, Salva Kiir Mayardit, was elected following the referendum and belonged to the SPLM party. Kiir is also Dinka in ethnicity.⁸³ In 2013, he dismissed his presidential cabinet, including his vice president, Riek Macchar, who had been appointed by Kiir in 2011. Riek Macchar is Nuer in ethnicity.⁸⁴

At the same time, Machar began to articulate his ambitions to challenge Kiir for SPLM leadership, as well as his desire to be the party's presidential candidate in the country's 2015 elections. The political tensions became violent in December of 2013, when gunshots were exchanged between Kiir's and Machar's troops.⁸⁵ Kiir claimed that the violence was caused by Machar's failed coup to take over the government. At the same time, Machar claimed the violence was caused by Kiir in an attempt to eliminate political rivals.⁸⁶

⁸² Southall, Aidan. "Nuer and Dinka Are People: Ecology, Ethnicity and Logical Possibility." ; Alawad Sikainga, Ahmad. "South Sudan."

⁸³ France 24. "Salva Kiir: The Man Who Led South Sudan to Independence Then War." *France 24*, France 24, 9 July 2021, <https://www.france24.com/en/live-news/20210709-salva-kiir-the-man-who-led-south-sudan-to-independence-then-war>.

⁸⁴ France 24. "Riek Machar: Wily Warlord with Pivotal Role in South Sudan's Bloody History." *France 24*, France 24, 9 July 2021, <https://www.france24.com/en/live-news/20210709-riek-machar-wily-warlord-with-pivotal-role-in-south-sudan-s-bloody-history>.

⁸⁵ Alawad Sikainga, Ahmad. "South Sudan."

⁸⁶ Williams, Jennifer. "South Sudan's Civil War Has Raged for 5 Years. Now the Leaders of the Two Sides Are Meeting." *Vox*, Vox, 20 June 2018,

In the wake of the violent exchange, Machar emerged as the leader of the SPLA in Opposition (SPLA-IO), and their goal was to overthrow Kiir as a president.⁸⁷ The divisions between the two leaders were initially political in nature. However, over time, the violence evolved into an ethnic conflict too. The political conflict set Kiir's ethnic group, the Dinka, and Machar's ethnic group, the Nuer, against each other, thus spreading the violence beyond political actors and into the civilian realm.⁸⁸ Civilians began killing each other, spurred on by their respective political leaders. The violence intensified to an extreme extent, killing hundreds and displacing thousands. Both sides have been accused of human rights violations.⁸⁹

The violence between the Dinka and the Nuer did not come as much of a surprise, as the two ethnic groups had been historic rivals, rooted in agricultural versus pastoral practices, which eventually evolved into political competition for power.⁹⁰ The SPLM army is claimed to have carried out pogroms against the Nuer, as the army is largely Dinka in ethnicity. Attempts at localized mediation efforts did not make any progress in creating a lasting peace between the two political parties, and thus made no progress in calming the tensions between the two ethnic groups.⁹¹ Several cease-fire agreements were signed, but they were quickly tossed away as ethnic-based fighting continued.⁹² The violence reached such heights that the 2015 democratic

<https://www.vox.com/world/2018/6/20/17483232/south-sudan-civil-war-meeting-ethiopia-riek-machar-salva-kiir-peace-talks>.

⁸⁷ TRAC Editors. "SPLM/A in Opposition (SPLM/A)." *TRAC*, 2021, <https://trackingterrorism.org/group/splma-opposition-splma/>.

⁸⁸ Tut Pur, Nyagoah. "South Sudan at a Crossroads." *Human Rights Watch*, 9 July 2021, <https://www.hrw.org/news/2021/07/09/south-sudan-crossroads>.

⁸⁹ Alawad Sikainga, Ahmad. "South Sudan."

⁹⁰ Southall, Aidan. "Nuer and Dinka Are People: Ecology, Ethnicity and Logical Possibility."

⁹¹ Tut Pur, Nyagoah. "South Sudan at a Crossroads."

⁹² Larson, Greg. "Brief History of South Sudan."

elections for the executive office and legislative seats had to be postponed, which allowed Kiir to continue his executive rule over South Sudan. Kiir was later granted a constitutional extension of his term by the legislative branches.⁹³ This very extension of his political power increased polarization between the SPLM and the SPLM-IO.

While Kiir and Machar continued to wage war against each other, the lives of civilians became increasingly disrupted. By January 2015, an estimated 10,000 were dead, and approximately 2 million people were displaced in only 12 months.⁹⁴ A 2014 drought which spurred a famine also placed increased stress on the lives of civilians and soldiers alike, as resources became increasingly scarce.⁹⁵ Farming and pastoral practices had also been interrupted by fighting, which prevented a stable food supply.

In August 2015 Machar and Kiir signed another peace deal. Kiir was to remain as president and Machar was to return to his position as the vice president. However, the peace did not last long, and fighting between the two groups eventually erupted again. The issue which was particularly problematic between the two groups was Kiir's movement to increase the number of states from 10 to 28.⁹⁶ This change would essentially gerrymander votes in favor of Kiir, while dividing opposition forces across official state lines, and would completely disrupt the delicate balance of power between the original 10 states. When the policy was implemented and

⁹³ CFR Experts. "Civil War in South Sudan | Global Conflict Tracker." *Council on Foreign Relations*, Council on Foreign Relations, 2021, <https://www.cfr.org/global-conflict-tracker/conflict/civil-war-south-sudan>.

⁹⁴ CFR Experts. "Civil War in South Sudan | Global Conflict Tracker."; Tut Pur, Nyagoah. "South Sudan at a Crossroads."; Alawad Sikainga, Ahmad. "South Sudan."

⁹⁵ Francis, Okech, et al. "What's Driving South Sudan's Worst Food Crisis since Independence?"

⁹⁶ Alawad Sikainga, Ahmad. "South Sudan."

enforced, any semblance of security that had been created post 2011 referendum was destroyed.⁹⁷ Political leaders scrambled to collect as much political and economic influence as they could since a power vacuum was left in the wake of the new state creation. This led to small-scale violent skirmishes between the borders of the new states as power and influence were disputed.

In March 2016 the United Nations issued a report describing their findings of widespread human rights abuses throughout the young country which had been perpetrated by both the SPLM and the SPLM-IO, and between the Dinka and Nuer. The UN cited the government-aligned forces as having been responsible for the majority of the human rights violations against other soldiers and civilians since the beginning of the conflict in 2013.⁹⁸ To be sure, the civilian population suffered due to the disputes between two political parties. The violence endured by the civilian population included mass killing, sexual violence against women, targeting of hospitals and peacekeeping missions, and the systematic destruction of opposition towns and villages. In the report, the UN ultimately declared the actions on both sides of the violence as crimes against humanity.⁹⁹

Since its beginning in 2013, over 7 million people (approximately two thirds of the population) have been placed in desperate need of aid, with about 6.9 million of the 7 million

⁹⁷ Al Jazeera. "South Sudan President Creates 28 New States." *News | Al Jazeera*, Al Jazeera, 25 Dec. 2015, <https://www.aljazeera.com/news/2015/12/25/south-sudan-president-creates-28-new-states>.

⁹⁸ UN News. "Killings, Rapes in South Sudan Continued 'Unabated' after July 2016 Violence, UN Reports | Africa Renewal." *United Nations*, United Nations, 16 Jan. 2017, <https://www.un.org/africarenewal/news/killings-rapes-south-sudan-continued-unabated-after-july-2016-violence-un-reports>.

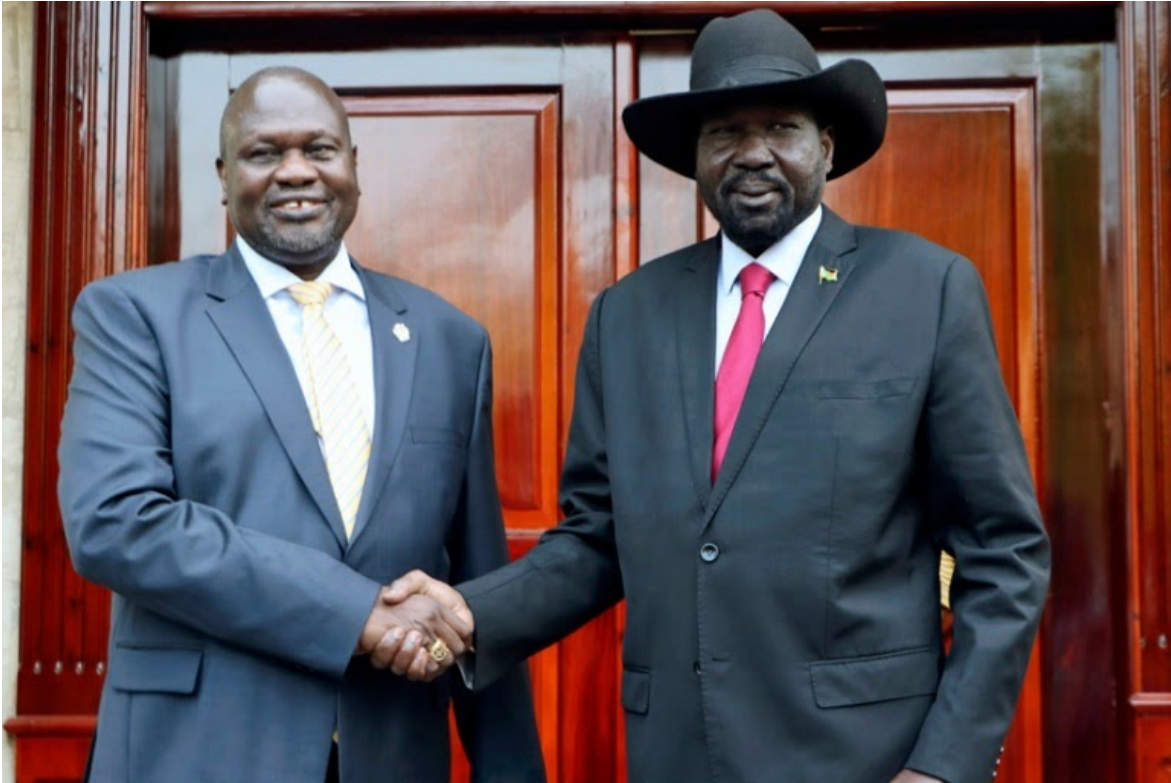
⁹⁹ UN News. "Killings, Rapes in South Sudan Continued 'Unabated' after July 2016 Violence, UN Reports | Africa Renewal."; CFR Experts. "Civil War in South Sudan | Global Conflict Tracker."

people experiencing hunger.¹⁰⁰ As the conflict continued past 2015 and into the late 2010s, an estimated 7.7 million people faced crisis levels of hunger due to food insecurity, economic instability, and ongoing violence against civilians.¹⁰¹ Harvests became less productive and food stores dried up over the span of the conflict. Millions were pushed to the brink of starvation for years as resources continued to dwindle. In 2017, famine was declared in two states in South Sudan.¹⁰² The disruption of humanitarian and intervention allowed for a prolonged state of conflict and insecurity which has not been resolved between Kiir and Machar even up until 2020.

¹⁰⁰ Save The Children. "South Sudan: Number of People in Crisis Levels of Hunger Increases by 50% in 10 Years - South Sudan." *ReliefWeb*, 9 June 2021, <https://reliefweb.int/report/south-sudan/south-sudan-number-people-crisis-levels-hunger-increases-50-10-years>.

¹⁰¹ Francis, Okech, et al. "What's Driving South Sudan's Worst Food Crisis since Independence?"

¹⁰² The Guardian Editors. "Famine Declared in South Sudan." *The Guardian*, Guardian News and Media, 20 Feb. 2017, <https://www.theguardian.com/global-development/2017/feb/20/famine-declared-in-south-sudan>.



*Figure 14.*¹⁰³

Vice President Machar (Left) and President Kiir (Right) shaking hands at the 2016 peace conference, which later failed.

¹⁰³ United Nations Peacekeeping. “Kiir and Machar Meet in What's Seen as 'Commitment to Peace' Peacekeeping.” *United Nations*, United Nations, 2021, <https://peacekeeping.un.org/en/kiir-and-machar-meet-whats-seen-commitment-to-peace>.

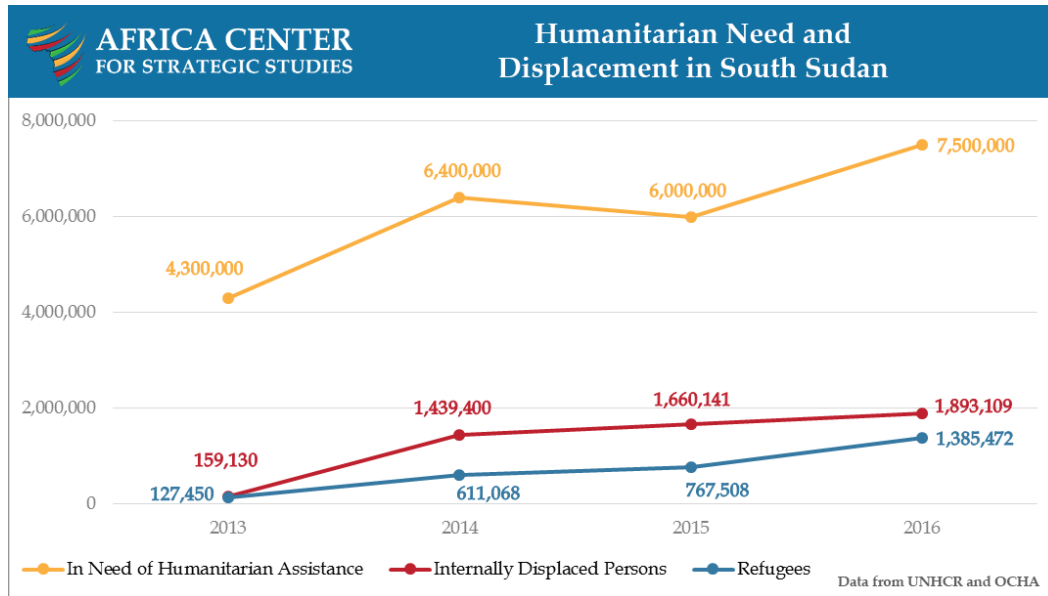


Figure 15.¹⁰⁴

This figure from the Africa Center for Strategic Studies shows the levels of need of Humanitarian Assistance in South Sudan in relation to the number of refugees and internally displaced persons from South Sudan. This figure has risen since 2013, in part because of the civil war and also because of the persistent and increasingly intense natural disasters which have uprooted many lives.

¹⁰⁴ the Africa Center for Strategic Studies March 14, 2017. "Humanitarian Need and Displacement in South Sudan – Africa Center." *Africa Center for Strategic Studies*, 23 Aug. 2021, <https://africacenter.org/spotlight/humanitarian-need-displacement-south-sudan/>.

How to approach power dynamics in Africa:

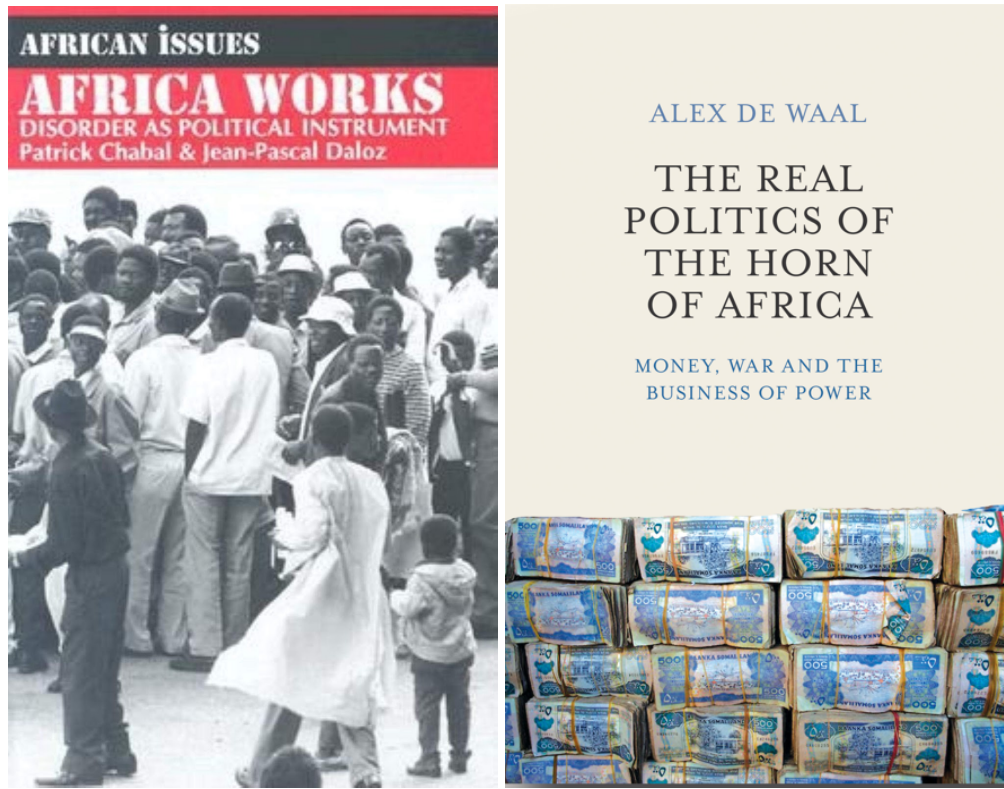


Figure 16.

Africa Works: Disorder as a Political Instrument, by Patrick Chabal and Jean-Pascal Daloz

Figure 17.

The Real Politics of the Horn of Africa: Money, War, and the Business of Power, by Alex De Waal

When analyzing the power dynamics in South Sudan for the fourth and final part of this study, it is important to discuss the lens used to analyze politics within South Sudan, drawing upon the political theories of Patrick Chabal and Jean-Pascal Daloz in their discussion of a neopatrimonial political system in Africa Works, and from Alex De Waal's discussion of a political marketplace in The Real Politics of the Horn of Africa.

Politics in South Sudan can be analyzed in a root-like structure. The structure begins with a certain condition and can then evolve into one branch of the root or another. Essentially, the argument is based on an analysis of South Sudanese politics that begins with a neopatrimonial political system which can evolve into a political marketplace. Understanding how politics function in South Sudan is critical to understanding the nature of violence within the country because while Neo-PATrimonial systems are able to avoid violence because of the patron's understanding of the regions needs, a political marketplace is essentially violent due to the economic mismanagement of scarce resources by political leaders.

In *Africa Works*, Patrick Chabal and Jean-Pascal Daloz discuss the existence of a neopatrimonial system of politics within Africa countries- specifically those located in or near the Horn of Africa. A neopatrimonial system can be defined as, "the vertical distribution of resources that gave rise to patron-client networks based around a powerful individual or party. Once argued to be necessary for unification and development after decolonization, these regimes have supplanted the role of the inherited colonial institutions for the benefit of a few individuals. It is significant nowadays because it affects almost all sub-Saharan states to differing degrees and is not regarded as corrupt behaviour by the population, who rely on the system for their own survival. Neopatrimonialism affects policy making, especially development projects, and is responsible for the misuse of aid and state budgets".¹⁰⁵

In their argument, they describe a system of politics that exists behind the facade of governing institutions that are derived from the West. In other words, a country may appear to be

¹⁰⁵ Francisco, Ana Huertas. "Neopatrimonialism in Contemporary African Politics." *E*, 26 Apr. 2013, <https://www.e-ir.info/2010/01/24/to-what-extent-can-neopatrimonialism-be-considered-significant-in-contemporary-african-politics/>.

governed by a democracy, but behind the curtain of modern, Western style legislative and executive systems, the country is truly ruled and regulated by a system of patrons and clients, who exchange goods and services as a means to regulate peace between parties. Politicians and other groups of influence and power hold private control over desirable resources and services, which allows them to barter with one another behind the curtain of a mock-democracy. Violence is generally avoided in a neopatrimonial state because patron politics are able to address regional issues more effectively than a western-style government which was imposed upon the country during colonial times. In other words, “patronage politics have managed to “supplant the legal-rational apparatus” (the adopted bureaucratic institutions) imposed on African nations during the colonial era. This has given birth to “hybrid” states, where modern formal institutions exist alongside regimes “based on the giving and granting of favours” and where the public/private dichotomy in policy decisions and resource distribution becomes hard to distinguish”.¹⁰⁶

The patron-client relationship created in a neopatrimonial system protects the interests of individuals and communities because the patron understands the needs of the client better than a imperially-imposed government. The only drawback of these exchanges is that in general, it mismanages the exchange of resources, and can lead to resource depletion and economic stagnation due to the lack of predictability between the exchanges of political leaders. Furthermore, the interference of resource flow in a country can greatly detriment civilians who depend on the free exchange of those scarce resources. From the outside, this system may seem

¹⁰⁶ Francisco, Ana Huertas. “Neopatrimonialism in Contemporary African Politics.”; Cromwell, E. and Chintedza, A. (2005) Neopatrimonialism and Policy Processes: Lessons from the Southern African Food Crisis, *IDS Bulletin* Vol. 36, Issue 2, retrieved from http://www.sarpn.org.za/documents/d0001230/Cromwell_Chintedza_May2005.pdf, accessed on 22.10.2009

chaotic, but is actually understandable to Africans, as this is the system of governance that builds on what has existed for centuries within Africa.¹⁰⁷

The system of neopatrimonialism is not sustainable given the growing resource scarcity, as the mishandling of resources and economic stagnation place extreme stress on the fundamental stability of a country. Eventually, states will be forced to either evolve or devolve from a neopatrimonial system. For some states, they may evolve into a system of governance that is more familiar to those of the west. For example, Ghana began as an example of a neopatrimonial system. However, as stress from the mishandled economy grew, Ghana became more and more aware of changes that needed to be made in order to prevent total political system failure. With this in mind, in 1992, Ghana took steps to become a true functioning democracy. No longer do exchanges happen behind the curtain, and thus far, the system has been successful in avoiding succumbing to economic instability or resource mismanagement.¹⁰⁸

Rwanda is another example of a neopatrimonial system evolving into a regime that no longer relies on the bartering of goods and services. However, unlike Ghana, Rwanda stabilized under the rule of Paul Kagame, who has been the “elected” president since 2000. Under his dictatorship, Rwanda has been able to set aside the exchange and trade of favors for political power, as Kagame holds absolute rule over the entire political system. The monopoly of power ceases all competition or ability to rise and fall from power due to personal coffers because what Kagame says, goes. If a country has a truly powerful dictatorship it cannot be a neopatrimonial

¹⁰⁷ Chabal, Patrick, and Jean-Pascal Daloz. *Africa Works: Disorder as Political Instrument*. Currey, 2010.

¹⁰⁸ Alexander, Lynsey. “Democracy in Ghana: An Evolution of Freedom and Stability.” *The Borgen Project*, Lynsey Alexander https://Borgenproject.org/Wp-Content/Uploads/The_Borgen_Project_Logo_small.Jpg, 18 Apr. 2020, <https://borgenproject.org/democracy-in-ghana/>.

system, as the need for patronage is minimized. Resources in this system may still be mismanaged under the dictator, but would not be a function of a lingering neopatrimonial system, but rather caused by the mismanagement of power by the all powerful singular actor in charge.¹⁰⁹

On the other hand, a neopatrimonial system can also devolve into an even more unstable system, in which there are ultimately not enough resources left to maintain the balance of power between the competing economic and political actors. When the actors are not able to be satisfied by their payments and exchanges, they resort to violence in order to get what they desire. Thus, the system devolves from a system of balanced exchanges into a system of violent coercion, extortion, and conflict between people of power who are competing to have their demands satisfied. This describes the turbulence of the system that De Waal describes as the “political marketplace” within African politics. De Waal describes that, “The political marketplace is a contemporary system of governance, characterized by pervasive monetized patronage, in the form of exchange of political loyalty or cooperation for payment. The countries where this occurs share three principal features, namely (a) the dominance of interpersonal political bargaining over formal rules and procedures, (b) pervasive rent-seeking by members of the political and business elite, and (c) integration into a global patronage order. The political marketplace is not a transitional or outdated system that is about to be replaced by Weberian states, but a flexible and dynamic governance order.”¹¹⁰ Importantly, “The central dynamic in the

¹⁰⁹ Reyntjens, Filip. “Rwanda, Ten Years on: From Genocide to Dictatorship.” *African Affairs*, vol. 103, no. 411, 2004, pp. 177–210. *JSTOR*, <http://www.jstor.org/stable/3518608>. Accessed 22 Nov. 2021.

¹¹⁰ De Waal, Alex. “The Political Marketplace: Analyzing Political Entrepreneurs and Political Bargaining with a Business Lens.” *Reinventing Peace*, 17 Oct. 2014, <https://sites.tufts.edu/reinventingpeace/2014/10/17/the-political-marketplace-analyzing-political-entrepreneurs-and-political-bargaining-with-a-business-lens/>.

political management of a political marketplace is the relationship between the political budget and the price of loyalty. The political budget refers to the funds available to the ruler for discretionary spending on ensuring the loyalty of members of the political elite. Its twin concept is the price of loyalty: the prevailing market rate for ensuring the allegiance or cooperation for a period of time or a particular activity...The size of the political budget is a function of the rents that the ruler can obtain (income), and the demands on that fund from members of the political elite (expenditure). It is the heartbeat of the political marketplace system, and its health is the indicator of regime survival or crisis”.¹¹¹

There is no patronage in the political marketplace. Instead, the system relies on buying the loyalty of other powerful individuals. In De Waal’s argument, these changes in the price of loyalty to a political figure can be violent, and change often as the prices of political favors, resources, and money change. Furthermore, unlike a neopatrimonial system, there are no patrons who use more the facade of a western system of government to properly address regional populations. The leader in a political marketplace may use a western style of government or a traditional style, and the leader does not necessarily choose the form of government that is most familiar to the region. Essentially, as the price of allegiance changes, violence often results.¹¹²

In the case of South Sudan, since its independence in 2011, it has always been in a state of a violent political marketplace. It is possible that when South Sudan was part of Sudan, even prior to colonization, it was like a neopatrimonial system in that properly balanced power

¹¹¹ De Waal, Alex. “The Political Marketplace: Analyzing Political Entrepreneurs and Political Bargaining with a Business Lens.”

¹¹² Waal, Alex de. *The Real Politics of the Horn of Africa Money, War and the Business of Power*. Polity, 2017.

between different tribes and groups that lived in the territory (even though it could not have been defined as neopatrimonial, since the “neo” refers to the fact that the formal or facade aspects of the government reflect a modern, western state). However, since the colonization of Sudan by the British, the South of Sudan has been the location of a century of violent altercations, and was never given the time to settle or to focus on balancing power for the good of regional peace. The violence continued well into the formation of South Sudan. Even when the republic was formed with a new constitution, South Sudan still had no opportunity of reverting back into a neopatrimonial system. All the country had known for generations was violence and systems that resembled a political marketplace. Thus, it is really no surprise that after the formation of South Sudan, it fell back into a civil war, as the systems of a political economy still continued even after the implementation of a republican government. South Sudan was doomed from its birth.

It is important to note that violence within a political marketplace differs from the ethnic-based violence studied in the previous section. Indeed, within South Sudan the Dinka and Nuer ethnicities play little to no role within the political marketplace, as these independent ethnic groups do not barter for political influence despite the constant tug of war between Kiir and Machar in the political marketplace. Rather, the ethnicities side behind political leaders who partake in the political marketplace as actors, but not necessarily as representatives of an ethnicity. This makes the ethnic violence distinct from violence that naturally occurs in a political marketplace. While political marketplace violence is caused by disparities in the cost of power and influence, the ethnic violence in South Sudan is a function of political loyalty behind a leader who partakes in the political marketplace (yet these leaders do not barter for power on behalf of their respective ethnicities). People become loyal to their respective political leader

because they believe that there are potential advantages partaking in the violence, including political influence, monetary incentives, and the ability to socially advance. This distinction becomes important for the argument in the next section, as studying the inherent nature and causes of the violence is indicative of how precisely climate change influences violence within South Sudan over time.



Figure 18.¹¹³

This graphic shows the forces of competition within a political marketplace.

¹¹³ Williams, Isaac. "Insights from the Management Theory of the Political Marketplace." *Reinventing Peace*, 12 Aug. 2014, <https://sites.tufts.edu/reinventingpeace/2014/08/12/insights-from-the-management-theory-of-the-political-marketplace/>.

Climate Change and Violence in South Sudan

In South Sudan, people are not engaging in violent altercations because of climate change. Increasing average world temperatures and/or changes in rain patterns are not causing people to fall into violence. The connection between climate change and violence is not as direct as that. Rather, climate change plays an indirect role in the South Sudanese conflict. Within the political marketplace it has subtly altered conditions which later spark or intensify outbreaks of violence. Climate change in this sense should be viewed as a stressor, rather than a direct cause of violence. As described in the first section, climate change places increased stress on the security of food, health, shelter, and economy. The increased lack of accessibility combined with preexisting political and ethnic tensions in South Sudan's political marketplace has led to an exacerbation of violence in the region which is unlikely to end, given the hopeless outlook for both climate change resolution and the deeply rooted predisposition to violence which South Sudan has had since its birth as a nation.

As mentioned in section 1, insecurity from the decades of war in combination with increasing climate change, specifically extreme droughts and floods, have threatened South Sudan's security of shelter, food and water, health, and economy, with as much as 51% of South Sudan's population facing acute food insecurity alone.¹¹⁴ However, section 1 did not address one other important type of security: political security. Climate change does not directly influence political security as it does the other four types of security that were analyzed in section 1. A flood will not destabilize South Sudan's government. It will, however, stress the political system indirectly. For example, floods caused by climate change apply stress on the government which

¹¹⁴ Phiri, Tomson. "South Sudan Hunger Deepens Due to Drought, Floods and Uncertain Political Future: World Food Programme."

is expected to respond in some manner. As politics in South Sudan are directly related to violence given the nature of the existing political marketplace described in section 3, it follows that climate change would have a similar indirect influence on violence in South Sudan rather than a direct influence. Violence does exist within South Sudan without the added stressor of climate change, and has existed in the territory for decades as seen in section 2. However, due to the increased damage of climate change to the basic human securities of shelter, food and water, health, and economy, an increased stress on South Sudan's already unstable political marketplace exists. Another factor to add into South Sudan's political security is the evident ethnic tension between the Dinka and Nuer people, which is also clearly tied to South Sudan's politics and has an indirect relationship with climate change.

For the purpose of this argument, the influence of climate change on the political marketplace will be viewed separately from climate change's influence on ethnic violence, despite the linked nature of the two variables. It will be difficult to untangle the two given the deeply intertwined ethnic conflict and politics in South Sudan, but isolating the two will be key to studying different stressors which contribute to exacerbated instances of violence within the country. Recall from the previous section that while political marketplace violence is caused by disparities in the cost of power and influence, the ethnic violence in South Sudan is a function of political loyalty behind a leader who partakes in the political marketplace (Machar and Kiir do not barter for power on behalf of their respective ethnicities, but rather for their own personal gain and influence within the political system). Essentially, violence within the political marketplace is macro in nature, as it involves the violence of the political system, while ethnic

violence is micro in nature because it involves the study of subgroups which fall under the system.

Another note to be made prior to isolating and evaluating the extent to which climate change plays on violence in South Sudan is the lack of data on the nature of violence within South Sudan. Violence over time needs to be evaluated, and the increasing role of climate change on violence documented via observational means. There is numerical data on violence within South Sudan; this paper utilizes data on South Sudan from ACLED, which is a data source which provides “highest quality and most widely used real-time data and analysis source on political violence and protest around the world”. While helpful for identifying the isolated number of events of each *type* of violence (battles, violence against citizens, riots, explosions, protests, strategic developments, et cetera), it does not specify the *nature* of the violence as “ethnic” or “political”.¹¹⁵ The trends assist in visualizing the increase in violence over time within South Sudan, which helps suggest that increased stress is being placed upon political and ethnic tensions, but does not allow us to numerically show causality or calculate the degree to which climate change influences violence. So, the nature of the argument to follow will be observational in nature, while being supplemented with the data available on those instances of violence.

¹¹⁵ Stimson Center. “Data Overview: Violence against Civilians in South Sudan • Stimson Center.” *Stimson Center*, 14 Oct. 2020, <https://www.stimson.org/2020/data-overview-violence-against-civilians-in-south-sudan/>. ; ACLED. “Full Dashboard.” *ACLED*, 4 Oct. 2020, <https://acleddata.com/dashboard/#/dashboard>.

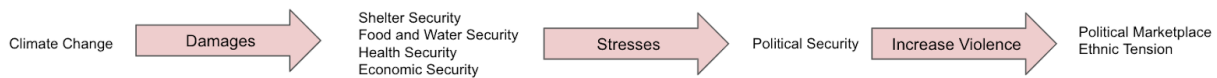


Figure 19.

This graphic illustrates the outline of my argument for how climate change affects violence in South Sudan by acting as a stressor.

Violence within the Political Marketplace and Climate Change

First, the effect of climate change on violence within the political marketplace will be evaluated. Recall that this type of violence will be based more in transactions and power disparities between leaders and actors of political influence within South Sudan.

Climate change does not directly cause violence in South Sudan, it acts as a stressor which exasperates conditions which lead to violence. Within a political marketplace, climate change acts as a stressor upon key actors within the system. In other words, climate change applies stress to one thing, which applies stress to the political leader, which leads them to violence within the marketplace. Key actors within the political marketplace include anyone who is actively involved in the bartering and exchange of goods and services as a means to secure influence over society. Two such actors include the President of South Sudan, Salva Kiir Mayardit, and the Vice President, Riek Machar. While these two men are both hugely significant rivals within the marketplace, they are not alone. Other actors who vie for political power and influence the exchange rate of goods and services also include Petronas, which is the company

that owns the majority of South Sudan's oil, the South Sudan Opposition Alliance (an Anti-Kiir Political Party formed by refugees in Ethiopia), and the Gold and Consolidated Minerals and Energy Resource Investment Company Equator Gold, which control the gold mining industries in South Sudan. While these smaller actors are important to the political marketplace, their actions are decidedly less violent than those of Machar and Kiir. For this purpose the focus will be on the violent exchanges between the President and Vice President and how they are tied to climate change.

The civil war began in 2013, when President Kiir fired Vice President Machar from his position as Vice president during his coup. Following Kiir's consolidation of power, the SPLM-IO was formed in opposition to Kiir and in support of Machar. Violence began between the two groups, each claiming that their respective leader deserved to sit in the rightful position of power within the country. Violence spread throughout the country, with people fighting in organized armies on either the side of Kiir or Machar. Ordinary people joined the violence as a means of elevating their own societal position, hoping that their respective political leader would be able to increase their economic standing and personal security, both of which had been insatiable for decades in the past. For the everyday citizen, Kiir and Machar provided hope to end the decades of instability in South Sudan. These armies were funded by the SPLM and SPLM-IO respectively. These two actors in the political marketplace do not agree on the price of power, as Machar's rebel group does not believe the benefits provided by Kiir's rule match the costs to rule under Kiir. Furthermore, both men profit as the leaders of their own parties. The cost of being subservient to the other is far smaller than the profit each man makes as the leader of their own parties, even despite the economic mismanagement, death, and displacement that their

decisions cost the country as a whole. Thus, violence within the South Sudanese political marketplace between the two main actors is inevitable and has been continuous since the beginning of the civil war in 2013.

Violence between the followers of Machar and Kiir followers has increased since 2013 as the civil war matured. Upon studying the available data on violence in South Sudan since the beginning of the civil war in 2013, one can notice that the organized violence between the SPLM and SPLM-IO has intensified and relaxed in accordance with climate change trends. Figure 20 shows a graph which describes data collected in South Sudan on the annual number of violent altercations within the nation from 2014-2017. In this graph, one can see the obvious peaks of violence in 2014 and 2017 compared to 2015 and 2016 which comparatively experienced lower levels of systematic violence between the SPLM and SPLM-IO.¹¹⁶ Figure 21, on the other hand, shows the relationship between periods of flooding and violence in South Sudan. The year of 2017 in particular stands out because it obviously has some of the highest rates of violence during an especially intense and prolonged period of flooding in 2017. 2014 also stands out with very high rates of violence, but is not marked as during an intense flooding period. This is because during 2014, South Sudan suffered an extreme period of drought, and freshwater was scarce for populations across the country.¹¹⁷

¹¹⁶ Author: Margaux Pinaud Margaux has been with ACLED since 2015 and is now a Research Co-Manager for the Africa desk. In this role, et al. "South Sudan – April 2017 Update." *ACLED*, 23 Feb. 2020, <https://acleddata.com/2017/05/16/south-sudan-april-2017-update/>.

¹¹⁷ Author: Erik Plänitz <http://Duhamel> Erik Plänitz is an Africa Researcher with ACLED and PhD fellow at the Arnold-Bergstraesser-Institute/University of Freiburg. He holds a Master degree from Gothenburg University and is currently working on climate change, et al. "Missed Expectations and Disorder: The Dilemma of Political Response to Disasters." *ACLED*, 26 Feb. 2020, <https://acleddata.com/2019/08/14/missed-expectations-and-disorder-the-dilemma-of-political-response-to-disasters/>.

The years of 2014 and 2017 may be especially indicative of how climate change exasperates instances of violence within South Sudan. Though data sets are lacking to calculate correlation, and four years alone is not nearly enough data to provide a statistically significant relationship, these observations seem to suggest that periods of extreme natural disaster due to climate change intensify violent altercations. This could in part be because of how the SPLM and SPLM-IO are funded and staffed. Both parties and armed wings rely on funds from industries throughout the country. Environmentally stable years, such as 2015 and 2016 experience less violence because groups which profit off of the conflict, such as the war industry, and the political leaders (Kiir and Machar) can comfortably collect funds and pay their own armed forces and pay off other actors within the political marketplace. When vulnerable natural resources such as the wood, arable soil, and crop harvests become scarce due to climate change, and output and profit is subsequently strained, actors within the political marketplace react violently, as they resort to violent means in order to collect the resources needed to satisfy the market prices of political power.¹¹⁸ The SPLM and SPLM-IO become more frantic and violent as a result of the climate change driven disasters which drive resource scarcity which lead to a lack of funds to use in the political marketplace thus leading to a reliance on violent means to maintain power in the political marketplace. This is essentially what we see when observing figures 20 and 21, as the violence increases and decreases in unison with the presence of climate change-driven natural disasters.

¹¹⁸ OEC Editors. "South Sudan (SSD) Exports, Imports, and Trade Partners."

Figure 1: Conflict Events and Fatalities in South Sudan, over January 2014 - April 2017

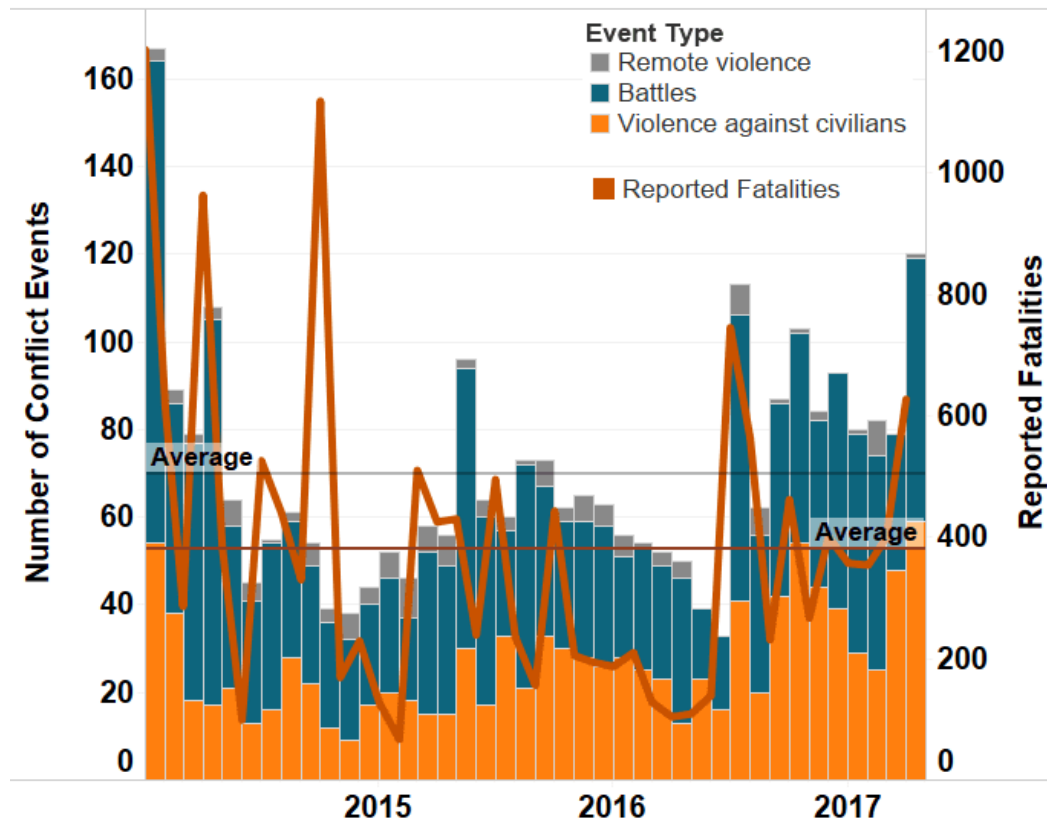


Figure 20.¹¹⁹

This graphic shows the events of conflict in South Sudan, and the red trendline illustrates the reported fatalities of each instance over the years.

¹¹⁹ Author: Margaux Pinaud Margaux has been with ACLED since 2015 and is now a Research Co-Manager for the Africa desk. In this role, et al. "South Sudan – April 2017 Update." *ACLED*, 23 Feb. 2020, <https://acleddata.com/2017/05/16/south-sudan-april-2017-update/>.

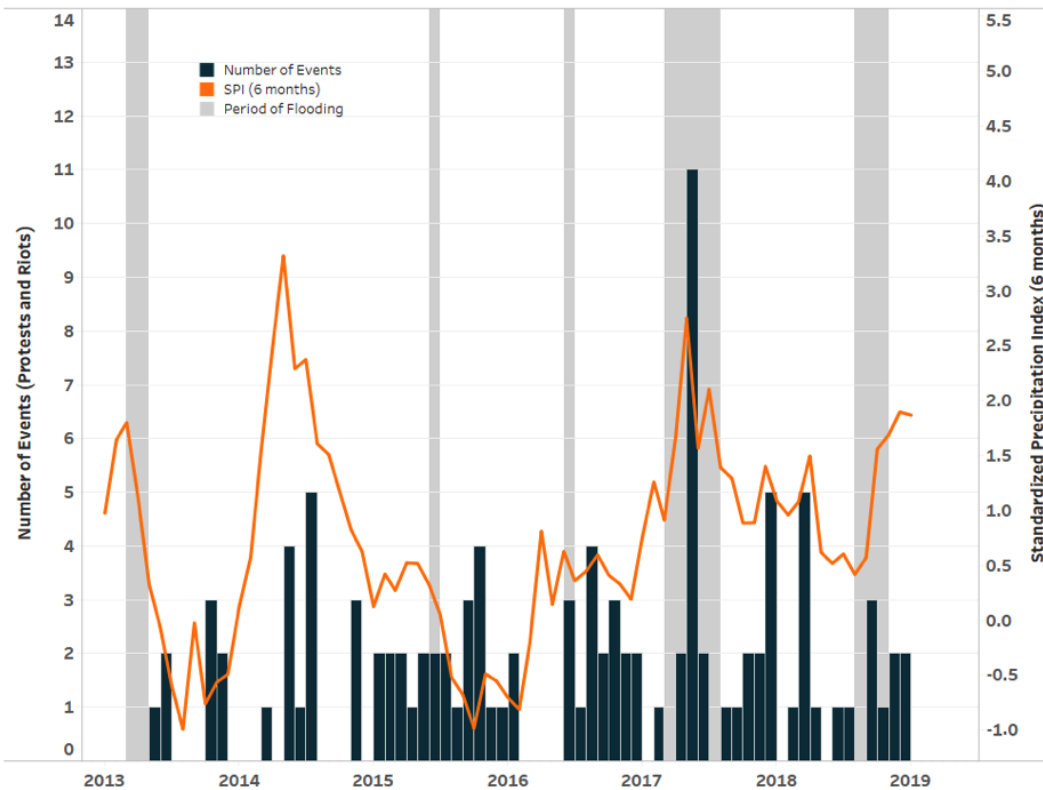


Figure 21.¹²⁰

Precipitation, flooding, and events of Protest and Riots (2013-2019). This Graph shows the relationship between flooding and periods of conflict.

Ethnic Violence in South Sudan and its Relationship with Climate Change

Ethnic violence is one of the byproducts of the Machar versus Kiir feud. However, it is not the same type of violence as that which occurs in a political marketplace (it does not concern

¹²⁰ Author: Erik Plänitz [http://Duhamel Erik Plänitz is an Africa Researcher with ACLED and PhD fellow at the Arnold-Bergstraesser-Institute/University of Freiburg. He holds a Master degree from Gothenburg University and is currently working on climate change , et al. "Missed Expectations and Disorder: The Dilemma of Political Response to Disasters." ACLED, 26 Feb. 2020, https://acleddata.com/2019/08/14/missed-expectations-and-disorder-the-dilemma-of-political-response-to-disasters/.](http://Duhamel Erik Plänitz is an Africa Researcher with ACLED and PhD fellow at the Arnold-Bergstraesser-Institute/University of Freiburg. He holds a Master degree from Gothenburg University and is currently working on climate change , et al.)

the exchange of favors for political power). As such, it shall be studied as a micro byproduct of the macro Kiir and Machar political rivalry with its own set of climate change-linked stressors.

The civil war began in 2013, when President Kiir fired Vice President Machar from his position as Vice President during his coup. Following Kiir's consolidation of power, the SPLM-IO was formed in opposition to Kiir and in support of Machar. Violence began between the two groups, each claiming that their respective leader deserved to sit in the rightful position of power within the country. Violence spread throughout the country, with people fighting on either the side of Kiir or Machar. Those who sided with Kiir fought on the side of his ethnicity, the Nuer, while Machar represented the Dinka tribe.

Initially, the violence between the two groups was political in nature, and followed the orders given by Machar and Kiir. However, as the civil war matured, the ethnic conflict began to separate itself from the political violence. With time, two ethnic groups began to fight each other without the directive of their political representatives and fought simply because the other ethnicity had become their rival and threat to survival. In other words, the ethnic conflict became less and less political over time and focused more on the disparities between the Nuer and Dinka people rather than their political orientation, thus excluding the influence of other actors within the political marketplace and focusing more exclusively on ethnicity.

This evolution of violence is key to understanding the evolution of conflict in South Sudan. One can think of the change in violence in terms of a metaphorical box. Within the box are the two big elephants in the room, Kiir and Machar, who are utilizing violence within the political marketplace in order to rise in power relative to the other. Within the box, they have utilized ethnic differences between the Nuer and Dinka people in order to progress their own

political goals. However, ethnic violence can only be forced and manipulated for so long before it starts to take on a narrative of its own, eventually escaping the confines of the box, beyond the control of Kiir and Machar. Even if the leaders wanted, their initial “tools” of power mongering had evolved into violence uncontrollable by any politician.

Essentially, the ethnic conflict has become independent of the original issue between Kiir and Machar. Furthermore, when the “micro” ethnic violence escaped the “macro” box, it also perpetuated other micro-causes of violence beyond just ethnic tension that are also seen in South Sudan’s micro violence instances. Examples of other types of micro violence that escaped the political marketplace include small, independent instances violence based on the violent nature of a war economy, and psychosocial violence. These smaller conflicts also enabled small skirmishes between local leaders who were utilizing the violence in an attempt to improve their own station. The violent actions of local political figures are similar to the violence that occurs in a large political marketplace, such as that between Kiir and Machar, but on a much smaller scale.

While the violence perpetuated by the war economy and the small political marketplace are less potent in nature than the ethnic violence, they still contribute to the medley of smaller-scale violence that displaces, injures, and kills thousands in South Sudan. In the case of war economy based violence, all economics is violence and vice versa. Scarcity drives violence, and everything is fightable. Every resource matters. This is especially important in the context of climate change, which makes resources scarce. Psychosocial violence on the other hand has taken root in South Sudan simply because, for decades, violence had become a way of life. All social exchanges and mannerisms have essentially been tainted by a long history that is rooted in

communication via violence. There are few small political actors who escape the confines of the macro box, engaging in their own small transactions and negotiations for power on a local scale.

Conflict between the Nuer and Dinka is not a new development, as territorial skirmishes over grazing land for their pastoral lifestyles were common even before the 2013 civil war. While the previous conflicts between the two ethnic groups were not large in scale, they were sufficient enough to create a sort of psycho-social hatred, which had deep roots in historical conflicts between the Nuer and Dinka. The preexistence of these sentiments primed the two ethnic groups for increased violence when Machar and Kiir began their violent altercations over political power.

The political actions of Machar and Kiir were “power grab” in nature, but the division of fighters and support within the SPLM and SPLM-IO divisions fell along ethnic lines. Those in the SPLM who supported Kiir were mainly Nuer and the SPLM-IO was mainly Dinka in ethnicity, like Machar. Violence eventually transcended the framework of a political conflict when the Dinka and Nuer began violent altercations with each other outside of political directives; the two groups began to engage the other violently, originally based on rekindled hatred for the other ethnicity due to scarcity and political affiliation. But as mentioned before, the ethnic violence escaped the box, becoming a conflict that is not necessarily political in nature. The Nuer and Dinka have economic and political reasons to fight now, independent of their original patrons. Climate change plays into that - for example, as herders need to move further out with their herds for new grazeable land, they encroach on historic territorial borders belonging to rival agriculturalists. Essentially, the existing ethnic hatreds between the two groups were exasperated due to the civil war in 2013.

The conflict changed from political in nature to ethnic in nature when the SPLM and SPLM-IO armies began to indiscriminately kill civilians of the opposing ethnicity rather than containing fighting to a purely political army versus army scenario. The first purely ethnic conflicts began with violence against a few civilians of the opposing ethnicity, individuals who were in the wrong place at the wrong time. Those instances began to grow in scale and intensity, however, as the two groups attacked entire villages. In particular, fighting was focused on disputed grazing lands between the two groups, each claiming that the land was within their pastoral territory.

In particular, instances of violence instigated by the Nuer against the Dinka increased over time, predominantly in areas of disputed territory. Looking at Figure 21 below, one can see that historic Nuer territory encompasses the majority of land surrounding the Nile river as it flows into the country (most is part of the state of Jonglei).¹²¹ The state of Jonglei was historically popular due to its extremely arable soil which surrounded the river, thus giving it the largest population compared to other South Sudanese States, even despite not having any prominent cities of its own(see figure 22).¹²² However, since 2013, Jonglei has experienced terrible periods of flooding which have only intensified over time as climate change intensifies the wet season and flooding from the Nile River. As many as 370 thousand people in Jonglei are extremely impacted by the floods (see figure 23).¹²³ As mentioned in Section 1, the increasingly

¹²¹ N, Bryan. "Dinka and Nuer of South Sudan." *CartoMission*, 12 Aug. 2014, <https://cartomission.com/2014/06/03/dinka-and-nuer-of-south-sudan/>.

¹²² Vallet, Maryada E., et al. "Where Are the Development Actors in Protracted Crises? Refugee Livelihood and Food Security Outcomes in South Sudan Demonstrate the Potential for Fragile Settings." *World Development Perspectives*, Elsevier, 2 Nov. 2021, <https://www.sciencedirect.com/science/article/pii/S2452292921000825>.

¹²³ Vallet, Maryada E., et al. "Where Are the Development Actors in Protracted Crises? Refugee Livelihood and Food Security Outcomes in South Sudan Demonstrate the Potential for Fragile Settings."

severe flooding greatly impacts the shelter, food and water, health, and economic security of individuals within South Sudan. The intense floods also damaged the natural grazing lands of Jonglei, forcing the native Nuer people living there to look elsewhere to graze their herds, find new homes, and seek freshwater stores, specifically towards Dinka grazing land which is not as affected by the increasingly detrimental wet seasons. Thus, the Nuer have instigated more and more skirmishes along Jonglei's border (see figure 25 and 26).¹²⁴ In 2013, approximately 383,000 people were internally displaced from Jonglei due to flooding. By 2019, approximately 1,352,000 people had been displaced due to flooding.¹²⁵ The increased displacement due to flooding in Jonglei was caused in part due to the increased intensity and frequency of the floods, but also by the fallen resilience of families and communities that live there. After so many cycles of increased flooding, the health, economic, food, and shelter costs of living there outweigh the benefits of living close to a fertile river.

In 2013, there were 375 recorded instances of violence in Jonglei with an estimated 4.363 fatalities.¹²⁶ As of December 31, 2019, there were 521 instances of violence recorded within the year (account of fatalities unavailable for 2019).¹²⁷ Due to the increase in violence within the

¹²⁴ USAID. "Recent Reported Incidents of Violence in South Sudan (Last Updated 04/11/14) - South Sudan." *ReliefWeb*, Dec. 2014, <https://reliefweb.int/map/south-sudan/recent-reported-incidents-violence-south-sudan-last-updated-041114>.

¹²⁵ ECHO. "South Sudan - Violence, Floods, Displacement in Jonglei (DG Echo, Ocha, Media) (Echo Daily Flash of 11 August 2020) - South Sudan." *ReliefWeb*, 11 Aug. 2020, <https://reliefweb.int/report/south-sudan/south-sudan-violence-floods-displacement-jonglei-dg-echo-ocha-media-echo-daily>.

¹²⁶ Stimson Center. "Data Overview: Violence against Civilians in South Sudan • Stimson Center."; OHCHR. "Armed Violence Involving Community-Based Militias ... - OHCHR." *United Nations Human Rights*, Mar. 2021, <https://www.ohchr.org/Documents/Countries/SS/Jonglei-report.pdf>.

¹²⁷ ACLED. "Full Dashboard."; OHCHR. "Armed Violence Involving Community-Based Militias ... - OHCHR."

state in conjunction with the ever intensifying natural disasters, Jonglei experienced the largest number of internally displaced people (as seen in figure 24).¹²⁸

The case of Jonglei's conflict provides valuable insight on the nature of the violence occurring in the region. It is likely the displacement of people due to flooding in Jonglei is closely correlated to the violence that ensued between the Nuer and Dinka people as competition for grazeable and farmable lands intensified. Data sets are needed to help prove correlation between the two variables, however it seems that the ethnic conflict in Jonglei is largely driven by displacement due to increased severity of climate change related disasters.

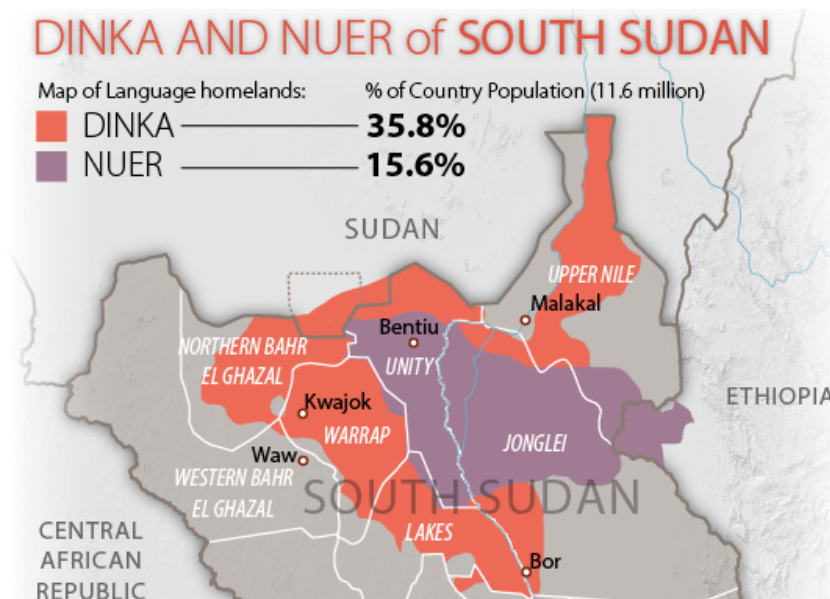


Figure 22.¹²⁹

This map shows the historic territories of the Dinka and Nuer peoples.

¹²⁸ Vallet, Maryada E., et al. "Where Are the Development Actors in Protracted Crises? Refugee Livelihood and Food Security Outcomes in South Sudan Demonstrate the Potential for Fragile Settings." *World Development Perspectives*, Elsevier, 2 Nov. 2021, <https://www.sciencedirect.com/science/article/pii/S2452292921000825>.

¹²⁹ N, Bryan. "Dinka and Nuer of South Sudan." *CartoMission*, 12 Aug. 2014, <https://cartomission.com/2014/06/03/dinka-and-nuer-of-south-sudan/>.

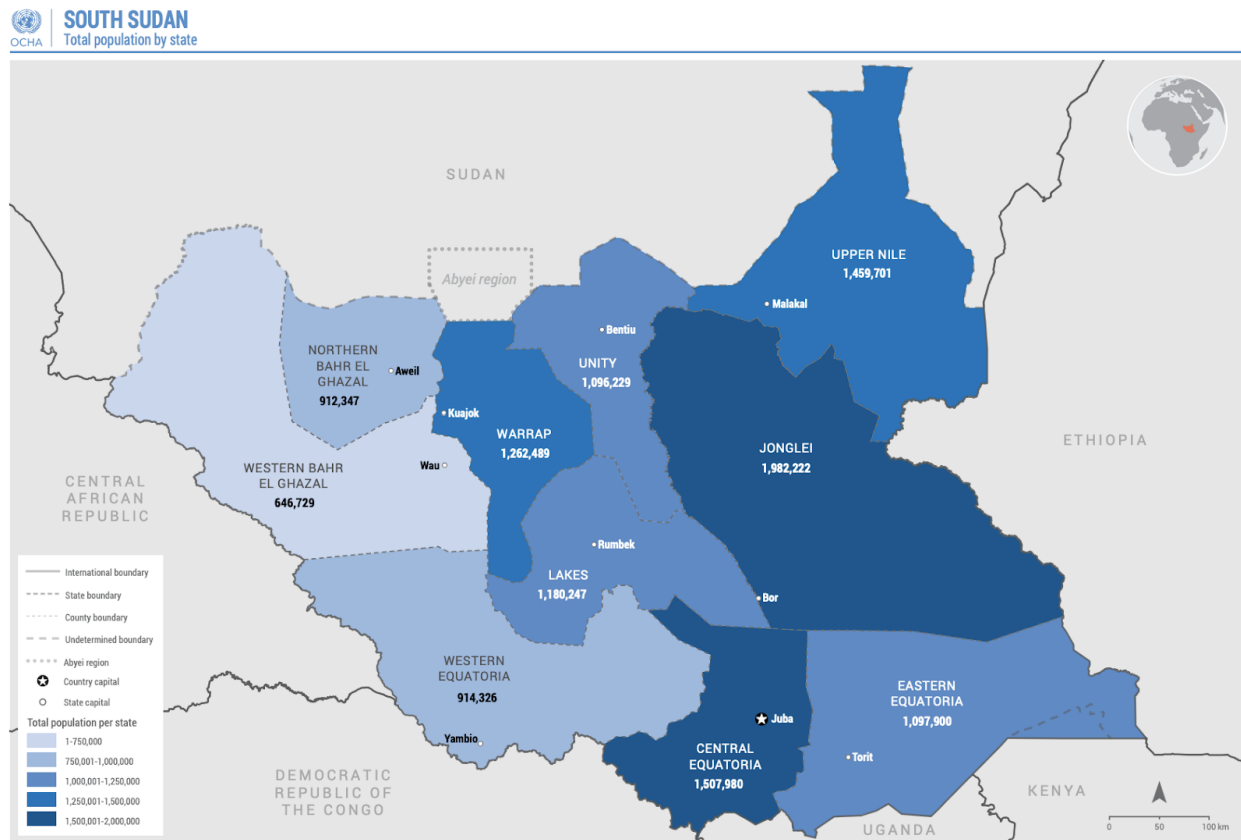


Figure 23.¹³⁰

This OCHA map shows the total population of each of South Sudan's 10 states.

¹³⁰ Vallet, Maryada E., et al. "Where Are the Development Actors in Protracted Crises? Refugee Livelihood and Food Security Outcomes in South Sudan Demonstrate the Potential for Fragile Settings." *World Development Perspectives*, Elsevier, 2 Nov. 2021, <https://www.sciencedirect.com/science/article/pii/S2452292921000825>.

FLOOD-AFFECTED PEOPLE BY STATE

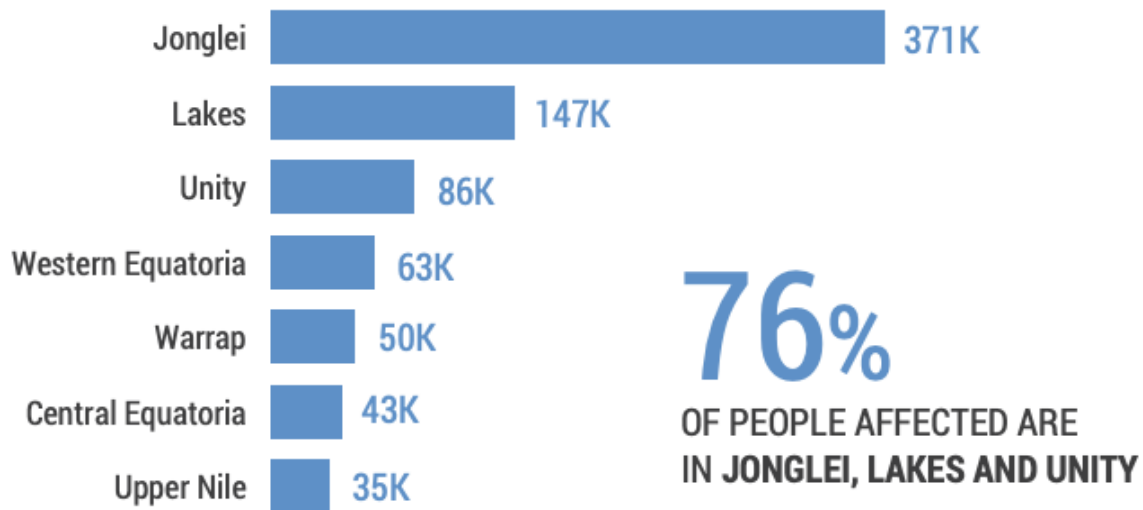


Figure 24.¹³¹

This graphic shows the number of internally displaced people based on each of South Sudan's states.

¹³¹ Vallet, Maryada E., et al. "Where Are the Development Actors in Protracted Crises? Refugee Livelihood and Food Security Outcomes in South Sudan Demonstrate the Potential for Fragile Settings." *World Development Perspectives*, Elsevier, 2 Nov. 2021, <https://www.sciencedirect.com/science/article/pii/S2452292921000825>.

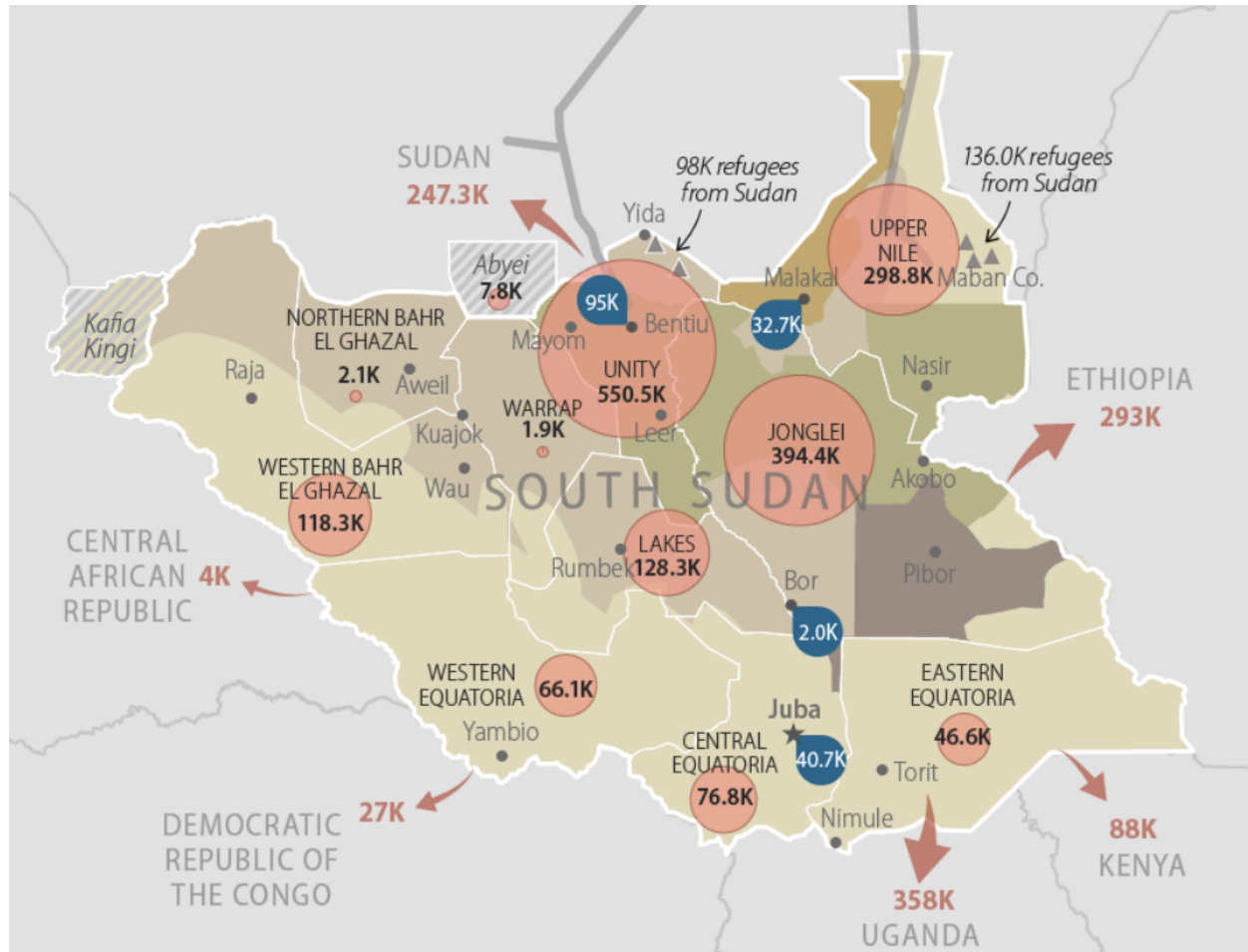


Figure 25.¹³²

Mapping Internally Displaced People in Each State.

¹³² Aleu, Philip. "US Official Pleads for End to South Sudan War, Says Aid Not Limitless." *VOA*, US Official Pleads for End to South Sudan War, Says Aid Not Limitless, 15 July 2014, <https://www.voanews.com/a/south-sudan-usa-humanitarian-aid-unrest-peace-process/1958341.html>.

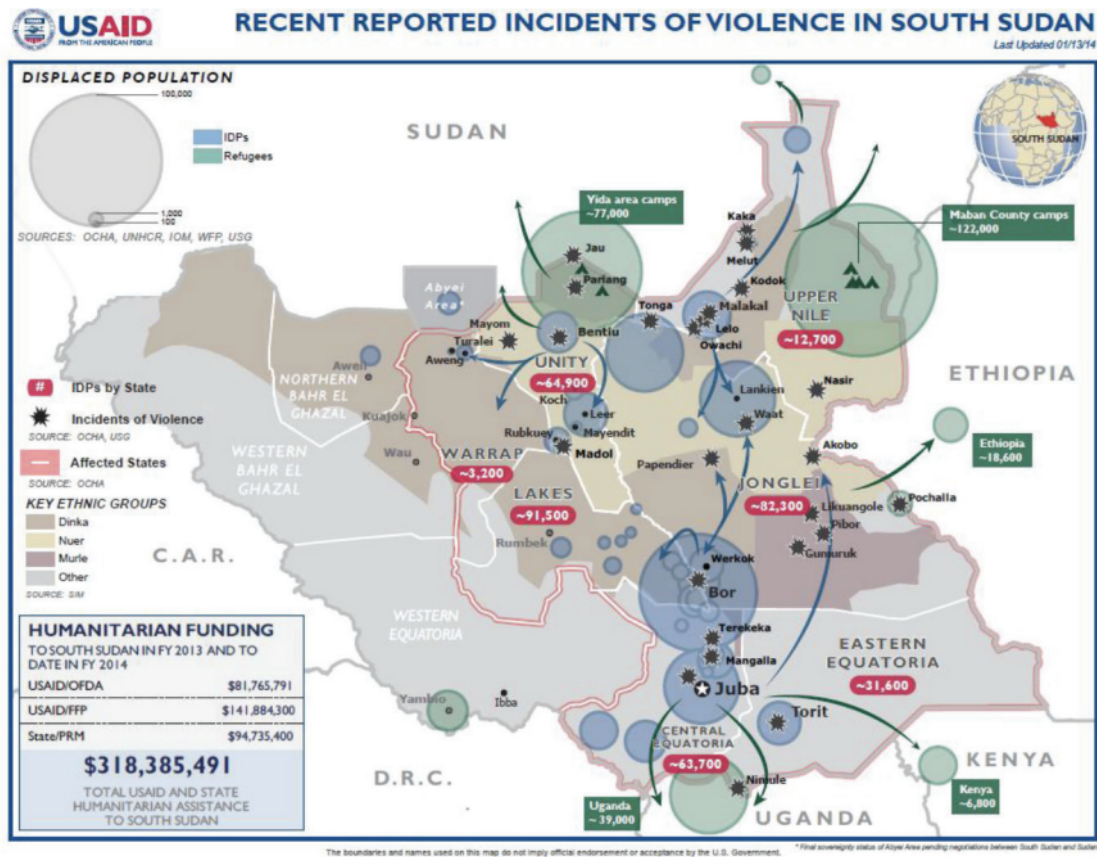


Figure 26.¹³³

This figure maps the location of violent conflicts in South Sudan.

¹³³ USAID. "Recent Reported Incidents of Violence in South Sudan (Last Updated 04/11/14) - South Sudan." *ReliefWeb*, Dec. 2014, <https://reliefweb.int/map/south-sudan/recent-reported-incidents-violence-south-sudan-last-updated-041114>.

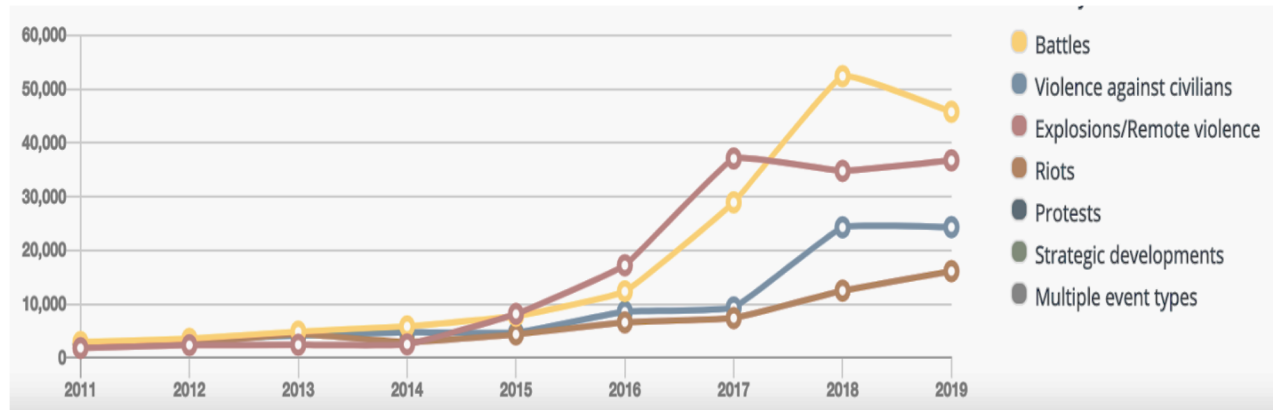


Figure 27.¹³⁴

This graph from ACLED shows increases in violence over time in South Sudan. Note that it increases beginning in 2013, when the civil war began, and increased a lot as climate change placed increased stress on violence both within and outside of the metaphorical box.

¹³⁴ ACLED. "Full Dashboard." *ACLED*, 4 Oct. 2020, <https://acleddata.com/dashboard/#/dashboard>.

Conclusion

In South Sudan, people are not engaging in violent altercations because of climate change. Rather, climate change plays a non-direct role in South Sudanese conflict. Within the political marketplace it has subtly altered conditions which later spark or intensify outbreaks of violence. Climate change in this sense should be viewed as a stressor of sorts rather than a direct cause of violence. As described in the first section, climate change places increased stress on the security of food, health, shelter, and economy. The increased lack of accessibility combined with the preexisting political and ethnic tensions which exist in South Sudan's political marketplace, as enumerated in section 2 and 3, have led to an exacerbation of violence in the region which is unlikely to end any time, given the lack of solutions or action to address both climate change as well as the deeply rooted predisposition to violence which South Sudan has had since its birth as a nation.

The observed case studies in section 4 describe how violence is exasperated in the political marketplace and between ethnicities demonstrates the existence of a sizable indirect link between climate change and the increases in violent altercations within South Sudan. In the future, improved data sets should be able to provide a numerical value to the observations being made in this study, and will be able to shed light on the strength of this association.

The future of South Sudan seems grim, for as climate change continues to worsen due to anthropogenic causes, it is likely that instances of extreme weather and natural disaster will also increase in this area, thus leading to an increase in violence within the country. As of now, climate change policies have been slow to be enforced, and many countries and industries around the world continue to ignore international agreements towards alleviating and helping reverse

climate change. Though South Sudan is not a huge contributor to anthropogenic climate change, it is still affected by the negative decisions of other countries, and it experiences disproportionate consequences of harmful emissions compared to other countries which are larger polluters yet suffer less in the way of natural disasters.

Furthermore, even if climate change were alleviated, given the current model of a political marketplace in South Sudan, it is still very likely that violence between Machar and Kiir and the Nuer and Dinka would continue, as the country has never experienced a non-political marketplace system of government. Without international intervention or a seemingly miraculous lasting peace agreement between the SPLM and SPLM-IO, it is unlikely that power dynamics within South Sudan will evolve into a neopatrimonial system or a true democracy. It is possible that one side of the conflict could decisively win; however, that would require the complete control of opposing forces, which are large, and control over protests to a decisive win. Corruption, and a social, political, and economic reliance on violence, seem to be too strong to allow South Sudan to throw off the yolk of the political marketplace, which is linked into the minds and experiences of all who live there.

Knowing that the positive ties between violence and climate change likely exist, there is an increased motive for international organizations to step up if there is a desire to bring peace to the area through international intervention and assistance. Perhaps someday in the future South Sudan will be able to transcend its violent roots and become something more. Until then, people will inevitably be displaced, injured, and killed due to the lethal combination of intensifying natural disasters, ethnic violence, and vicious political competition within South Sudan.

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