

Claremont McKenna College

The Security Implications of Drought:  
Somalia's Complex Relationship with Climate change and Conflict

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## 1. Introduction

In January 2018, the U.S. Department of Defense (DoD) published a report identifying the vulnerability of domestic military installations to climate-related threats. More than 50% of military sites surveyed reported having been affected by six main climate events: drought, wind, extreme temperatures, wildfire, and flooding due to storm and non-storm surge.<sup>1</sup> The report represents practitioners' and policymakers' increased recognition of climate change and its security implications. What this entails for the world's economic, social, and security conventions and institutions is an area that beckons urgent academic inquiry. Particularly important is how the predicted increase in climate anomalies will uniquely shape conflict and violence throughout the world.

In this paper, I conduct an analysis of the security implications of climate change in Somalia and provide insight into the future of Somalia's security status. I start by offering a literature review of major climate security research and move into a brief history of Somalia's relationship with climate and conflict. I then use the 2011-2012 East African famine as a case study to track how drought affected conflict in the past. Finally, I assess Somalia's current security situation, paying particular attention to how it might evolve overtime as climate anomalies increase. I conclude that, although Somalia is vulnerable to the effects of increased droughts, induced by climate change, there is no evidence to suggest that, under the current security conditions, conflict will increase. Currently, the relatively stable state of Somali security guards against the worst potential impacts of drought; how climate affects conflict, for ill or good, is contingent on the pre-existing political and security environment. These conditions,

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<sup>1</sup> United States of America, Department of Defense, *Climate-Related Risk to DoD Infrastructure Initial Vulnerability Assessment Survey (SLVAS) Report* (Washington D.C.: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, 2018), 1.

however, are subject, and perhaps likely, to shift in the future. A change in foreign military presence, on which Somalia relies greatly to maintain security, could present the opportunity for violent actors to manipulate drought to its advantage and the detriment of the Somali people.

## **2. Literature Review**

Throughout the past two decades, academic research drawing on the connection between climate change and conflict has proliferated, and there now exists an extensive, if inconclusive, body of arguments on this relationship. In order to investigate my hypothesis that climate change acts as a threat multiplier in Somalia because droughts contribute to the unstable conditions in which conflict flourishes, I must first provide a brief overview of the existing academic work on the connection between climate and conflict. I will organize this literature review in two parts: first, climate and conflict and, second, climate *change* and conflict. Given this distinction, one can how the literature describes how climate determines the resources, economic status, and living conditions people face globally, and then how deviations in climate norms, through man-made climate change, may alter those effects.

### **2.1. Climate and conflict**

Researchers like Solomon M. Hsiang, Marshall Burke, and Edward Miguel argue that climate does have an effect on human interaction and conflict. Climate affects resource availability, an important determinant in the nature of interpersonal and intergroup relationships, and thus can influence scarcity and conflict.<sup>2</sup> Environments that frequently or periodically experience extreme weather conditions such as drought, heat waves, monsoons, and flooding experience significant strain on the stability of institutions, livelihoods, and access to resources. The level at which climate affects these variables is dictated by the community's ability to adapt

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<sup>2</sup> Solomon M. Hsiang, Marshall Burke, and Edward Miguel, "Quantifying the Influence of Climate on Human Conflict," *Science* 123, no. 5367, (August 2013): 1-22, doi.org/10.1126/science.1235367.

to extreme weather conditions.<sup>3</sup> Vulnerability depends, in part, on a community's reliance on the climate for food, water, livelihood, and economic and material capital, along with the community's ability to provide a network of social services. Communities with weak or ineffective governing structures are often unable to provide basic necessities like law enforcement, infrastructure, and social services. These factors, in conjunction with limited employment options and resource security, make poor states even more vulnerable to extreme weather events.<sup>4</sup>

Researchers believe that the strain caused by extreme climate conditions on the variables discussed above creates tension that increases the risk of conflict. Jürgen Scheffran discusses the prevalent argument that extreme climate events can breed resource scarcity that force communities to relocate to more resource-rich areas. Through this migration, conflict becomes more likely and more intense. For example, drought in one area causes human migration because communities reliant on rain for drinking water and agriculture are forced to move to where there is freshwater access. People moving into new territory cause conflict in transit and in the target location. By overcrowding the space where they arrive, the disadvantaged group could threaten the limited supply of water in the new location and may attempt to displace an already settled group. Increased demand for limited resources such as farmland, housing, water, employment, and basic social services creates competition and thus conflict.<sup>5</sup>

Rafael Reuveny takes a case study approach to understanding how people displaced by climate events can increase violence where they settle. Through the study of Hurricane Katrina,

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<sup>3</sup> Jürgen Scheffran and Antonella Battaglini, "Climate and Conflicts: The Security Risks of Global Warming," *Regional Environmental Change* 11, (March 2011): 27, accessed February 7, 2018, <https://doi.org/10.1007/s10113-010-0175-8>.

<sup>4</sup> Ibid, 28.

<sup>5</sup> Ibid.

the U.S. Dust Bowl in the 1930s, and Bangladesh since the 1950s, Reuveny concludes that “in-migration can burden the destination’s economy and resources, promoting native-migrant competition for jobs,” and that “in-migrants may [also] disrupt the existing ethnic balance.”<sup>6</sup>

Researchers Jean-François Maystadt and Olivier Ecker argue that there is in fact a direct causal relationship between climate and conflict. They write, specifically, that drought significantly increases the risk of violent conflict. The report refers to the figure that for “one standard deviation increase in drought intensity and length raised the likelihood of conflict by 62%.”<sup>7</sup> Central to Maystadt and Ecker’s work is that of Paul Collier and Anke Hoeffler, which points to slow economic growth and low per capita income as a contributor to civil wars.<sup>8</sup>

Critics of these conclusions, such as Halvard Buhaug, are quick to point out the oversight in this set of presumed logical jumps. In particular, they argue, such studies do not pay enough attention to the non-climate related contextual factors that influence instability. For example, Thomas Homer-Dixon argues that “serious civil strife [due to climate driven economic decline] is not likely to occur unless the structure of political opportunities facing challenger groups keeps them from effectively expressing their grievances peacefully but offers them openings for violence against authority.”<sup>9</sup> In other words, although climate may be a factor among the elements causing increased risk of violence, it is certainly not the dominant contributor. More strident critics argue that change in climate parameters, such as rainfall and temperature, has little to no effect on the risk of violence, and “it seems that we should focus on other, more

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<sup>6</sup> Rafael Reuveny, “Ecomigration and Violent Conflict: Case Studies and Public Policy Implications,” *Human Ecology* 36, no. 1 (February 2008): 3, accessed February 7, 2018, <http://www.jstor.org/stable/27654252>.

<sup>7</sup> Jean-François Maystadt and Olivier Ecker, “Extreme Weather and Civil War: Does Drought Fuel Conflict in Somalia through Livestock Price Shocks?” *American Journal of Agricultural Economics*, vol. 96, Issue 4, (July 2014): 1157, accessed February 7, 2018, <https://doi.org/10.1093/ajae/aau010>.

<sup>8</sup> Paul Collier and Anke Hoeffler, “On economic causes of civil war,” *Oxford Economic Papers*, vol. 50, Issue 4, (October 1998): 563–573, accessed February 7, 2018, <https://doi.org/10.1093/oep/50.4.563>.

<sup>9</sup> Thomas Homer-Dixon, “Environmental Scarcities and Violent Conflict: *Evidence from Cases*,” *International Security* 19, no. 1 (Summer 1994): 26, accessed February 7, 2018, <https://www.jstor.org/stable/2539147>.

pressing causes of contemporary civil wars.”<sup>10</sup> However, even Buhaug includes the caveat that as climate disruptions increase in the future, as is predicted, conflict may increase.

## **2.2. Climate change and conflict**

Climate change is predicted to increase the frequency of local climate anomalies. Changes in the amount of rainfall and temperature increase the likelihood of extreme climate conditions that make conflict more likely.<sup>11</sup> Extreme weather conditions are destabilizing, and climate change will increase the likelihood of unpredictable weather disasters like floods, hurricanes, and droughts.

Although there is no conclusive evidence to suggest a causal relationship between climate change and conflict, researchers have been exploring this issue since at least the late 1980s, with Peter H. Gleick’s 1989 report, “The implications of global climatic changes for international security.”<sup>12</sup> In the mid 2000s, as global climate change accrued more attention from academics and policymakers, research into the relationship between climate change and conflict has grown substantially. A number of theories now exist exploring this linkage. Climate security theorists like Jürgen Scheffran suggest that changes in climate, such as increasing global temperature and changing precipitation patterns, will cause regional and state instability through resource scarcity (water), livelihood insecurity, volatile food prices, and land degradation. These changes in environment alter preexisting interpersonal and intergroup relations because of increased resource competition and eco-migration or environmental refugees. Knock-on tertiary effects,

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<sup>10</sup> Halvard Buhaug and B. L. Turner, “Climate not to blame for African civil wars,” *Proceedings of the National Academy of Sciences* 107, no. 38 (September 2010): 16479, <https://doi.org/10.1073/pnas.1005739107>.

<sup>11</sup> Hsiang, “Quantifying the Influence of Climate on Human Conflict,” 1-22.

<sup>12</sup> Peter H. Gleick, “The implications of global climatic changes for international security,” *Climatic Change* 15, no.1-2 (1989): 309-325, accessed February 7, 2018, <https://doi.org/10.1007/BF00138857>.

such as the emergence of black markets controlled by opportunistic violent paramilitary groups, further this cycle of instability and increase the risk of violence.<sup>13</sup>

There is consensus amongst most academics that non-environmental factors are the dominant drivers for the risk of violence; there is no consensus, however, about the extent to which climate change does contribute. A meta-analysis of fifty-five academic studies on this topic conducted by Burke et al. claims “that deviations from moderate temperatures and precipitation patterns systematically increase the risk of conflict,” and that the frequency of intergroup violence is increased by 11.3% with every standard deviation hotter than the average temperature.<sup>14</sup> Intergroup conflict is defined here as “riots, ethnic violence, land invasions, gang violence, civil war and other forms of political instability, such as coups.”<sup>15</sup> This conclusion is challenged by Burke’s own earlier findings that “suggest. . . that the role of precipitation remains empirically ambiguous” or that “drier and normal periods [of precipitation] show no effects.”<sup>16</sup> The effect of rainfall on the risk of violence is more frequently contested, however, than the effect of temperature. Although John O’Loughlin et al. find no effect for precipitation, “the relationship between temperature and conflict shows that much warmer than normal temperatures raise the risk of violence.”<sup>17</sup> This conclusion is echoed by Burke, Maystadt and Ecker, along with Hsiang, Meng, and Cane. With a population that has learned to adjust to

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<sup>13</sup> Scheffran and Battaglini, “Climate and conflicts: the security risks of global warming,” S27-S39.

<sup>14</sup> Marshall B. Burke and Solomon M. Hsiang and Edward Miguel, 2015. “Climate and Conflict,” *Annual Review of Economics* 7, no.1 (2015): abstract, accessed February 7, 2018, <https://doi.org/10.3386/w20598>.

<sup>15</sup> Ibid.

<sup>16</sup> Marshall B. Burke, et al., “Warming increases the risk of civil war in Africa,” *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, vol. 106, no. 49, (December 2009): 20672, accessed February 7, 2018, <https://doi.org/10.1073/pnas.0907998106>; John O’Loughlin, et al., “Climate variability and conflict risk in East Africa, 1990–2009,” *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, vol. 109, no. 45, (November 2012): abstract, accessed February 7, 2018, <https://doi.org/10.1073/pnas.1205130109>.

<sup>17</sup> O’Loughlin et al., “Climate variability and conflict risk in East Africa, 1990–2009,” abstract.

extended droughts and a history of internal violence and competition, Somalia is rich with information about the conditions under which climate change might exacerbate conflict.

### **3. History of Drought: *Somalia***

Since its independence from Britain and Italy in 1960, Somalia has experienced a nearly unbroken streak of protracted internal conflict with varying degrees of severity. With a population of approximately 10.8 million people representing five major clans (Darood, Hawiye, Dir, Isaaq, and Rahanweyn) and hundreds of minority groups and sub-clans, an economy ranked around 150th in the world at \$6.5 billion (65% of which is based on agriculture and agro-industry), and a harsh, arid and semi-arid climate, Somalia offers an excellent case for examining the linkages between climate, climate change, and conflict.<sup>18</sup>

East Africa experiences two rainy seasons: the first ranges from March to May (long rains) and the second from October to December (short rains). These two rainy seasons account for around 70% of the yearly precipitation.<sup>19</sup> Drawing from data from 1901-2015, the average annual precipitation in Somalia was 12.6 inches, leaving Somalia dry in comparison to other deep tropical African regions.<sup>20</sup> Somalia's arid environment and bimodal precipitation pattern make the region susceptible to cyclical droughts. Drought data in East Africa varies by source and definition and there is debate on what qualifies as drought. Generally, a drought is defined as

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<sup>18</sup> Daisuke Yoshimura, "Clans in Somalia," (report on a lecture by Joakim Gundel, COI Workshop Vienna, Austria, 15 May 2009), *Austrian Red Cross*, (2009): 1-30, <http://www.refworld.org/pdfile/4b29f5e82.pdf>; *The World Factbook* 2018. Washington, DC: Central Intelligence Agency, 2018, <https://www.cia.gov/library/publications/resources/the-world-factbook/geos/so.html>; "World Development Indicators 2017," *World Bank*, (Washington, DC: World Bank, 2017), License: Creative Commons Attribution CC BY 3.0 IGO.

<sup>19</sup> "Average Monthly Rainfall for Somalia from 1901-2015," The World Bank Climate Change Knowledge Portal, (2016), accessed January 27, 2018, [http://sdwebx.worldbank.org/climateportal/index.cfm?page=country\\_historical\\_climate&ThisCCCode=SOM#](http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_historical_climate&ThisCCCode=SOM#).

<sup>20</sup> Wenchang Yang, Richard Seager, and Mark A. Cane, "The Annual Cycle of East African Precipitation," *J. Climate* 28, (March 2015): 2385-2404, accessed February 7, 2018, <https://doi.org/10.1175/JCLI-D-14-00484.1>; "Average Monthly Rainfall for Somalia from 1901-2015," The World Bank Climate Change Knowledge Portal.



“a period of abnormally dry weather sufficiently prolonged for the lack of water to cause serious hydrologic imbalance in the affected area.”<sup>21</sup> There is, however, no standard measure of rainfall variation that signifies a drought. Due to a lack of recording, there is also limited historical climate data on East Africa. This makes it difficult to locate clear historical drought data for Somalia. What is indisputably clear, however, is that Somalia is affected by drought every few years, with particularly severe droughts occurring several times a decade. Recent notable droughts include: 1991-1992, 2005-2006, 2008, 2011-2012, and 2015-present.<sup>22</sup> Although drought is not a recent phenomenon in Somalia, it still puts stress on people and the economy.

Somalia’s reliance on climate for food, water, livelihood, and the lack of formal government-provided social services makes it vulnerable to severe drought. Although Somalia’s informal rural economy has survived, and even prospered, through remittance payments, telecommunications, and illegal agro-livestock export, its agricultural and livestock-based economy, which is heavily reliant on rainfall and soil condition, fluctuates with climate conditions.<sup>23</sup> The agriculture sector is made up of sedentary cultivators who mainly farm maize, sorghum, banana, and onions; agro-pastoralists; and pastoralists who herd cattle, sheep, goats, and camels.<sup>24</sup> Small-scale farming operations depend largely on rainfall for all their water needs, however, regions in southern Somalia along the Jubba and Shabelle rivers do have limited irrigation systems. The agricultural infrastructure providing security against rainfall anomalies

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<sup>21</sup> Elizabeth Ferris and Daniel Petz, “The Year that Shook the Rich: A Review of Natural Disasters in 2011,” *The Brookings Institution - London School of Economics Project on Internal Displacement* (March 2012): 99, accessed February 7, 2018, [https://www.brookings.edu/wp-content/uploads/2016/06/03\\_natural\\_disaster\\_review\\_ferris.pdf](https://www.brookings.edu/wp-content/uploads/2016/06/03_natural_disaster_review_ferris.pdf).

<sup>22</sup> Maystadt and Ecker, “Extreme Weather and Civil War: Does Drought Fuel Conflict in Somalia through Livestock Price Shocks?” 1157–1182.; Stephen Wainaina, “Droughts in East Africa becoming more frequent, more devastating,” *African Arguments*, March 17, 2017, accessed April 1, 2018,

<http://africanarguments.org/2017/03/17/droughts-in-east-africa-are-becoming-more-frequent-and-more-devastating/>.

<sup>23</sup> Maystadt and Ecker, “Extreme Weather and Civil War: Does Drought Fuel Conflict in Somalia through Livestock Price Shocks?” 1157–1182.

<sup>24</sup> “Somalia,” *Encyclopedia Britannica*, last modified January 12, 2018, accessed February 7, 2018, <https://www.britannica.com/place/Somalia/Economy>.

amounts to meager riverine irrigation that remains vulnerable to pillaging by rival clans.<sup>25</sup>

Communities reliant on sedentary agricultural practices are most at risk for drought, as they cannot simply pull up stakes and move to less affected areas as pastoralists can. Drought leads to food crisis through a chain reaction: lack of rainfall causes crop failure and livestock death, food prices rise as supply drops, and income and purchasing power drop making it harder to purchase food from world and domestic markets.

The lack of social services provided by the national government also increases Somalia's vulnerability to drought. Since the 1991 civil war, Somalia's federal governments have struggled to have any substantial influence or control at a national level. Especially since the emergence of al-Shabaab, the Somali Federal Government has particularly struggled to assert authority outside Mogadishu and its outskirts, the Banadir area. Most rural Somalis operate within a clan-based structure and have limited affiliation with the national government. Additionally, the Somali Federal Government has a complicated and often ambiguous relationship with several self-proclaimed and internationally recognized semi-autonomous states within its borders. These include states Somaliland, Puntland, and Jubaland in order of most to least autonomous. The Somali Federal Government provides no financial safety net system and "weak credit and insurance markets make formal mechanisms to cope with shocks difficult to trust."<sup>26</sup> Nor does the national government offer water, food, or financial relief, except for international aid, to rural communities experiencing drought. Lack of government support exacerbates the food crisis and makes Somalia more vulnerable to drought.

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<sup>25</sup> Nisar Majid and Stephen McDowell, "Hidden dimensions of the Somalia famine," *Global Food Security* (2012): 1-7, accessed February 7, 2018, <http://dx.doi.org/10.1016/j.gfs.2012.07.003>.

<sup>26</sup> Maystadt and Ecker, "Extreme Weather and Civil War: Does Drought Fuel Conflict in Somalia through Livestock Price Shocks?" 1161.

Although Somalia is generally vulnerable to droughts, the severity of drought is determined by the ability to adapt to changes in the environment. Adaptability to climate changes, in Somalia's context, is largely determined by the security situation and political organization at a given time.

Somalia's clan-based social welfare system offers relief through "a complex interconnected system of social networks and political negotiations, where the sustainability or vulnerability of each livelihood depends. . . on the individual's interpersonal relationships."<sup>27</sup> Intra- and inter-clan dynamics and family relationships are the foundation on which rural communities rely on to adjust to droughts: "social support networks amongst the Reewin [a group disproportionately affected by the 2011 famine] are. . . estimated at contributing 25–60% of the household economy in difficult times."<sup>28</sup> Somalia's pastoral communities are also well-adapted to the historical cycle of droughts, as they live nomadically and migrate away from impacted areas. The success of migratory pastoralists is vital to building a resilient Somali economy. Livestock accounts for over half of Somalia's exports, though animals are largely sold illegally to neighboring Kenya and Ethiopia.<sup>29</sup>

The success of these coping mechanisms, however, is a determinant of the physical scale of the drought and socially detrimental conflict. Droughts that affect large swaths of territory can hamper pastoralists' ability to escape poor grazing conditions, resulting in the death of livestock. Drought-affected animals are malnourished and sell for significantly less on the global market. Somalia's clan-based welfare system relies those who are outside of drought conditions to help,

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<sup>27</sup> Majid and McDowell, "Hidden dimensions of the Somalia famine," 2.

<sup>28</sup> Majid and McDowell, "Hidden dimensions of the Somalia famine," 4.

<sup>29</sup> Maystadt and Ecker, "Extreme Weather and Civil War: Does Drought Fuel Conflict in Somalia through Livestock Price Shocks?" 1157–1182.

but when the drought engulfs the entire region, these networks break down--especially for groups like the Reewin who are smaller and thus have a weaker system.

Crisis in Somalia's informal rural economy, where nearly two thirds of the population resides, affects food prices and industrial capability, which makes up 7.4% of the economy, in urban centers, particularly Mogadishu.<sup>30</sup> Somalia's urban community "earn their income as livestock traders, brokers, or laborers in related activities," so the informal and urban economies are interconnected.<sup>31</sup>

Conflict also hampers adaptability. Violence between clans, political factions, or ethnic groups reduces freedom of movement and available resources for drought bailout. Warring groups will bar movement out of drought territory if it poses a threat to their own resource security and political sovereignty. Drought-afflicted people often rely on wealthy families for assistance, and violence drives these families away or drains their spare funds. International donors are also unable to provide large-scale aid to drought areas that are in conflict, as is the case in the 2011-2012 famine.

#### **4. Case Study: 2011-2012 Famine**

The East African famine of 2011-2012 exposed Somalia's acute vulnerability to the compounding negative impacts of drought on security. In brief, severe drought and domestic instability caused a dire food crisis which the U.N. declared a famine in July 2011. Eight months later the famine had ended, but with the cost of an estimated 260,000 deaths, half being children

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<sup>30</sup>Food Security and Nutrition Analysis Unit (FSNAU), "Food Security and Nutrition Analysis: Post Deyr 2010/11," *Technical Series Report* no. VI. 36. (Nairobi: FSNAU, 2011). <http://www.fao.org/3/a-as796e.pdf>;

CIA, *The World Factbook* 2018.

<sup>31</sup> Maystadt and Ecker, "Extreme Weather and Civil War: Does Drought Fuel Conflict in Somalia through Livestock Price Shocks?" 1160.

under the age of five, and \$1.3 billion spent in aid.<sup>32</sup> The subsequent section will explore the causes and consequences of the 2011-2012 East African famine to highlight the threat of drought exacerbating conflict in Somalia.

#### **4.1. Causes of the famine**

Somalia's 2011-2012 famine is the result of three major factors: drought, increased food prices, and pre-existing conflict. The 2011 drought period began with two consecutive rain-season failures, resulting in the "lowest recorded levels of rainfall in 50 years in some of the affected areas" and "considerably deteriorated vegetation conditions across Somalia."<sup>33</sup> The drought affected much of the Northeast African Horn, including parts of Eastern Kenya and Southern Ethiopia, but was most severe in South Central Somalia (see figure 2).<sup>34</sup> The drought caused Somalia's worst crop yield in 17 years and led to high livestock mortality rates.<sup>35</sup> By 2011, drought had significantly reduced crop yield, putting extreme strain on livelihoods of the livestock and agricultural-based communities in South Central Somalia.

A rapid increase in the global price of food occurred at the same time, but independently from the severe drought, exacerbating the local food production and accessibility crisis. Somalia relies heavily on food imports: "cereal imports (mostly rice and wheat flour) cover roughly 60%

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<sup>32</sup> "Somalia famine killed nearly 260,000 people, half of them children," UN News, May 2, 2013, accessed March 8, 2018, <https://news.un.org/en/story/2013/05/438682-somalia-famine-killed-nearly-260000-people-half-them-children-reports-un>.; "Somalia famine killed nearly 260,000 people, half of them children," UN News, May 2, 2013, accessed March 8, 2018, <https://news.un.org/en/story/2013/05/438682-somalia-famine-killed-nearly-260000-people-half-them-children-reports-un>.

<sup>33</sup> Food Security and Nutrition Analysis Unit (FSNAU), "Climate Data Update: *Monthly Rainfall and NDVI*," (March 2011): 1-4, accessed March 8, [https://reliefweb.int/sites/reliefweb.int/files/resources/Full\\_Report\\_173.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/Full_Report_173.pdf).; Daniel Maxwell and Merry Fitzpatrick, "The 2011 Somalia famine: Context, causes, and complications," *Global Food Security* 1, no. 1 (2012): 5-12, accessed April 1, 2018, <https://doi.org/10.1016/j.gfs.2012.07.002>.

<sup>34</sup> "Horn of Africa: *Humanitarian Snapshot*," United Nations Office for the Coordination of Humanitarian Affairs (OCHA), (December 2016), accessed March 8, 2018, [https://reliefweb.int/sites/reliefweb.int/files/resources/map\\_1462.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/map_1462.pdf)

<sup>35</sup> Ferris and Petz, "The Year that Shook the Rich: A Review of Natural Disasters in 2011," 103.

of its food requirements.<sup>36</sup> When global food prices peaked in June and July of 2010, it became harder for Somalis to find affordable food.<sup>37</sup> The combination of increased imported food prices, decline in domestic food production, and reduced income from agricultural livelihood dramatically “reduced average purchasing power in the southern regions by 40–60% within one year,” and left many with limited access to adequate food supplies.<sup>38</sup>

The third primary contributor to famine was Somalia’s ongoing domestic conflict, which pre-dated, continued throughout, and then persisted well after 2011-2012. The 2006 US-backed Ethiopian invasion of Somalia ended a decade-long period of relative security and ushered in a wave of conflict that would characterize the environment in which the famine evolved.<sup>39</sup> Ethiopian forces moved to combat Somalia's Islamic Court Union (ICU), a rebel group that had formed in opposition to the Transitional Federal Government (TFG) and expanded to seize Mogadishu and most of coastal Southern Somalia throughout May of 2006. As the ICU disintegrated, splinter groups like al-Shabaab continued to struggle for power against foreign and foreign-backed government forces. Officially recognized as a foreign terrorist organization (FTO) by the U.S., al-Shabaab is a violent Islamic extremist organization that flourished amongst the post-invasion chaos. By 2010, al-Shabaab had expanded to control most of South Central Somalia. Al-Shabaab’s dominance in the region catalyzed the 2011-2012 famine in two ways: by restricting people from fleeing drought-devastated territory, and by barring aid organizations from reaching these same desperate people. Al-Shabaab extorts money and recruits from

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<sup>36</sup> Issa Sanogo, “Food Market and Supply Situation in Southern Somalia,” World Food Programme (WFP), (October 2011): 11, accessed March 8, <http://documents.wfp.org/stellent/groups/public/documents/ena/wfp255737.pdf>.

<sup>37</sup> Maxwell and Fitzpatrick, “The 2011 Somalia famine: Context, causes, and complications,” 11.

<sup>38</sup> Maystadt and Ecker, “Extreme Weather and Civil War: Does Drought Fuel Conflict in Somalia through Livestock Price Shocks?” 1163.

<sup>39</sup> Ken Menkhaus, “Stabilization and humanitarian access in a collapsed state: *the Somali case*,” *Disasters* 34, (2010): 321, accessed March 20, <https://doi.org/10.1111/j.1467-7717.2010.01204.x>.

populations under its control and depopulation poses a threat to its power. Al-Shabaab restricted the movement of people trying to flee within Somalia and to neighboring Ethiopia and Kenya. The group even erected a “cantonment camp where it imprisoned displaced people trying to escape al-Shabaab territory.”<sup>40</sup> Without the ability to flee, many rural Somalis were trapped to die in a jobless and foodless environment, cut-off from foreign aid. Since its rise to power, al-Shabaab has targeted foreign aid workers and worked to capture and divert food aid to itself so as to leverage the resources over the population. Al-Shabaab labels foreign aid as an imperialist scheme to weaken Somali agricultural stability, conveniently forcing rural Somalis to rely on al-Shabaab during drought, as was the case in 2011. In 2008, CARE (Cooperative for Assistance and Relief Everywhere), the humanitarian food aid agency, pulled out of Somalia under pressure of violence from al-Shabaab. In early 2010, the World Food Program (WFP) also retreated from Somalia.<sup>41</sup> By the start of the 2011 drought, after at least 3 years of anti-aid policy, al-Shabaab had created an inoperable environment for foreign aid.<sup>42</sup> Aid was additionally blocked by the U.S. The U.S. Patriot Act of 2001 stringently prohibits funding FTOs, and there was fear that aid meant for desperate people could fall to al-Shabaab and leave aid organizations liable to prosecution under US law.<sup>43</sup> This further slowed the trickle of aid into Somalia. Al-Shabaab’s presence made aid extremely difficult to deliver aid and barred the escape of people from drought-stricken areas, ultimately catalyzing the famine. It was only after the African Union Mission to Somalia’s (AMISOM) successful campaign to retake Mogadishu from al-Shabaab in February 2011, that safe port and transportation facilities opened for aid import and distribution.

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<sup>40</sup> Ferris and Petz, “The Year that Shook the Rich: A Review of Natural Disasters in 2011,” 107.

<sup>41</sup> Maxwell and Fitzpatrick, “The 2011 Somalia famine: Context, causes, and complications.”

<sup>42</sup> Katherine Zimmerman, “Al Shabaab's History with Humanitarian Assistance,” *Critical Threats*, July 27, 2011, accessed March 1, <https://www.criticalthreats.org/analysis/al-shabaabs-history-with-humanitarian-assistance>.

<sup>43</sup> Andrew Seal and Rob Bailey, “The 2011 Famine in Somalia: lessons learnt from a failed response?” *Conflict and Health* 7, no. 22 (2013): 3, <http://doi.org/10.1186/1752-1505-7-22>.

## 4.2. Who was affected

Broadly, the crisis in Somalia affected 4 million people, 750,000 of whom were described as living ““in famine conditions”” by the U.N. in October 2011.<sup>44</sup> Nearly 490,000 of the 750,000 famine stricken people lived in rural areas of South Central Somalia and the other 260,000 lived in cramped IDP (Internally Displaced Person) camps in Mogadishu and the Afgooye Corridor.<sup>45</sup> The majority, 81%, of the endangered rural population, resided in the Bay and Bakool regions, and the rest lived in the nearby Lower and Middle Shabelle territories.<sup>46</sup> These rural populations relied on rainfall for pastures, and healthy soil to sustain their agro-pastoral and pastoral livelihoods. A prolonged lack of rainfall degraded pastures and farms, resulting in crop failure and livestock death. And the drought was widespread, simultaneously affecting central Somalia’s settled cultivators, agro-pastoralists, and pastoralists of the Bay, Lower and Middle Shabelle, and Bakool regions. Within this area, the major groups affected were the Reewin, an agro-pastoral clan, and the Bantu, a more sedentary minority group that is not formally part of the majority clan structure of Somalia.<sup>47</sup>

As described in the background section of this paper, rural Somalis have formal and informal social structures to mitigate the impacts of the kinds of cyclical droughts typical in the drylands of East Africa. These coping tactics rely on a network of familial and clan relationships that offer alternative “sources of income and occupation, linking rural, urban and international contexts” in times of trouble.<sup>48</sup> The process relies on a “web of livelihoods income or resources in-kind [that] are transferred or negotiated between family members so as to support and

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<sup>44</sup> Majid and McDowell, “Hidden dimensions of the Somalia famine,” 1.; Daniel Maxwell, et al., “Facing Famine Somali Experiences in the Famine of 2011,” Feinstein International Center, Tufts University, (October 2015): 4-5, accessed March 1, 2018, <http://fic.tufts.edu/assets/Facing-Famine-high-quality.pdf>.

<sup>45</sup> Ibid, 1-2.

<sup>46</sup> Ibid, 1.

<sup>47</sup> Majid and McDowell, “Hidden dimensions of the Somalia famine,” 1-7.

<sup>48</sup> Ibid, 4.



maintain the whole.”<sup>49</sup> However, the widespread severity of the drought, in combination with the desperate pre-existing security situation, severely hampered the ability of rural clans people to cope. Both the Bantu and Reewin rely on agriculture and livestock sector for nearly the entirety of their livelihoods, and compared to the major clans in Somalia, their social support networks are “much less internationalized.”<sup>50</sup> This left them at great risk to sustained drought conditions, and al-Shabaab’s presence further threatened social support systems. The organization demanded high taxes that, by 2010, had driven many wealthier families out of South Central Somalia. These families were crucial to the vitality of the support networks on which periodically struggling communities relied. The scale of the drought and the presence of al-Shabaab caused substantial failures in the support networks as people in a very large region experienced similar impacts simultaneously.<sup>51</sup>

For pastoralists, simply moving to less affected areas is a relatively low cost and realistic option in mild drought times, but in 2011 so much of the region was impacted that the distances required to escape drought were too great to endure. Migration was also restricted by al-Shabaab which sought to keep people within its control. However, as of November 2011, 286,487 refugees had fled Somalia to neighboring Kenya and Ethiopia, exacerbating the neighbors’ pre-existing Somali refugee burdens.<sup>52</sup>

#### **4.3. Al-Shabaab in 2011 famine**

Al-Shabaab played a complex role in the Somali famine. It is important to recognize that al-Shabaab was somewhat of a stabilizing organization in South Central Somalia prior to the

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<sup>49</sup> Ibid.

<sup>50</sup> Ibid.

<sup>51</sup> Daniel Maxwell and Nisar Majid, “Another Humanitarian Crisis in Somalia? Learning from the 2011 Famine,” *Feinstein International Center, Tufts University*, (August 2014): 3-14, accessed March 1, 2018, <http://fic.tufts.edu/assets/Another-HC-in-Somalia.pdf>.

<sup>52</sup> Ferris and Petz, “The Year that Shook the Rich: A Review of Natural Disasters in 2011,” 108.

famine. Al-Shabaab represents a political voice for the marginalized rural minority groups, Riween and Bantu, in the region, and because “the rank and file of the organization come from these populations. . . [al-Shabaab] have had ‘significant’ support from them.”<sup>53</sup> Regardless of its role in the local community, al-Shabaab’s aid and movement restriction was partially responsible for the rapid escalation of the crisis. Being the major destabilizing actor in Somalia during the and before the famine, al-Shabaab can be used as a proxy for overall conflict. Tracking the amount of territory held, population under control, number of fighters, wealth, and local support of al-Shabaab gives an indication on the status of Somalia’s overall security situation. Al-Shabaab was certainly culpable in contributing to the famine, but contrary to the rhetoric of major news outlets such as the *Guardian*, it also suffered a great deal from the chaotic environment of 2011. As the famine worsened and food became scarcer, al-Shabaab, as the sole economic power left after the livestock died and agriculture collapsed, increased its leverage over the population in its sphere of control. In desperation, some people did turn to al-Shabaab for economic and security relief. According to Omar Osman, a Somali government spokesperson, by July 2011 al-Shabaab had recruited more than 1,000 additional soldiers.<sup>54</sup> Bruno Geddo, who was the U.N. refugee agency's representative in Somalia, stated that “This [famine] has been a boon for Al-Shabab's recruitment campaign because when you don’t have purchasing power to buy the food, you will be encouraged to be recruited because then you will be saved, and you can use that salary or you could be given food.”<sup>55</sup> However, the increase in recruitment was counteracted by high combat losses during increased fighting with the

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<sup>53</sup> Majid and McDowell, “Hidden dimensions of the Somalia famine,” 4.

<sup>54</sup> “Has Somalia's Famine Weakened al-Shabab?” Voice of America News(VOA), July 27, 2011, accessed March 14, 2018, <https://www.voanews.com/a/has-somalias-famine-weakened-al-shabab-126341368/142986.html>.

<sup>55</sup> Maystadt and Ecker, “Extreme Weather and Civil War: Does Drought Fuel Conflict in Somalia through Livestock Price Shocks?” 1162.

Transitional Federal Government (TFG) and AMISOM. Al-Shabaab's military dominance declined rapidly, starting in February 2011, when AMISOM began a major offensive to retake Mogadishu. This territorial loss was compounded by inter-organizational struggles that divided al-Shabaab's command structure between local and non-Somali leaders. Confidence in al-Shabaab's governing ability within the Riween and Bantu communities declined significantly as the famine intensified, aid was stopped, and battlefield losses continued. A lack of support from local leaders put pressure on al-Shabaab's grip on the region.

The 2011-2012 famine was made worse by al-Shabaab, which initially capitalized on it. Ultimately, however, the destabilized environment and foreign intervention created conditions that would lead to the decline of the organization.

## **5. Drought in Somalia Today**

With hotter temperatures and less rainfall, droughts have become more frequent in Somalia in recent decades.<sup>56</sup> An increase in rainfall anomalies has made droughts more likely to occur and also last longer, as rainy seasons, which offer relief to drought, become less predictable. Currently, most of Northern Somalia and some states in South Central Somalia, the same region most affected in the 2011-2012 famine, are experiencing a severe drought that began in 2015.<sup>57</sup> Four consecutive below-average rainy seasons have strained access to water and caused agricultural failure, necessitating major humanitarian response. So far, the drought and subsequent food shortage have displaced one million people internally, bloating already crowded refugee populations living in IDP camps in and around Mogadishu. About half of Somalia's population, or 5.4 million people, need food assistance, with 2.7 million Somalis designated as

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<sup>56</sup> Wainaina, "Droughts in East Africa becoming more frequent, more devastating."

<sup>57</sup> "Horn of Africa: Humanitarian Impacts of Drought," United Nations Office for the Coordination of Humanitarian Affairs (OCHA), no. 6 (June 2017), accessed March 8, 2018, [https://reliefweb.int/sites/reliefweb.int/files/resources/HOA\\_drought\\_update\\_16June2017.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/HOA_drought_update_16June2017.pdf).

being in a state of “humanitarian emergency and crisis.”<sup>58</sup> The drought caused a food shortage through an increase in food prices, livestock death, and crop failure. In the South Central regions of Bay and Bakool, where nearly half, or 500,000, of the total displaced people originated, crop yield for the 2017 Gu season fell 32% and 50%, respectively, below the five-year average.<sup>59</sup> Fears of the drought getting worse are supported by predictions of below average rainfall in the upcoming Gu (March/April-May/June), long rainy season. Although the threat of famine has decreased since the end of 2017, the prevention of a major food crisis relies on continued international food, water, and health aid assistance.<sup>60</sup>

### **5.1. Why has drought not led to famine?**

Foreign aid has played a decisive role in preventing famine. Organizations like UNICEF (United Nations International Children's Fund), WFP (World Food Programme), OCHA (United Nations Office for the Coordination of Humanitarian Affairs), CARE, and OXFAM have provided crucial assistance to combat the dire food shortages. Since February 2017, when OCHA announced the risk of famine, the number of people in need of humanitarian assistance has decreased by 600,000 to 5.4 million, though it is significant that this is still nearly half of Somalia's population. The number of people in the IPC 4- “emergency-phase” (one level before famine) has increased, however.<sup>61</sup>

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<sup>58</sup> “Humanitarian Bulletin: SOMALIA” United Nations Office for the Coordination of Humanitarian Affairs (OCHA), (February-March 2018): 1, accessed April 3, 2018, [https://reliefweb.int/sites/reliefweb.int/files/resources/feb\\_humanitarian\\_bulletin.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/feb_humanitarian_bulletin.pdf); Victor Nyamori, “Kenya: Failure to register Somali refugees putting them at risk of starvation and abuse,” Amnesty International, (February 2018), accessed March 18, 2018, <https://www.amnesty.org/en/latest/news/2018/02/kenya-failure-to-register-somali-refugees-putting-them-at-risk-of-starvation-and-abuse/>

<sup>59</sup> “Somalia: State-by-State Drought Analysis,” UN Office of the Coordination of Humanitarian Affairs, (February 2018): 12, accessed March 5, 2018, [https://reliefweb.int/sites/reliefweb.int/files/resources/20180228\\_state-by-state\\_drought\\_analysis.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/20180228_state-by-state_drought_analysis.pdf).

<sup>60</sup> OCHA “Humanitarian Bulletin: SOMALIA,” 1.

<sup>61</sup> OCHA, “Somalia: State-by-State Drought Analysis,” 1.

Unlike 2011, when intense local conflict prevented major aid relief, international humanitarian organizations have now temporarily stabilized drought-induced food crisis. The 2015 drought comes at a time of relative peace and security in Somalia. Al-Shabaab's grip on South-Central Somalia is at its weakest since the group's founding in 2006, allowing aid to reach more Somalis. Suffering from human resources and financial shortages, the violent terrorist organization can no longer wage a large-scale organized military conflict as it did in 2010, and instead al-Shabaab has shifted to more targeted insurgent attacks and bombings on security forces, politicians, and civilians in urban environments. The deadliest bomb attack in Somalia's history occurred in October 2017 when a truck exploded in central Mogadishu, killing over 500 people.<sup>62</sup> Al-Shabaab's effort to increase guerrilla style attacks is a testament to the success of determined pressure from security forces and the increasing despair of the terrorist organization. The 20,000 multinational AMISOM police and military troops stationed primarily in Mogadishu are instrumental in the fight against al-Shabaab. AMISOM has been fighting al-Shabaab in Somalia for ten years. African and supporting U.S. forces are "finding it difficult to hold" onto territory taken from al-Shabaab, and while AMISOM currently has limited offensive military capability, its presence in forward operating bases provides a powerful deterrent to al-Shabaab.<sup>63</sup> However, al-Shabaab has lost the ability to fight a major conflict, and its grip on both the capital and rural areas has waned, providing a space for the distribution of international aid. Abdirahman Omar Osman, the former Somali Minister of Commerce, highlighted increased U.S. involvement under President Donald Trump's administration as helping to weaken al-Shabaab's presence near

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<sup>62</sup> "Somalia truck bombing: Final death toll exceeds 500," CBC News, (December 2017), accessed March 18, 2018, <http://www.cbc.ca/news/world/somalia-mogadishu-bombing-1.4430078>.

<sup>63</sup> Caroline Houck, "'We're Finding It Difficult to Hold' Territory in Somalia: Senator," Defense One, (March 2018), accessed March 20, 2018, <http://www.defenseone.com/threats/2018/03/were-finding-it-difficult-to-hold-territory-somalia-senator/146376/>.

the capital.<sup>64</sup> U.S. troops present on the ground have increased ten-fold, from 50 to 500, and, since Trump's inauguration, there have been more airstrikes against al-Shabaab targets than in the past seven years combined.<sup>65</sup>

Al-Shabaab's weakness is reflected in the cruelty of its governance. Al-Shabaab now levies higher human and financial taxes on the populations it rules over, suggesting its increasingly desperate situation in maintaining territorial dominance in Somalia. Desperate measures have reduced support for al-Shabaab from the clans on which they rely for resource exploitation and legitimacy. One defector from the group told Somali government investigators that "al-Shabaab used to demand money or children from clans: now they demand both," and that taxes now force "Muslims to pay for pretty much everything except entering the mosque."<sup>66</sup> Security forces weakened al-Shabaab through a campaign of constant pressure and have created a relatively safe environment for humanitarian organizations to play their role in preventing famine.

## **5.2. What would increase the risk of conflict?**

Short-term peace and security in Somalia rely principally on foreign military presence. AMISOM, with U.S. support, provides a counter to al-Shabaab's would-be dominance in the country. Left unchallenged, it is likely that al-Shabaab would overrun weak Somali government forces and retake control of large swaths, including Mogadishu, of the country. Under al-Shabaab's rule, foreign aid could not enter the country or be properly distributed. Under those

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<sup>64</sup> Jane Ferguson, "Somalia sees enemy al-Shabab weaken under U.S. military pressure," PBS News, (February 2018), accessed March 8, 2018, <https://www.pbs.org/newshour/show/somalia-sees-enemy-al-shabab-weaken-under-u-s-military-pressure>.

<sup>65</sup> Houck, "'We're Finding It Difficult to Hold' Territory in Somalia: Senator."; Jason Burke, "Somali citizens count cost of surge in US airstrikes under Trump," The Guardian, (January 2018), accessed March 8, 2018, <https://www.theguardian.com/world/2018/jan/23/somali-citizens-count-cost-of-surge-in-us-airstrikes-under-trump>.

<sup>66</sup> Jason Burke, "Al-Shabaab plundering starving Somali villages of cash and children," The Guardian, (February 2018), accessed March 8, 2018, <https://www.theguardian.com/world/2018/feb/21/al-shabaab-extortion-indoctrination-somalia>.

conditions, another major drought, which is likely to occur according to climate predictions, would spell catastrophic famine and the preventable deaths of potentially millions of Somalis.

Despite this projection, however, foreign military presence is scaling down in Somalia. In preparation for the scheduled mandate completion in 2020, AMISOM forces have already begun downsizing, withdrawing 1,000 troops in December 2017. More soldiers are expected to leave Somalia by September 2018 as part of a gradual exit plan.<sup>67</sup> Absence of AMISOM forces would leave only the weak Somali Government forces to defend the country from al-Shabaab.

According to Pentagon spokesperson Major Sheryll Klinkel, “the long-term stability in the country will depend on how a withdrawal of AMISOM is conducted.”<sup>68</sup> The conditions of AMISOM’s hand-off to Somali National Security Forces are still unclear, but it is hard to imagine the circumstances in which the Somali military of today can be ready to take a leading security role by 2020. Current efforts to train, arm, and equip indigenous forces are scattered, and questions like “who’s training them? . . . to what standards?” are left unanswered.<sup>69</sup> Sen. Jack Reed, a senior member on the Senate Armed Services Committee, added to the skepticism about a successful military hand-off in a 2017 interview when he affirmed “the notion of [the US military] going in, like what was done in Afghanistan, to try to train a national army that will fully replace — I don’t think that’s on the table. . . . That has to be done, but maybe it could be done by somebody else.”<sup>70</sup> Despite there being little indication of an international effort to ensure security post-AMISOM, leaders gathered at the London Conference on Somalia in May 2017 to outline a global commitment to create political, economic, humanitarian, and security

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<sup>67</sup> “AMISOM Force Commander reiterates the Mission’s continued support to Somali National Army,” African Union Mission in Somalia (AMISOM), (2017), accessed March 8, 2018, <http://amisom-au.org/2017/10/amisom-force-commander-reiterates-the-missions-continued-support-to-somali-national-army/>.

<sup>68</sup> Houck, “‘We’re Finding It Difficult to Hold’ Territory in Somalia: Senator.”

<sup>69</sup> Ibid.

<sup>70</sup> Ibid.

stability in Somalia. With security as the essential bottom line in accomplishing the other goals, the plan includes a “Security Pact” that hands over security matters to “Somali-led security institutions and forces that are affordable, acceptable and accountable and have the ability to provide the security and protection.”<sup>71</sup> Since, little has been done to follow up on the partnership described in the conference. In September of 2017, however, Turkey opened its largest overseas military base in Mogadishu to help train “more than 10,000 Somali soldiers.”<sup>72</sup> Nonetheless, the withdrawal of AMISOM in 2020 likely will leave a Somali National Security Force that is unprepared to combat violent rebel and terrorist groups that intensify the effects of drought.

### **5.3. Regional consequences of al-Shabaab resurgence**

The continued presence of AMISOM troops in Somalia is in line with the security interests of the African Union, particularly Somalia’s neighbors Kenya, Ethiopia, and Djibouti. Security crises in Somalia have direct effects on the surrounding East African region as a whole. Migration caused by drought is intensified and redirected by conflict within Somalia. Many people fleeing drought or violence move to neighboring Kenya and Ethiopia. According to the U.N. Refugee Agency, 313,255 Somali refugees resided in Kenya in April 2017, 86% of whom live in rural camps like Dadaab- the largest refugee camp in the world.<sup>73</sup> The number of Somali refugees in Ethiopia at the end of January 2018 is estimated to be 254,274.<sup>74</sup> Although the care for these displaced populations is largely supported financially by the U.N. and other foreign

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<sup>71</sup> “COMMUNIQUE,” (Commissioned at The London Conference on Somalia, London, May 11, 2017), Government of the United Kingdom (2017): 3, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/613714/london-somalia-conference-2017-communicue.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/613714/london-somalia-conference-2017-communicue.pdf).

<sup>72</sup> Abdirahman Hussein and Orhan Coskun, “Turkey opens military base in Mogadishu to train Somali soldiers,” Reuters, (September 2017), accessed March 12, 2018, <https://www.reuters.com/article/us-somalia-turkey-military/turkey-opens-military-base-in-mogadishu-to-train-somali-soldiers-idUSKCN1C50JH>.

<sup>73</sup> “Operational Portal Refugee Situations: Somalia,” United Nations High Commissioner for Refugees (UNHCR), (April 2017), accessed April 2, 2018, <https://data2.unhcr.org/en/situations/horn>.

<sup>74</sup> UNHCR, “Operational Portal Refugee Situations: Somalia.”



donors, the camps still pose a threat to the host countries' resources. Fears of al-Shabaab sympathizers and fighters infiltrating refugee populations to plan attacks abroad may be manifestations of xenophobia, but they also reflect legitimate national security concerns of hosting countries. The deadly attack on Nairobi's Westgate mall in September 2013, that is said to have been planned from within Dadaab, provided evidence that Somalia's conflict was not isolated, and that al-Shabaab could strike on an international level.<sup>75</sup> Al-Shabaab directly, through the threat of violence, and indirectly, by exacerbating drought, poses a threat to Somalia's neighbors. It is therefore in the interest of AMISOM's East African troop donors (Kenya, Ethiopia, Djibouti, Uganda, and Burundi) to continue the mission to combat al-Shabaab in Somalia as well as help train and equip the Somali Security Forces. This is echoed by diplomatic officials from troop-contributing countries (TCCs) such as the Ugandan minister of foreign affairs, Sam Kutesa, who said that "it is important to activate the (African Union) Security Council to reconsider a resolution to reduce the mission."<sup>76</sup> An increased financial burden of the mission is credited as fueling support to end the mission. In January 2016, the European Union, which pays for all the salaries of AMISOM troops, cut funding to African Union personnel by 20%, putting pressure on TCCs to increase spending.<sup>77</sup> Although AMISOM is underfunded, under trained, and under equipped it plays an essential role, albeit as a deterrent, in the protection of the Somali people.

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<sup>75</sup> "Closing the world's largest refugee camp: Kenya says go home," *The Economist*, (May 2016), accessed March 16, 2018, <https://www.economist.com/news/middle-east-and-africa/21698675-or-are-refugees-bargaining-chips-kenya-says-go-home>.

<sup>76</sup> Michael Ike Dibia, "AMISOM troops to be withdrawn from Somalia," *Africa News*, (February 2017), accessed March 8, 2018, <http://www.africanews.com/2018/03/03/amisom-troops-to-be-withdrawn-from-somalia/>.

<sup>77</sup> Paul D. Williams, "Paying for AMISOM: Are Politics and Bureaucracy Undermining the AU's Largest Peace Operation?" *International Peace Institute: Global Observatory*, (January 2017), accessed March 18, <https://theglobalobservatory.org/2017/01/amisom-african-union-peacekeeping-financing/>; Paul D. Williams, "Somalia's African Union mission has a new exit strategy. But can troops actually leave?" *Washington Post*, (November 2017), accessed March 8, [https://www.washingtonpost.com/news/monkey-cage/wp/2017/11/30/somalias-african-union-mission-has-a-new-exit-strategy-but-can-troops-actually-exit/?utm\\_term=.d3ff22b580cd](https://www.washingtonpost.com/news/monkey-cage/wp/2017/11/30/somalias-african-union-mission-has-a-new-exit-strategy-but-can-troops-actually-exit/?utm_term=.d3ff22b580cd).

## **5. Conclusion:**

Ultimately, the future of Somalia's security situation will not be determined by climate change but by military and political actors, domestic and foreign. Continued global support, through aid and security, is crucial in preventing catastrophic famine and moving towards the long-term goal of a self-sustained unified Somali Federal Government, able to provide its people with safety. With a secure environment, Somalis will be able to repair and maintain historic coping mechanism that protect against drought and adapt to future climate anomalies. There is, however, a need for more research in this field. As an undergraduate student researcher far from the affected territory, I had limited access to information about the realities on the ground. Somalia generally proves a difficult region to study: half a century of protracted internal strife has hampered data and research collection. As the world's climate patterns change, it is important that we predict and assess the potential impacts on communities, especially those prone to conflict.

Figure 1:

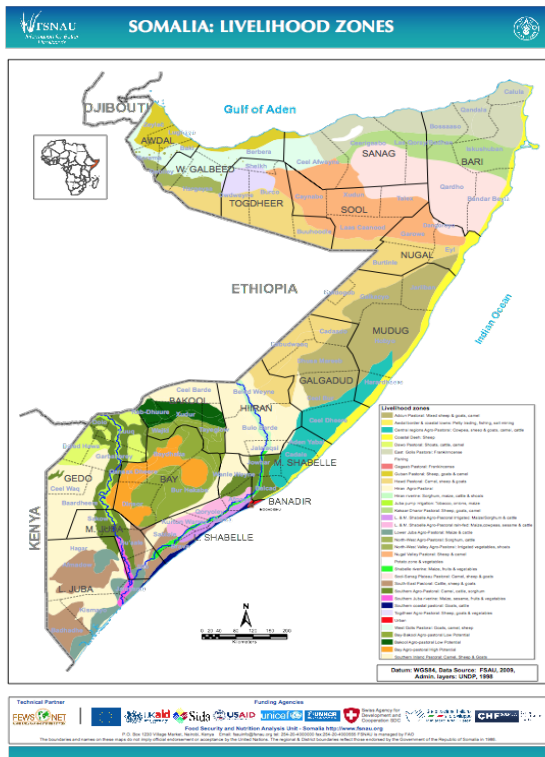
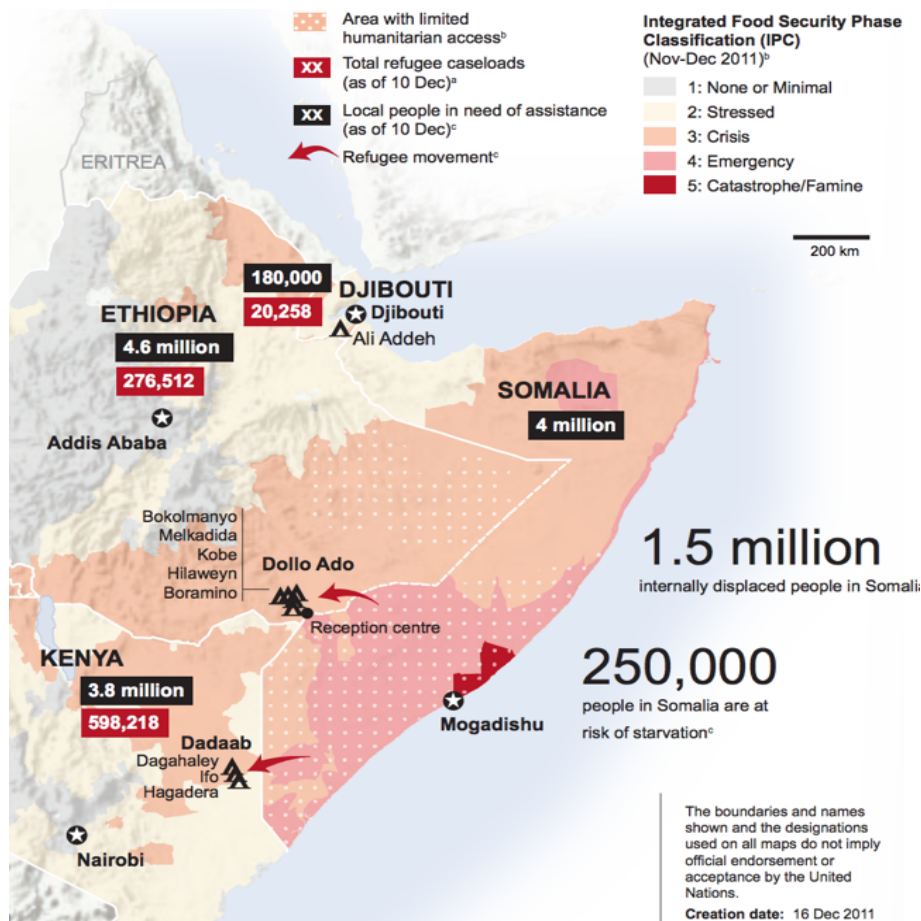


Figure 2:



## Bibliography:

- African Union Mission in Somalia. "AMISOM Force Commander reiterates the Mission's continued support to Somali National Army." AMISOM (2017). Accessed March 8, 2018. <http://amisom-au.org/2017/10/amisom-force-commander-reiterates-the-missions-continued-support-to-somali-national-army/>.
- BBC. "Somalia famine 'killed 260,000 people.'" BBC World News, May 2, 2013. Accessed March 3, 2018. <http://www.bbc.com/news/world-africa-22380352>.
- Buhaug, Halvard and B. L. Turner. "Climate not to blame for African civil wars." *Proceedings of the National Academy of Sciences* 107, no. 38 (September 2010): 16477-16482. <https://doi.org/10.1073/pnas.1005739107>.
- Burke, Jason. "Al-Shabaab plundering starving Somali villages of cash and children," The Guardian, (February 2018), accessed March 8, 2018, <https://www.theguardian.com/world/2018/feb/21/al-shabaab-extortion-indoctrination-somalia>.
- Burke, Jason. "Somali citizens count cost of surge in US airstrikes under Trump." The Guardian, (January 2018). Accessed March 8, 2018. <https://www.theguardian.com/world/2018/jan/23/somali-citizens-count-cost-of-surge-in-us-airstrikes-under-trump>.
- Burke, Marshall, Solomon M. Hsiang, and Edward Miguel. "Climate and Conflict," *Annual Review of Economics* 7, no. 1 (2015): 577-617. Accessed February 7, 2018. <https://doi.org/10.3386/w20598>.
- CBC News, "Somalia truck bombing: Final death toll exceeds 500," (December 2017), accessed March 18, 2018, <http://www.cbc.ca/news/world/somalia-mogadishu-bombing-1.4430078>.
- Collier, Paul and Anke Hoeffler. "On economic causes of civil war." *Oxford Economic Papers* 50, no. 4, (October 1998): 563-573. Accessed February 7, 2018. <https://doi.org/10.1093/oep/50.4.563>.
- Dibie, Michael Ike. "AMISOM troops to be withdrawn from Somalia." Africa News, (February 2017). Accessed March 8, 2018. <http://www.africanews.com/2018/03/03/amisom-troops-to-be-withdrawn-from-somalia/>.
- Ferguson, Jane. "Somalia sees enemy al-Shabab weaken under U.S. military pressure." PBS News, (February 2018). Accessed March 8, 2018. <https://www.pbs.org/newshour/show/somalia-sees-enemy-al-shabab-weaken-under-u-s-military-pressure>.

- Ferris, Elizabeth. Petz, Daniel. "The Year that Shook the Rich: A Review of Natural Disasters in 2011." *The Brookings Institution - London School of Economics Project on Internal Displacement* (March 2012): 97-114. Accessed February 7, 2018.  
[https://www.brookings.edu/wp-content/uploads/2016/06/03\\_natural\\_disaster\\_review\\_ferris.pdf](https://www.brookings.edu/wp-content/uploads/2016/06/03_natural_disaster_review_ferris.pdf).
- Food Security and Nutrition Analysis Unit (FSNAU). "Climate Data Update: *Monthly Rainfall and NDVI*." (March 2011): 1-4. Accessed March 8, 2018.  
[https://reliefweb.int/sites/reliefweb.int/files/resources/Full\\_Report\\_173.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/Full_Report_173.pdf).
- Food Security and Nutrition Analysis Unit (FSNAU). "Food Security and Nutrition Analysis: Post Deyr 2010/11." *Technical Series Report* no. VI. 36. (Nairobi: FSNAU, 2011).
- Gleick, Peter H. "The implications of global climatic changes for international security." *Climatic Change* 15, no. 1-2 (1989): 309-325. Accessed February 7, 2018.  
<https://doi.org/10.1007/BF00138857>.
- Government of the United Kingdom. "COMMUNIQUE," (Commissioned at The London Conference on Somalia, London, May 11, 2017): 3.  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/613714/london-somalia-conference-2017-communicue.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/613714/london-somalia-conference-2017-communicue.pdf).
- Homer-Dixon, Thomas. "Environmental Scarcities and Violent Conflict: Evidence from Cases." *International Security* 19, no. 1 (Summer 1994): 5 – 40. Accessed February 7, 2018,  
<https://www.jstor.org/stable/2539147>.
- Houck, Caroline. "'We're Finding It Difficult to Hold' Territory in Somalia: Senator." *Defense One*, (March 2018). Accessed March 20, 2018.  
<http://www.defenseone.com/threats/2018/03/were-finding-it-difficult-hold-territory-somalia-senator/146376/>.
- Hsiang, Solomon M., Marshall Burke, and Edward Miguel. "Quantifying the Influence of Climate on Human Conflict." *Science* 123, no. 5367, (August 2013): 1-22.  
[doi.org/10.1126/science.1235367](https://doi.org/10.1126/science.1235367).
- Hussein, Abdirahman and Orhan Coskun. "Turkey opens military base in Mogadishu to train Somali soldiers." *Reuters*, (September 2017). Accessed March 12, 2018.  
<https://www.reuters.com/article/us-somalia-turkey-military/turkey-opens-military-base-in-mogadishu-to-train-somali-soldiers-idUSKCN1C50JH>.
- Issa Sanogo, "Food Market and Supply Situation in Southern Somalia," *World Food Programme (WFP)*, (October 2011): 11, accessed March 8,  
<http://documents.wfp.org/stellent/groups/public/documents/ena/wfp255737.pdf>.

- Lewis, Ioan M., and Jorg H.A. Janzen. "Somalia." Encyclopedia Britannica. Last modified January 12, 2018. Accessed February 7, 2018. <https://www.britannica.com/place/Somalia/Economy>.
- Majid, Nisar and Stephen McDowell. "Hidden dimensions of the Somalia famine." *Global Food Security* (2012): 1-7. Accessed February 7, 2018. <http://dx.doi.org/10.1016/j.gfs.2012.07.003>.
- Marshall B. Burke, Edward Miguel, Shanker Satyanath, John A. Dykema, and David B. Lobell. "Warming increases the risk of civil war in Africa." *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, vol. 106, no. 49, (December 2009): 20672. Accessed February 7, 2018. <https://doi.org/10.1073/pnas.0907998106>.
- Maystadt, Jean-François and Olivier Ecker. "Extreme Weather and Civil War: Does Drought Fuel Conflict in Somalia through Livestock Price Shocks?" *American Journal of Agricultural Economics*, vol. 96, issue 4, (July 2014): 1157–1182. Accessed February 7, 2018. <https://doi.org/10.1093/ajae/aau010>.
- Maxwell, Daniel and Merry Fitzpatrick. "The 2011 Somalia famine: Context, causes, and complications." *Global Food Security* 1, no. 1 (2012): 5–12. Accessed April 1, 2018. <https://doi.org/10.1016/j.gfs.2012.07.002>.
- Maxwell, Daniel and Nisar Majid. "Another Humanitarian Crisis in Somalia? Learning from the 2011 Famine." *Feinstein International Center, Tufts University*. (August 2014): 3-14. Accessed March 1, 2018. <http://fic.tufts.edu/assets/Another-HC-in-Somalia.pdf>.
- Maxwell, Daniel et al., "Facing Famine Somali Experiences in the Famine of 2011." *Feinstein International Center, Tufts University*, (October 2015): 4-5. Accessed March 1, 2018. <http://fic.tufts.edu/assets/Facing-Famine-high-quality.pdf>.
- Menkhaus, K. Stabilization and humanitarian access in a collapsed state: the Somali case. *Disasters*, (2010),34: S320-S341. <https://doi.org/10.1111/j.1467-7717.2010.01204.x>.
- Nyamori, Victor. "Kenya: Failure to register Somali refugees putting them at risk of starvation and abuse." Amnesty International, (February 2018). Accessed March 18, 2018. <https://www.amnesty.org/en/latest/news/2018/02/kenya-failure-to-register-somali-refugees-putting-them-at-risk-of-starvation-and-abuse/>.
- O'Loughlin, John and Frank D. W. Witmer, Andrew M. Linke, Arlene Laing, Andrew Gettelman and Jimy Dudhia. "Climate variability and conflict risk in East Africa, 1990–2009." *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, vol. 109, no. 45, (November 2012): abstract. Accessed February 7, 2018. <https://doi.org/10.1073/pnas.1205130109>.

- Reuveny, Rafael. "Ecomigration and Violent Conflict: Case Studies and Public Policy Implications." *Human Ecology* 36, no. 1 (February 2008): 1-13. Accessed February 7, 2018. <http://www.jstor.org/stable/27654252>.
- Scheffran, Jürgen and Antonella Battaglini. "Climate and conflicts: the security risks of global warming." *Regional Environmental Change* 11, (2011): S27 - S39. Accessed February 7, 2018. <https://doi.org/10.1007/s10113-010-0175-8>.
- Seal, Andrew and Rob Bailey, "The 2011 Famine in Somalia: lessons learnt from a failed response?" *Conflict and Health* 7, no. 22 (2013): 3. <http://doi.org/10.1186/1752-1505-7-22>.
- The Economist. "Closing the world's largest refugee camp: Kenya says go home." (May 2016). Accessed March 16, 2018.
- The World Bank Climate Change Knowledge Portal, "Average Monthly Rainfall for Somalia from 1901-2015," (2016), accessed January 27, 2018, [http://sdwebx.worldbank.org/climateportal/index.cfm?page=country\\_historical\\_climate&ThisCCCode=SOM#](http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_historical_climate&ThisCCCode=SOM#).
- The World Factbook* 2018. Washington, DC: Central Intelligence Agency, 2018. <https://www.cia.gov/library/publications/resources/the-world-factbook/geos/so.html>.
- UNHCR. "Operational Portal Refugee Situations: Somalia." United Nations High Commissioner for Refugees. (April 2017). Accessed April 2, 2018. <https://data2.unhcr.org/en/situations/horn>.
- United Nations News. "Somalia famine killed nearly 260,000 people, half of them children." UN News, May 2, 2013. Accessed March 8, 2018. <https://news.un.org/en/story/2013/05/438682-somalia-famine-killed-nearly-260000-people-half-them-children-reports-un>.
- United States of America, Department of Defense, *Climate-Related Risk to DoD Infrastructure Initial Vulnerability Assessment Survey (SLVAS) Report* (Washington D.C.: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, 2018), 1.
- UNOCHA. "Humanitarian Bulletin: SOMALIA." United Nations Office for the Coordination of Humanitarian Affairs (OCHA), (February-March 2018): 1. Accessed April 3, 2018. [https://reliefweb.int/sites/reliefweb.int/files/resources/feb\\_humanitarian\\_bulletin.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/feb_humanitarian_bulletin.pdf).
- UNOCHA. "Horn of Africa: Humanitarian Impacts of Drought." United Nations Office for the Coordination of Humanitarian Affairs (OCHA), no. 6 (June 2017). Accessed March 8, 2018. [https://reliefweb.int/sites/reliefweb.int/files/resources/HOA\\_drought\\_update\\_16June2017.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/HOA_drought_update_16June2017.pdf).

- UNOCHA. "Horn of Africa: Humanitarian Snapshot." United Nations Office for the Coordination of Humanitarian Affairs (OCHA), (December 2016). Accessed March 8, 2018. [https://reliefweb.int/sites/reliefweb.int/files/resources/map\\_1462.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/map_1462.pdf).
- UNOCHA. "Somalia: State-by-State Drought Analysis." UN Office of the Coordination of Humanitarian Affairs. (February 2018): 1-46. Accessed March 5, 2018. [https://reliefweb.int/sites/reliefweb.int/files/resources/20180228\\_state-by-state\\_drought\\_analysis.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/20180228_state-by-state_drought_analysis.pdf).
- Voice of American News. "Has Somalia's Famine Weakened al-Shabab?" VOA, July 27, 2011. Accessed March 14, 2018. <https://www.voanews.com/a/has-somalias-famine-weakened-al-shabab-126341368/142986.html>.
- Wainaina, Stephen. "Droughts in East Africa becoming more frequent, more devastating." African Arguments, March 17, 2017. Accessed April 1, 2018. <http://africanarguments.org/2017/03/17/droughts-in-east-africa-are-becoming-more-frequent-and-more-devastating/>.
- Williams, Paul D. "Paying for AMISOM: Are Politics and Bureaucracy Undermining the AU's Largest Peace Operation?" International Peace Institute: Global Observatory, (January 2017). Accessed March 18. <https://theglobalobservatory.org/2017/01/amisom-african-union-peacekeeping-financing/>.
- Williams, Paul D. "Somalia's African Union mission has a new exit strategy. But can troops actually leave?" Washington Post, (November 2017). Accessed March 8, 2018. [https://www.washingtonpost.com/news/monkey-cage/wp/2017/11/30/somalias-african-union-mission-has-a-new-exit-strategy-but-can-troops-actually-exit/?utm\\_term=.d3ff22b580cd](https://www.washingtonpost.com/news/monkey-cage/wp/2017/11/30/somalias-african-union-mission-has-a-new-exit-strategy-but-can-troops-actually-exit/?utm_term=.d3ff22b580cd).
- World Bank. "World Development Indicators 2017." *World Bank*. (Washington, DC: World Bank, 2017), License: Creative Commons Attribution CC BY 3.0 IGO.
- Yang, Wenchang, Richard Seagar, and Mark A. Cane. "The Annual Cycle of East African Precipitation," *J. Climate* 28, (March 2015): 2385-2404. Accessed February 7, 2018. <https://doi.org/10.1175/JCLI-D-14-00484.1>.
- Yoshimura, Daisuke. "Clans in Somalia." (Report on a lecture by Joakim Gundel, COI Workshop Vienna, Austria, 15 May 2009), Austrian Red Cross, (2009): 1-30. <http://www.refworld.org/pdfid/4b29f5e82.pdf>.
- Zimmerman, Katherine. "Al Shabaab's History with Humanitarian Assistance," Critical Threats, July 27, 2011. Accessed March 1, 2018. <https://www.criticalthreats.org/analysis/al-shabaabs-history-with-humanitarian-assistance>.