

Conflict in the Horn of Africa: The Ogaden War of 1977



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Abstract The nexus of environmental insecurity, disasters, and conflict have become an essential paradigm in security planning, policy, and analyses. The U.S. National Intelligence Council warns that the likelihood of environmentally triggered conflict will increase in the coming decades. Nonetheless, many scholars dismiss this outlook. History appears to support their position because these problems have typically been resolved using peaceful, diplomatic or economic means. Furthermore, it is difficult to establish clear cause–and–effect links between disasters, environmental stress, and armed conflict. However, the security landscape has changed decisively. This chapter suggests that continued peaceful resolution of potential conflicts with an environmental component is incongruous with the realities of the emerging national security landscape. First, climate change and demographic factors are degrading environments and magnifying the effects of environmental degradation and resource shortages beyond the management capacity of many states. Second, the proliferation of failing states has singularly reduced the potential for diplomatic resolution in many regions. Finally, competition for essential resources has been intensified by population growth. Thus, I argue that environmental factors will likely provide a tipping point for regions that already manifest severe environmental degradation and civil unrest; and these insidious problems can be exacerbated by disasters or other short–term climate shocks. The 1977 Ogaden War is one such example and is used as a case study to illustrate these dynamics. An analytical framework is used to illustrate the factors of environmental change, non–sustainable practices, human activity, and governance in Ethiopia during the 1970s to demonstrate their role in triggering the Ogaden War.

Keywords Adaptation · Climate change · Climate change · Cold war · Conflict · Desertification · Drought · Environment–conflict Nexus · Ethiopia · Ethnic warfare · Exposure · Governance · Migration · Ogaden · Ogaden war · Red terror · Somalia · Vulnerability

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1 Introduction

The 1977 Ogaden War is a particularly instructive environmental security case study because it is a very clear example of the environment–conflict nexus. All wars are insidious and destructive, but in this case, the conflict was coincident with a devastating drought and a series of anthropogenically–induced environmental disasters, which intensified extant political and societal instability in Ethiopia (Westad 2007). This is notable because contemporary research suggests that the frequency of climate–related disasters is increasing (Guha–Sapir et al. 2004; Smith and Vivekananda 2009; Trondalen 2009; IPCC 2012) and that the prospect of violent conflict, triggered by environmental instability, is certainly plausible (Kaplan 2000; Diehl and Gleditsch 2001; Smith and Vivekananda 2007; Reuveny 2007; Burke et al. 2009; Hsiang et al. 2011; Solow 2011; Hendrix and Salehyan 2012). Hence, the Ogaden War is an excellent example of the environmental security paradigm, which has emerged as one basis for understanding violent conflict because it demonstrates linkages between instability induced by environmental stress (e.g., disasters, climate change, and anthropogenic factors), governance, civil unrest, demographic factors, and warfare. During the 1970s, the Ethiopian highlands experienced persistent drought and widespread famine, which were exacerbated by non–sustainable practices, population growth, and political instability. The drought and famine elicited a mass migration into the Ogaden region (Fig. 1), against which Somalia maintained irredentist claims.

Somalia invaded the Ogaden region of Ethiopia on 23 July 1977, thus initiating a short, virtually unknown war that led to pervasive instability on the Horn of Africa that persists to this day (Westad 2007). The Ogaden War lasted nine months, and although casualty figures are variable, conservative estimates suggest that it resulted in about 37,000 military dead and perhaps 65,000 civilian dead from direct military action (Tareke 2000). The number of people injured and displaced by the war is thought to be in the tens of thousands. The war was clearly a humanitarian disaster, however, its scope was magnified because at the same time Ethiopia was experiencing a decade–long drought and famine, which killed an estimated two million people and caused the mass migration of another three million (Westing 1991; Nkaierry 1997; Guha–Sapir et al. 2004).

This chapter examines the human and environmental conditions in Ethiopia that contributed to the Ogaden War. This case study does not suggest that environmental stress is a sole cause of warfare. To be more precise, it can potentially trigger violent conflict in unique situations of extreme civil instability and environmental stress within failing states as was the case in the Horn of Africa in 1977 (Westing 1991). The problem that we face today is that the number of failing states is growing (Galgano 2007), and they are more vulnerable to instability caused by environmental stress because they suffer from four related effects: (1) diminished agricultural production and food insecurity; (2) economic decline; (3) population displacement; and (4) civil disruption (Homer–Dixon 1991; Porter 1995; Lee 1997; Reuveny 2007). Furthermore, a growing body of evidence suggests that the incidence of



Fig. 1 Map of Ethiopia depicting the main Somali attack in July–December 1977. Cartography by the Author

environmental and climate–related disasters is on the rise, and the number of people affected is increasing (IPCC 2012, 2014). This study uses an environmental security framework proposed by Krakowka et al. (2012) to analyze the complex and interrelated human and environmental factors that triggered the Ogaden War.

2 Disasters, Environmental Instability, and the Security Landscape

The contemporary world is facing environmental disasters on an unprecedented scale: one in twenty-five people worldwide have been affected by disasters since 1994 and they have claimed more than 58,000 lives annually. Many researchers attribute this spike to rapidly growing populations and the pervasive effects of global climate change, which may be intensifying natural disasters such as drought, storms, and floods (Guha–Sapir et al. 2004; IPCC 2012). Geography, as an integrating spatial discipline, provides a particularly effective vantage point from which to examine climate–induced disasters, and geographers are widely recognized as founders of the discipline of disaster and hazard analysis (Cutter 1993). Geographers, too, have had a profound influence on our general understanding of the full scope of

crises generated by complex interactions of natural and human processes (Cutter et al. 2002). Understanding and explaining these interactions are essential because we tend to classify disasters into discrete categories such as natural and anthropogenic; yet in reality these divisions are not clear-cut. In fact, most disaster researchers argue that it is not possible to make well-defined distinctions between these classifications because many disasters—floods and famine by way of example—are often triggered by the interaction of a number of natural and anthropogenic factors (Alexander 1993).

The situation in Ethiopia during the early 1970s highlights the important and complex interactions of natural and anthropogenically-generated disasters, human processes, and the security landscape. Persistent drought in Ethiopia begat famine, however, the famine was intensified by human-induced desertification, non-sustainable agricultural practices, a lack of infrastructure, and ineffective governance (Myers 2004). The insidious and reinforcing effects of these natural and anthropogenic factors created a highly stressed environment, which clearly contributed to the destabilization of Ethiopia and set the stage for the Somali invasion of the Ogaden (Westad 2007). Events such as the Ogaden War imply that a nexus exists between disasters, environmental stress, and conflict because these stresses intensify latent ethnic divisions, poor governance, and social stratification, thus further undermining stability beyond the adaptation ability of the state (Homer-Dixon 1999). Evidence suggests that this trend will persist because climate change and population growth will continue to stress marginal environments in places with inherently weak governance (Smith and Vivekananda 2007; IPCC 2012).

3 The Environment–Conflict Nexus

Environmental security refers to a broad range of security issues intensified by environmental stress, resource shortages, and demographic factors (Galgano and Krakowka 2010). Environmental security is perhaps the most transnational of transnational issues because it does not respect sovereign boundaries and it tests our understanding of national security processes. The environmental security model is dependent on four critical variables: environmental stress, resource scarcity, governance, and political/societal response (Galgano and Krakowka 2010). Environmental stress is caused by climate change, disasters, and non-sustainable practices. Scarcity is determined by consumption, population change, and the unequal distribution of resources. Governance essentially determines the ability of civil authorities to adapt to a stressed environment. This is important because by the end of this century, about one-third of the Earth's surface will be significantly altered and its population will approach nine-billion (Floyd 2014). Consequently, understanding the implications of the environmental security concept are important because conflicts with an environmental component coupled with divisive ethnic/political dimensions, such as those observed in the Ogaden case study, have

increased pressure on the West and U.N. to commit resources to stability and disaster relief efforts (Klare 2002; Guha–Sapir et al. 2004).

Not all environmental problems lead to violent conflict and not all conflicts emanate from environmental stress. In fact, it is rare for linkages between environmental stress and conflict to be directly and exclusively causative because there are many other variables mixed in, such as ineffective economies, repressive governments, ethnic conflicts, and social stratification. However, environmental security is not simply a neo-Malthusian paradigm (Myers 2004). The environment can play a decisive role in triggering conflict, and environmental security doctrine is only one plausible explanation, it is not a deterministic concept (Porter 1995). Scarcity and stress contribute to conflict only under particular conditions, but there is no deterministic link (Homer–Dixon 1999). Dynamics between environmental stress and conflict are complex and the outcome of a potential environmental security scenario is influenced strongly by government policy, social structure, governance, technology, and infrastructure (Mathews 1989; Solow 2011).

Contemporary research has, however, defined clear links between environmental stress and conflict. Hsiang et al. (2011) developed a quantitative model using ENSO data from 1950–2004 and demonstrated that the probability of conflicts doubles in the tropics during El Niño years. Burke et al. (2009) conducted a comprehensive examination of global climate change and its potential linkages to armed conflict in sub-Saharan Africa, and suggest that there will be a 54% increase in the incidence of armed conflict by 2030. Hendrix and Salehyan (2012) examined deviations from normal rainfall patterns in Africa and their results indicate that extreme variations are associated positively with political and civil conflict. Thus, it appears that environmental change and scarcity is already contributing to instability and violence in the developing world (Solow 2011). The critical problem is defining the tipping point between a highly degraded and stressed environment, and those societies and governments that can't adapt (Homer–Dixon 1999). The real problem facing the West is that, in the developing world, the capacity to adapt is declining as governments continue to fail (Galgano 2007).

4 The 1977 Ogaden War

The Ogaden War began in July 1977 when Somali forces crossed into Ethiopia to bring to fruition its expansionist dream of a *Greater Somalia*. This confrontation, which became one of the classic proxy conflicts of the Cold War era, lasted for 9 months, and is one of the two largest wars between African states in contemporary times (Nkaisserry 1997). The Somalis were eventually defeated and the war cost each side approximately 35,000 dead along with an estimated 2000 Cuban mercenaries (Tareke 2000). The total human toll in civilian dead, displaced people and disrupted lives possibly numbers in the millions, but likely will never be known (Westing 1991). Nonetheless, the Ogaden War clearly illustrates that armed conflict is one of the greatest disasters that can befall a population, and that its effects linger

for many decades afterward. The Ogaden War too, illustrates the fact that in modern warfare, civilians now bear the majority of injuries and deaths (Christenson 2008). The war effectively ended Somalia's ability to function as a state and the entire region was plunged into three decades of instability and conflict, which persists in the Horn of Africa to this day.

4.1 A Military Geography of the War

The Ogaden War began on 23 July 1977 and was fought in two distinct phases. The first, the Somali offensive, lasted until about December when their attack was halted on the outskirts of Dire Dawa (Fig. 1). The second phase began in early 1978 with an Ethiopian counter-offensive, which ultimately drove the Somalis from Ethiopian territory. The conduct of the war was tempered by the timeless geographic factors of time and space, terrain, key transportation nodes, and climate and weather (Tareke 2000). The frontier between the two states is about 900 miles long, but the principal military effort was concentrated along a very narrow corridor extending from the main Somali base at Hargeysa to Dire Dawa (Fig. 1) (Harkavy and Neuman 2001). The Somali strategy had two mutually supporting objectives. First, they planned to use regular forces combined with irregular units, composed of ethnic Somalis (i.e., the Western Ogaden Liberation Front), to overrun the large, sparsely populated semiarid upland plateau of the Ogaden Desert in the general direction of Werder (Fig. 1). The second, and decisive element of their strategy, was their main attack toward the heartland of Ethiopia along the axis Hargeysa–Jijiga–Harar–Dire Dawa (Fig. 1). This drive was intended to sever Ethiopia's main rail link to the Red Sea, which could have forced the total defeat of Ethiopia, or at least forced it to cede the Ogaden region (Harkavy and Neuman 2001).

The war began well for the Somalis, and by the end of July, they had captured about 60% of the Ogaden largely using irregular forces, which seized small, widely spaced Ethiopian garrisons on the Ogaden plateau. Along the decisive axis of the war, the Somalis captured Jijiga and seized the key upland passes as they approached Harar and Dire Dawa. However, the offensive stalled in front of Harar as the Somalis became overextended and lost their ability to maneuver in the rugged mountains (Tareke 2000; Schwab 1978). Here, Ethiopian forces, reinforced with Cuban mercenaries and Soviet weapons, eventually stopped the Somalis in the highlands along the southern rim of the Great Rift Valley. In February 1978, the Ethiopians began their counteroffensive along two principal axes: the main axis east from Harar toward Jijiga, and a secondary attack north from Dire Dawa toward Djibouti (Westad 2007). The main thrust toward Jijiga finally succeeded on 5 March, and Ethiopian forces reached the border with Somalia on 10 March 1978. On 15 March, both sides agreed to a truce, brokered by the U.S. and U.S.S.R., which essentially restored the *status quo* (Tareke 2000).

The Ogaden conflict demonstrated the futility of a preemptive war initiated by a smaller, weaker state against a larger, more powerful opponent. The Somalis viewed

Ethiopia as greatly weakened and they opted to seize a temporary advantage and attacked into the Ogaden (Tareke 2000). However, geography clearly worked against them. The Ethiopians adroitly used their great strategic depth by not engaging in a decisive battle with the Somalis, and by the winter, the factors of terrain and distance stopped the invaders in front of Harar as much as any military effort by Ethiopian forces (Harkavy and Neuman 2001). During their initial advance on Jijiga, the relatively open terrain enabled the Somalis to fight a war of maneuver, but that advantage was lost once they entered the constricted, mountainous terrain in front of Harar and Dire Dawa (Schwab 1978).

The Ogaden War has its roots in three important events. First, Ethiopia's monarch, Haile Selassie, was deposed by a military *coup-de-etat* in 1974. The Mengistu government, which followed, proved to be ineffective, and the country devolved into a near civil war. Thus, the deteriorating political and economic situation in Ethiopia convinced the Somalis that the time was right to invade the Ogaden. Somalia's irredentist claims were the second driving factor behind the war. Following their independence in 1960, the Somalis pursued a nationalist agenda that included long-held irredentist claims on the Ogaden as well as territory in Kenya and Eritrea (Ofcansky and Berry 1991). Thus, there were important politico-military factors that drove Ethiopia and Somalia into a military confrontation. However, in this case there is a third—environmental—dimension that must be taken into account. The crushing drought, which affected the region beginning in 1969, caused widespread famine and exacerbated pressures created by civil instability within Ethiopia to the extent that it caused the forced migration of nearly three million people into the Ogaden (Nkaiserry 1997).

4.2 *An Environmental Security Analysis*

The Ogaden War illustrates many of the elements of the environment–conflict nexus: i.e., a failing state with ethnic conflict and social stratification, rapid population growth and mass migration, environmental degradation, and resource competition. In the environmental security model, these factors combine to exceed the adaptation ability of the government, which may eventually lead to violent conflict. The Ogaden War represents a historically destructive convergence of natural and anthropogenic disasters that overwhelmed the entire region—but Ethiopia in particular—and serves as a useful example of the environmental security paradigm. The region experienced a drought that lasted for more than a decade. In Ethiopia, the drought combined with non-sustainable land use and agricultural practices to initiate a massive famine that was exacerbated by the devolution of the state, which essentially meant that survival for most Ethiopians was a matter of their own personal initiative (Khalif 2000). Guha–Sapir et al. (2004) estimate that between 1974 and 1977 the total number of Ethiopians killed or otherwise adversely affected by the drought and famine was about 1.9 million people. They further estimate that in the decade that followed the war, another 22 million Ethiopians

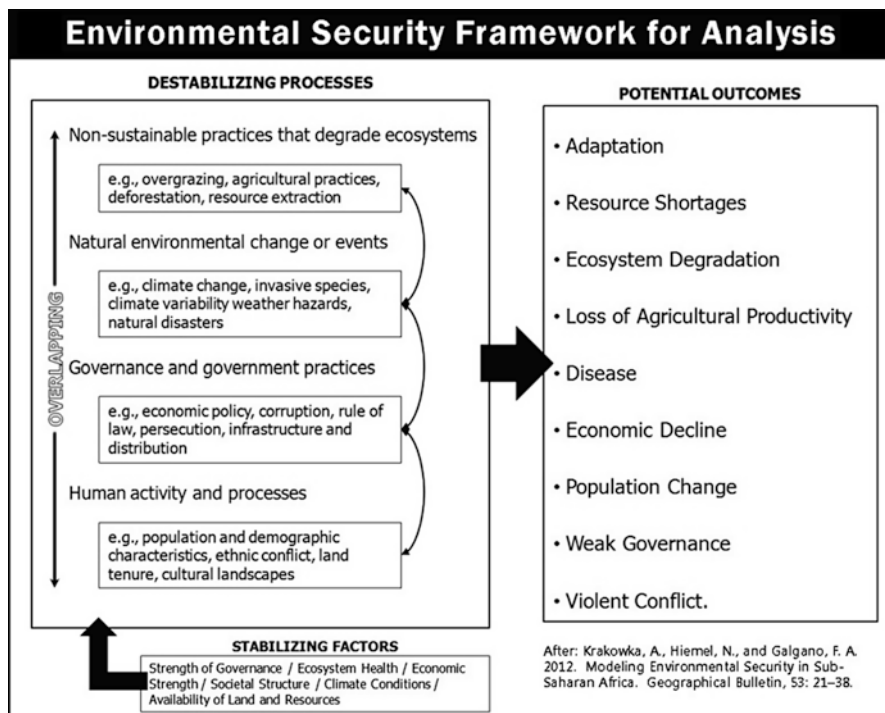


Fig. 2 Framework for environmental security analysis (Krakowka et al. 2012)

were killed or adversely affected (Guha–Sapir et al. 2004). These numbers have to be considered with the effect of the drought and famine on the entire region. During the period 1974–1988, it is estimated that some 460,000 people were killed in Djibouti and another 1.1 million in Somalia (Guha–Sapir et al. 2004). Major climate disasters typically trigger or encourage mass migrations and this was certainly the case in Ethiopia (Christensen 2008). As the drought and famine deepened during the 1970s, population growth, poverty, and political instability compounded these problems, and initiated a mass migration of some three million people into the Ogaden Region, which Somalia viewed as an encroachment on its historical, sovereign territory (Khalif 2000; Tareke 2000).

Although the Ogaden case study offers a compelling example of environmental security, it also underscores the principal weakness of the model, which is a lack of predictive capacity. That is, we have no overarching sense of which environmental scenarios will lead to conflict in the future (Myers 2004). Therefore, an analytical framework is helpful to understanding the complex, and interrelated components of such a conflict. Krakowka et al. (2012) developed a framework (Fig. 2) to examine the nexus between environmental stress, instability, and conflict. Their investigation of environmental security in Sub-Saharan Africa demonstrated a need for careful analysis using such a framework to examine the complex relationships between

degraded environments, natural environmental change, political stability, and human activity. The framework is not a checklist because they tend to disconnect intrinsically linked factors into artificially discrete variables. The elements of their framework are not intended to be independent or sequential; in fact, they take place concurrently. Furthermore, they are synergistic and amplify their mutual influence on the ecosystem and population. For that reason, the framework given in Fig. 2 does not imply a linear or sequential relationship that is characteristic of other environmental security models in the literature. This analytical framework (i.e., Fig. 2) is used to assess the relevant components of this case study.

4.2.1 Non-sustainable Practices

In 1977, Ethiopia was a rural society and the security and productivity of its people was entirely tied to the land as subsistence farmers and nomadic herders. They routinely suffered from the depredations attendant to periodic crop failures and loss of livestock caused by periods of drought or excessive rain and floods. As the population grew, farms encroached on forests and marginal lands (e.g., slopes, etc.), causing deforestation, accelerated soil erosion, and a significant lowering of the water table (Ofcansky and Berry 1991). Rangelands used by pastoral nomads became increasingly restricted and this led to a rapid denudation of the grasslands, which accelerated desertification in the highlands (Kalif 2000). These non-sustainable practices slowly diminished food supplies, and thus Ethiopia was already approaching the brink of a severe food crisis when the onset of an unprecedented drought in the late 1960s initiated a famine that persisted well into the 1980s. These conditions contributed to relentless civil and political instability, which ultimately led to the fall of Haile Sellassie and then the collapse of the Mengistu regime as both governments lost their legitimacy to rule (Westing 1991).

4.2.2 Natural Environmental Change

Clearly, the single most damaging environmental variable was the drought, which expanded eastward through the Horn of Africa, and by the middle of the 1970s, starvation threatened the lives of millions of Ethiopians (Westing 1991). On average, the Ethiopian Highlands receive approximately 1229 mm (~48 in.) of rain annually (NCDC 2013). The region has a grassland climate within which precipitation and evapotranspiration are essentially balanced. However, this is a fragile ecosystem that cannot withstand long departures from this equilibrium. At the onset of the drought (Fig. 3), average annual precipitation declined to approximately 970 mm (~38 in.); and by the middle of the decade, the region was only receiving about 600 mm (~23 in.) per year (Conway et al. 2004). Thus, by 1974, famine brought about by the drought had claimed the lives of about approximately 300,000 people (Nkaisserry 1997). After assuming power in 1974, the Mengistu regime embarked on a program to improve the condition of the peasants, but the famine persisted

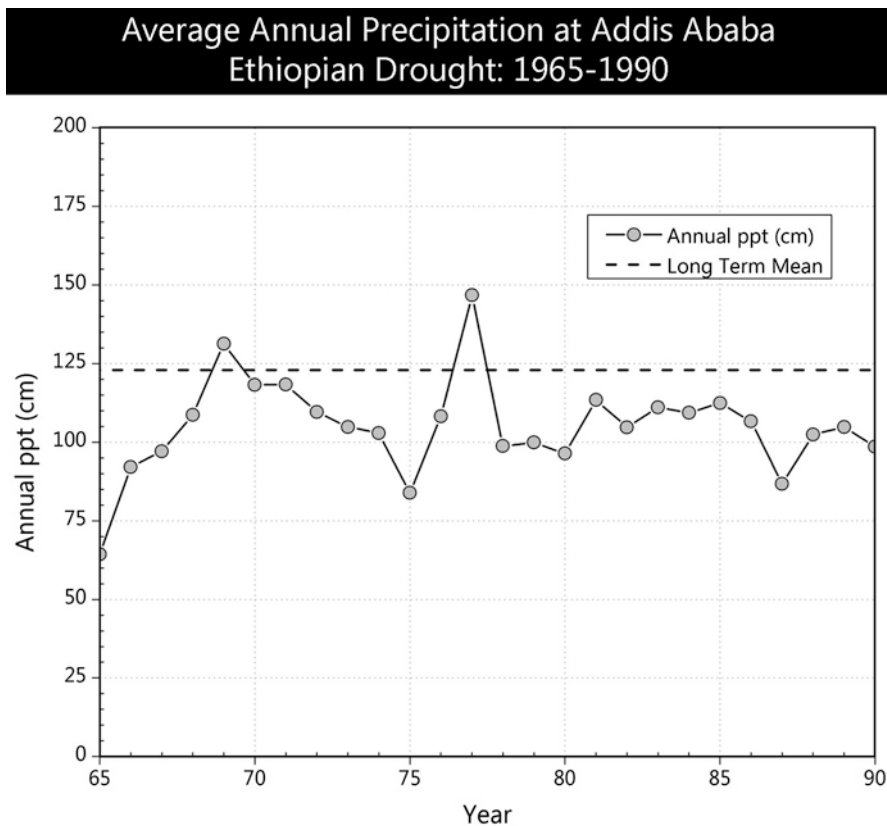


Fig. 3 Rainfall data for Addis Ababa, 1965–1990 (NCDC 2013)

despite these efforts; and by 1977, drought and famine forced more than three-million people to migrate into the Ogaden to seek relief (Westing 1991).

4.2.3 Governance and Government Practices

Following the Second World War, Ethiopia labored under the rule of a rigid, centralized monarchy. Haile Sellassie led a poorly developed country and modernization was accepted only so long as it enhanced the power and prestige of the monarchy (Nkaisserry 1997). The imperial elite that dominated the country actively blocked the adoption of Western technology as well as agricultural and industrial methods, and thus the country was composed almost entirely of subsistence farmers and nomadic pastoralists. By the time of the *coup* in 1974, there were only about 50,000 skilled workers in all of Ethiopia. Consequently, the country was technically unsuited to adapt to the crushing effects of the drought and famine (Westad 2007). Thus, Ethiopia was one of the poorest countries in the world with a 1975 GNP of

\$90 *per capita*; and, by every standard, it was a failed state and was rated among the twenty-five most impoverished in the world (Ofcansky and Berry 1991). Although Selassie was seen as the father of African independence, the Ethiopian people began to regret the lack of opportunity and extreme backwardness of rural areas. Corruption and general governmental inefficiency further eroded Selassie's ability to govern effectively. As the drought and famine began to affect a larger segment of their society, Ethiopians viewed the lack of a coordinated government response as evidence that the government had lost its legitimacy to rule (Westad 2007).

Yet, opposition to the regime by average citizens was not particularly strong. In the end, it was activism by junior officers in the army that eventually provided the impetus for change, and a military-led *coup* overthrew Selassie in 1974. The new military-led government, the *Derg*, took power, but it had very few followers and offered only a vague program for improvement (Westad 2007). This led to a period of shifting leadership and further chaos until the ascension to power of Major Mengistu Haile Mariam. Nevertheless, his government proved to be equally ineffective, and rather than propel Ethiopia on a path of modernization and recovery, the country devolved into economic, civil, and political chaos. For example, his attempt to promote land reform was widely accepted by the majority of Ethiopians, but breaking up local patterns of power, social customs, and land tenure practices proved to be very difficult and these efforts largely failed (Westad 2007).

The new regime also faced a difficult war in Eritrea and growing insurgent movements in Tigray Province and in the Ogaden, which only intensified the effects of the environmental disaster that the average citizen faced (Nkaisserry 1997). By 1977, Ethiopia was in a state of continuous internal conflict. In response, the Mengistu regime instituted the so-called "Red Terror" in 1977 during which government security forces killed thousands of students, engineers, teachers, and scientists (Tareke 2000). Thus, Ethiopia entered the spiral of environmental stress and violence that characterizes the environmental security paradigm. Developing states, such as Ethiopia, are more susceptible to this spiral of violence because they are, characteristically, more dependent on the environment for their economic productivity, and they do not have the institutional and economic resiliency to overcome exposure to adverse environmental effects (Galgano and Krakowka 2010).

Thus, the stage for the war was set. During the 1970s, Somalia was promoting a nationalist and expansionist agenda and also maintained strident irredentist claims against the Ogaden region within Ethiopia with its large ethnic Somali population (Tareke 2000). The Somali regime viewed the extreme instability within Ethiopia as a sign of weakness, but more importantly, the environmentally induced mass migration of millions of ethnic Ethiopians into the Ogaden may have triggered the Somalis to attack and attempt secure the region from this apparent encroachment (Nkaisserry 1997).

4.2.4 Human Activity and Processes

Population and demographics are fundamental variables in the environmental security calculus. Ethiopia's 1950 population was approximately 18.4 million people, and by 1975, it nearly doubled to about 32.9 million. This growth strained marginal environmental conditions and ineffective governmental institutions (Ofcansky and Berry 1991). Ethiopia was also confronted with significant demographic problems and social stratification, and the devolution of the state was propelled by ethnic tensions as well. Ethiopia's economic divisions coincided with its ethnic and social strata. There are three major ethnic groups of Ethiopians, the Amharas, Tigres, and Gallas (Ofcansky and Berry 1991). These ethnic Ethiopians dominated the state's political, civil, and economic institutions and the other ethnic groups that formed the lower strata of Ethiopian society, the ethnic Somalis and Eritreans in the northern and eastern parts of the country were alienated from Ethiopian society (Westad 2007). These groups were effectively excluded from participation in any of the institutions of the Ethiopian government and were economically marginalized, which fostered their anti-government violence (Tareke 2000). Consequently, they lived in the margins of Ethiopian society and shared in a quest for a homeland based on common ethnicity. Not surprisingly, both groups became involved in insurgencies against the state, which only further degraded the security situation. The Mengistu government's implementation of Marxist polices and move to the extreme left did little ease the tensions among ethnic groups. Mengistu steadfastly refused to compromise with these groups or cede effective control of "one inch of national territory," which was his stated policy (Westad 2007 p 259). As a result, especially in the Ogaden, repression of non-ethnic Ethiopians was stepped up, and the Somalis clearly took notice.

5 Discussion

This case study suggests that one of the most important prerequisites for a state to adapt to extreme environmental stress and climate disasters is political stability and sound governance (Westing 1991). Unfortunately, the outlook in this important area, especially in the developing world, is not encouraging as many of the world's developing countries are failing (Galgano 2007). In fact, an examination of contemporary history suggests that three quarters of all wars since 1945 have been within developing states and those violent conflicts have caused some 20 million deaths (Solow 2011). Certainly, environmental stress is not the sole cause of violent conflict, and without question, Somalia was poised to invade the Ogaden regardless of the environmental conditions in Ethiopia. Nevertheless, it is clear that Ethiopia's internal, political, and civil problems were pushed beyond the brink by a severe drought and devastating famine. The inability of the state to adapt prompted a mass migration into a sensitive area, which likely provoked the Somalis to attack in 1977 (Myers 2004). Therefore, it is not irrational to assume that Ethiopia's severe

environmental problems were a fundamental and perhaps decisive factor in triggering this war. Nevertheless, there are simply too many variables, as this case study demonstrates, to develop a simple cause-and-effect model. However, failed states in the developing world certainly appear to be predisposed to environmentally triggered instability given their ineffective governments, weak economies, and social stratification (Smith and Vivekananda 2007). These factors combine to make them more susceptible to violence and instability enabled by an extreme environmental disaster such as the Ethiopian drought and famine (Westing 1991). In this case, the common Ethiopian peasant lived under great pressure from poor economic circumstances, increasingly hostile environmental conditions, and civil unrest (Ofcansky and Berry 1991).

Today there are about 2.7 billion in the developing world who live in absolute poverty and with the absence of effective governmental institutions (Smith and Vivekananda 2009). Projections indicate that environmental stress will have a fundamental effect on conflict because the economic welfare of more than 3.5 billion people—about one-half of the world's population—is tied to the land (Solow 2011). Therefore, factors such as agricultural productivity, water, fuel, fisheries, and forested lands are crucial environmental indicators; especially given the reality of population growth and climate change (U.N. 1987; IPCC 2012). This is of great consequence because nearly 75% of the world's most impoverished inhabitants are subsistence farmers attempting to live on land with declining productivity (IPCC 2014). As this case study suggests, drought, deforestation, and soil erosion can quickly become major problems in these regions, which are magnified by social iniquities and ineffective governments.

Understanding the complex linkages between environmental stress, disasters and conflict is essential for leaders in governmental and nongovernmental relief agencies and in their security forces. While a framework such as the one used in this case study cannot be predictive with any certainty, it can illustrate the complex interactions of environment, society, and government in a potential relief operation or military intervention. During the last decade, disasters have caused damage estimated at about \$67 billion per year. Furthermore, the economic costs attendant to natural disasters have increased by a factor of 14 since the 1950s and these costs only promise to accelerate (IPCC 2012). With recent conflicts and environmental disasters in Indonesia, Rwanda, East Timor, Darfur, and Haiti as the precedent, the use of Western and United Nations (U.N.) relief and military forces to address the environmental dimensions of regional conflict has been now well established although U.N. and Western leadership has approached these commitments with acute reluctance—post earthquake response in Haiti is the most recent example (Dulian 2004; Wahlstrom 2013).

6 Summary and Conclusions

While the role of the environment as an enabler of violent conflict, on an interstate scale, remains a hypothetical exercise, environmental factors will continue to be strategically important variables on the national security landscape. Without question, the environment should be used as an indicator of impending regional instability and a persistent reminder of the significance of these variables to military and security affairs. This case study suggests that a reasonable nexus exists between environmentally induced instability and violent conflict—in certain scenarios. Undoubtedly, the Somalis maintained irredentist designs on the Ogaden region and their invasion may have been inevitable. However, as this analysis suggests, their decision to invade was possibly induced by what they saw as a unique window of opportunity represented by the devolution of the Ethiopian state. The combination of drought and famine, internal political conflict, and growing insurgencies clearly weakened Ethiopia. Finally, it is apparent that the Somalis misjudged the environmentally–forced migration of some three million Ethiopians into the Ogaden as an encroachment on their sovereign territory and a clear provocation.

The evolution of the global strategic situation following the end of the Cold War has led to the acceptance of an expanded definition of national security, which includes conflict intensified by environmental factors, population pressure, and resource scarcity. Globalization has contributed to environmental security problems because it has created expectations in the developing world of economic growth, which when combined with population pressure and climate change has stressed many ecosystems beyond carrying capacity. It has also raised the number of failed states incapable of keeping pace with exposure to environmental change. As global population grows, economic demands may exceed the resource and economic base of many states, erode governmental legitimacy, destabilize regions, and foster conflict over increasingly scarce resources.

The scenario presented in this paper suggests that the future is not bright. People already consume 40% of the world's food and energy potential. While that percentage may be sustainable, it is unlikely that it can keep pace with expected increases in global population and the economic and demographic changes attendant to globalization. Fortuitously, however, this grim prognosis is only a forecast. Like all predictions, it is rooted in contemporary trends and those of the recent past. Human society is not necessarily destined to enter a slow and painful decline into environmental chaos: there are scientific, technical, and economical solutions that may reduce the level of environmental stress and diminish potential conflict. Yet, possibilities for adaptation are confounded by substantial social, political, and institutional barriers, especially in the developing world. Unquestionably, our response to humanitarian disasters such as the one in the Ogaden demands the evaluation of environmental threats and using an analytical framework can be helpful. The principle challenge to U.S. governmental agencies and its security apparatus is that they are normally in the business of reacting to crises, and not traditionally staffed to plan for the non–traditional challenges presented by

environmental security threats such as the one given in this case study. However, in order to lower the threshold of these environmental/humanitarian crises, the U.S. must address the roots of environmental instability. Thus, leaders within governmental and nongovernmental organizations must develop plans to deal with environmental security threats. This may mean adopting “softer” or stability-enhancing strategies that promote regional plans, rather than state-centric solutions, and assist in the development of governance and infrastructure in developing regions.

Literature Cited

- Alexander D (1993) Natural disasters: a framework for research and teaching. *Disasters* 15(3):209–226
- Burke M, Miguel E, Satyanath S, Dykema J, Lobell D (2009) Warming increases the risk of war in Africa. *Proc Natl Acad Sci* 106(49):508–537
- Christensen ER (ed) (2008) *The Johns Hopkins and red cross–red crescent public health guide in emergencies*. International Federation of Red Cross and Red Crescent Societies, Geneva. http://www.jhsph.edu/research/centers-and-institutes/center-for-refugee-and-disaster-response/publications_tools/publications/_CRDR_ICRC_Public_Health_Guide_Book/Public_Health_Guide_for_Emergencies. Accessed 11 July 2017
- Conway D, Mould C, Bewket W (2004) Over one century of rainfall and temperature observations in Addis Ababa, Ethiopia. *Int J Climatol* 24:77–91
- Cutter SL (1993) *Living with risk*. Edward Arnold, London
- Cutter S, Gollidge R, Graf WL (2002) The big questions in geography. *Prof Geogr* 54(3):305–317
- Diehl P, Gleditsch N (eds) (2001) *Environment and conflict*. Westview Press, Boulder
- Dulian A (2004) Rwandan genocide. *Int Aff* 50(4):40–44
- Floyd R (2014) Analyst, theory, and security: a new framework for understanding environmental security. In: Floyd R, Matthew RA (eds) *Environmental security approaches and issues*. Routledge, New York
- Galgano FA (2007) A geographic analysis of ungoverned spaces. *Pennsylvania Geogr* 44(2):67–90
- Galgano FA, Krakowka A (2010) The environment’s influence on regional stability and conflict. *Pennsylvania Geogr* 48(2):11–40
- Guha–Sapir D, Hargitt D, Hoyois P (2004) *Thirty years of natural disasters 1974–2003: the numbers*. Presses University of Louvain, Louvain-la-Neuve
- Harkavy RE, Neuman SG (2001) *Warfare in the third world*. Palgrave, New York
- Hendrix C, Salehyan I (2012) Climate change, rainfall, and social conflict in Africa. *J Peace Res* 49(1):35–50
- Homer–Dixon T (1991) On the threshold: environmental change as causes of acute conflict. *Int Secur* 16(2):76–116
- Homer–Dixon T (1999) *Environmental scarcity and violence*. Princeton University Press, Princeton
- Hsiang S, Meng K, Cane M (2011) Civil conflicts are associated with global climate change. *Nature* 476:438–441
- Intergovernmental Panel on Climate Change (IPCC) (2012) *Managing risks of extreme events and disasters to advance climate change adaptation*. Special report of working groups I and II of the Intergovernmental Panel on Climate Change, Field CB, Barros V, Stocker TF, Qin D, Dokken DJ, Ebi KL, Mastrandrea MD, Mach KJ, Platter GK, Allen SK, Tignor M, and Midgley PM (eds), Cambridge University Press, Cambridge. <http://ipcc-wg2.gov/SREX/>. Accessed 21 July 2017

- Intergovernmental Panel on Climate Change (IPCC) (2014) Climate change 2014: impacts, adaptation, and vulnerability. Summary for policy makers. Working Group II Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge. <http://www.ipcc.ch/report/ar5/wg2/>. Accessed 8 Nov 2016
- Kalif MH (2000) The politics of famine in the Ogaden. *Rev Afr Polit Econ* 27(84):333–337
- Kaplan RD (2000) *The coming anarchy: shattering the dreams of the post-cold war*. Random House, New York
- Klare M (2002) *Resource wars: the new landscape of global conflict*. Henry Holt and Company, New York
- Krakowka A, Hiemel N, Galgano FA (2012) Modeling environmental security in Sub-Saharan Africa. *Geogr Bull* 53:21–38
- Lee J (1997) An inventory of conflict and environment, a conceptual model. School of International Service, American University. <http://www1.american.edu/tesd/ice/elements.htm>. Accessed 1 June 2016
- Mathews J (1989) Redefining security. *Foreign Aff* 68(2):162–177
- Myers N (2004) environmental security: What's new and different? The Hague conference on environment, security and sustainability, the peace palace, The Hague, The Netherlands, 9–12 May 2004. <http://www.envirosecurity.org/conference/working.php>. Accessed 18 June 2017
- NCDC (National Climate Data Center) (2013) Monthly climatological summary for Ethiopia, 1964–1987. Climate Data Online, U.S. Department of Commerce, National Oceanographic and Atmospheric Administration. <http://www.ncdc.noaa.gov/cdo-web/quickdata>. Accessed 19 Mar 2013
- Nkaisserry J (1997) *The Ogaden war: analysis of its causes and its impact on regional peace on the Horn of Africa*. MA Thesis, United States Army War College, Carlisle
- Ofcansky T, Berry L (1991) *Ethiopia: a country study*. Kessinger Publishing, New York
- Porter G (1995) Environmental security as a national security issue. *Curr Hist* 94(592):218–222
- Reuveny A (2007) Climate change-induced migration and violent conflict. *Polit Geogr* 26(6):656–673
- Schwab P (1978) Cold war and the Horn of Africa. *Afr Aff* 77(306):6–20
- Smith D, Vivekananda J (2007) A climate of conflict. *International Alert*, London. <http://www.international-alert.org>. Accessed 12 Dec 2017
- Smith D, Vivekananda J (2009) Climate change, conflict and fragility. *International Alert*, London. <http://www.alert.org/resources/publications/climate-change-conflict-and-fragility>. Accessed 1 Aug 2017
- Solow A (2011) Climate for conflict. *Nature* 476:406–407
- Tareke G (2000) The Ethiopia–Somalia war of 1977 revisited. *Int J Hist Stud* 33(3):635–667
- Trondalen JM (2009) Climate changes, water security, and possible remedies for the Middle East. United Nations World Water Assessment Programme, Scientific Paper, United Nations Educational, Scientific and Cultural Organization, Paris
- U.N. (United Nations) (1987) *Our common future*. Report of the world commission on environment and development (The Brundtland Report). Oxford University Press, New York. <http://www.un.org/documents/ga/res/42/ares42-187.htm/>. Accessed 23 June 2012
- Wahlstrom M (2013) Progress and challenges in global disaster reduction. *Int J Disaster Risk Sci* 4(1):48–50
- Westad OA (2007) *The global cold war*. Cambridge University Press, Cambridge
- Westing A (1991) Environmental security and its relation to Ethiopia and Sudan. *Ambio* 20(5):168–171