



Putting Environmental Stress (Back) on the Mass Atrocities Agenda

Key Recommendations

Build a Research Agenda

Public and private research sponsors should establish funding streams and calls for proposals for research, both quantitative and qualitative, on the links between demographic-environmental stress (DES) and mass atrocities. In particular, research is needed on interactive or mediated relationships between DES and mass atrocities as well as on regionally specific studies and case studies on a particular subset of most-likely cases for environmentally linked mass atrocities.

Invest in Early Warning Capacity

Invest in early warning capacity to monitor environmental conditions and political discourse and mobilization. Quasi real-time indicators of social unrest may be combined with forecasting tools to identify the precursors to environmentally linked mass atrocities, which could be very useful for tasking resources to operational prevention activities.

Invest in the Fight for Inclusive Narratives

Governments, intergovernmental organizations, and nongovernmental organizations interested in preventing mass atrocities should provide early career civilian and military leaders with educational opportunities in which to discuss the value of integration and diversity, particularly in countries with DES. Additionally, little is known about why and how inclusive narratives emerge in some places and not others, which is a subject that could benefit from research funding.

Keep Space Open for Civil Society and the Media

Civil society should continue to play a major role in monitoring environmental stress and early indicators of conflict and forcing governments and the international community to respond. Particularly those organizations that have crosscutting memberships that bridge politicized social divides should also continue to mediate between and convene groups to encourage reconciliation.



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Reform Land Tenure and Address Land Pressures

Rules governing resource disputes should be reformed to be as transparent and nonpartisan as possible. Care must also be taken to adopt conflict-sensitive land-management practices in the aftermath of conflict, and large development assistance donors should push to ensure that best practices in the field are adopted.¹ Additionally, making sure the agricultural, food, and water systems of the future are both resilient to climate change and can continue to provide sustainable livelihoods in the context of urbanization is required to decouple political violence from environmental stress.

When and why do environmental stressors play a role in precipitating mass atrocities, and what can the international community do about them? During World War II, concerns about demographic and environmental stress—particularly access to arable land—were associated with some of the 20th century’s worst mass atrocities. Adolf Hitler’s territorial ambitions in Europe were fueled by an obsession with *lebensraum*—literally, living space—and fears Germany would not be able to feed its growing population from within its post-Versailles borders. Japan’s invasion of Manchuria and subsequent campaigns of terror against ethnic Chinese and Russians there were similarly motivated by a desire to access the territory’s vast renewable and mineral resources.

In the post-WWII era, the overwhelming majority of mass atrocities—including but not limited to genocides, politicides, and forced displacement—have occurred in agrarian societies. Moreover, environmental stressors have been implicated in mass atrocities in Rwanda and Darfur. UN Secretary-General Ban Ki-moon was among the voices asserting the Darfur conflict “began as an ecological crisis, arising at least in part from climate change.”²

However, research on the direct links between environmental stressors and mass atrocities is still nascent, leaving policymakers without a coherent conceptual model of where demographic and environmental stresses—either real, in the form of land, water, and food scarcity, or imagined and promulgated by political entrepreneurs seeking to capitalize on fears of scarcity—might catalyze mass killings. Thus, policymakers are at a loss to identify those factors that could be monitored to anticipate the outbreak of these events and act to diminish tensions before they boil over into violence.

This policy analysis brief surveys the state of knowledge in this space, proposing a plausible conceptual model that identifies both structural and actor-contingent factors linking demographic-environmental stress to mass killings, and it recommends both comprehensive testing of the model and various policy interventions that might help the international community be better prepared to stop these tragic events before they start.

To preview, the model suggests demographic-environmental stress is more likely to result in mass atrocities in societies characterized by high groupness—the degree to which individuals in society depend on distinct identity groups for their economic prospects, physical security, and as a platform to pursue political power—and political institutions that do not constrain the executive or guarantee minority groups a say in policy formation. Still, many societies characterized by both do not experience mass atrocities. Within these contexts, the choices powerful political actors make about inclusive national narratives often determine whether societies with high groupness and exclusive political institutions actually experience mass atrocities.

Key Terms

Mass atrocities: Refers to three internationally recognized crimes: genocide, war crimes, and crimes against humanity. Because the definition of crimes against humanity is sufficiently broad, one of the issues hampering research on the subject is that the term means different things to different audiences and has been defined many different ways.³ For example, there are actions that some would deem crimes against humanity—like forced marriage—that nevertheless would not be prosecutable under the Rome Statute of the International Criminal Court.⁴

Genocide: Article 2 of the Convention on the Prevention and Punishment of the Crime of Genocide defines *genocide* as “any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such: killing members of the group; causing serious bodily or mental harm to members of the group; deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part; imposing measures intended to prevent births within the group; [and] forcibly transferring children of the group to another group.” Operationally, the concept has been defined as the promotion, execution, and/or implied consent of sustained policies by governing elites or their agents that result in the deaths of a substantial portion of a national, ethnic, racial, or religious group. Examples include the mass killings of Jews during WWII and Tutsis in Rwanda (1994).

Politicide: The promotion, execution, and/or implied consent of sustained policies by governing elites or their agents that result in the deaths of a substantial number of people due to their political or ideological beliefs. Examples include Red Guard attacks during the Chinese Cultural Revolution of the 1960s and 1970s and Chilean and Argentine “dirty wars” against leftists in the 1970s.

Forced displacement: The coerced movement of people from their home region. When coercion targets a particular ethnic group, this is often referred to as “ethnic cleansing.” Examples include the forced movement of Bosnian Croats, Muslims, and Serbs during the Bosnian War (1992–1995) and the forced displacement of Myanmar’s Rohingya Muslims (2012).

Political violence: A catchall concept including various types of violence committed in pursuit of political goals, such as terrorism, civil conflict, and one-sided violence. Much of the research on the links between environmental factors and conflict addresses these topics, as opposed to mass atrocities per se.

Demographic-environmental stress: A three-pronged source of pressure on political systems comprising (1) rapid population growth, (2) the degradation and overexploitation of renewable resources, such as arable land or water, and (3) unequal access to these resources within society, particularly unequal across social groups.

Groupness: The degree to which individuals in society depend on distinct identity groups—such as ethnic, tribal, religious, or political-ideological groups—for their economic prospects and physical security and as a platform to pursue political power. Examples of high groupness include the centrality of ethnicity to Rwandan politics, religious sectarianism in Iraq, and partisan polarization around regional identities in Ukraine.

Institutional inclusivity: Institutional arrangements such as federalism, policy devolution to regional governments, independent judiciaries with judicial review powers, and requirements of supermajorities that constrain executive power and give minority groups a meaningful say in policy outcomes.

Analysis

What Is Demographic-Environmental Stress?

Demographic-environmental stress (DES) is a three-pronged concept comprising (1) rapid population growth, (2) the degradation and overexploitation of renewable resources, such as arable land or water, and (3) unequal access to these resources within society, particularly unequal across social groups.⁵ This concept is closely related to carrying capacity, or the maximum population size that can be sustained indefinitely by an environment and its associated renewable sources of food, water, and other ecosystem services.

Thus defined, the concept of DES limits the scope of our argument to focusing on renewable resources. There is now a large body of academic and policy literature addressing the links between nonrenewables—such as diamonds, oil, and other minerals—and politically motivated violence.⁶ Such a discussion is beyond the scope of this brief, though we note that the links between nonrenewables and mass atrocities are still underexplored.⁷

Thomas Malthus, the English cleric and scholar, articulated the seemingly intuitive link between carrying capacity and conflict over three centuries ago. Malthus’s basic insight revolved around the seemingly linear growth of the food supply, where the binding constraint was the availability of arable land and the geometric (i.e., exponential) population growth that England was experiencing in the first decades of the Industrial Revolution. In such a situation, Malthus conjectured, population was bound to exceed carrying capacity and would be kept in check by “abstinence, misery and vice”: family planning, poverty, and death from hunger, disease, and violence.⁸

History has shown Malthus to be incorrect on both counts: human population growth has not proven to be exponential, and improvements in agricultural technology have increased yields faster than population growth. Yet his basic logic has not lost its appeal in some circles. The descriptors *Malthusian* and *neo-Malthusian* now apply to those who posit firm, environmentally determined limits on human populations that imply competition for and therefore conflict over increasingly scarce renewable resources, particularly food, arable land, and water. Following the global food-price spike of 2007–08, during which food prices were implicated in political unrest across the developing world, Malthusian concerns have made a major comeback.⁹

It is important to note that these Malthusian concerns arose during a time—2008—when global production per capita of staple cereals like maize, wheat, and rice, and meat were at their highest levels in the past 50 years.¹⁰ Scarcity is a concept that is at least in part socially constructed, meaning that discourse that uses a scarcity frame can be activated or manipulated by actors seeking to benefit from capitalizing on scarcity concerns. During the 2008 food-price crisis, for instance, the seemingly Malthusian nature of the problem was seized on by advocates of population control and family planning.¹¹

Scarcity is almost never just about aggregate availability of a resource but rather about differential access that individuals, households, or social groups may have to it. Individuals and households can experience scarcity even in the presence of flush food markets or large tracts of arable land if they lack the social or economic resources to access them. For example, Niger experienced a food-price spike in the mid-2000s that coincided with a turn away from food rationing and toward food-subsidy programs for addressing hunger. Despite reduced prices, many Nigerians still could not afford to purchase food, resulting in increased child and infant wasting and stunting and faminelike conditions, even though markets were comparatively flush with food, and harvests did not fail.¹²

Table 1: Episodes of Genocide/Politicide, 1956-2014

Country	Year of Onset	Year of Termination	Deaths/Year	% Rural at Onset
Sudan	1956	1972	1,000–2,000	91.4
China	1959	1959	64,000–128,000	83.8
Algeria	1962	1962	32,000–64,000	69.5
Rwanda	1963	1964	8,000–16,000	97.1
Iraq	1963	1975	2,000–4,000	49.3
DRC (Zaire)	1964	1965	4,000–8,000	76.6
Vietnam	1965	1975	32,000–64,000	83.6
Indonesia	1965	1966	256,000+	84.2
Burundi	1965	1973	4,000–8,000	97.7
China	1966	1975	32,000–64,000	81.9
Nigeria	1967	1970	64,000–128,000	82.2
Eq. Guinea	1969	1979	4,000–8,000	73.0
Uganda	1971	1979	16,000–32,000	93.3
Pakistan	1971	1971	256,000+	75.2
Philippines	1972	1976	4,000–8,000	67.0
Pakistan	1973	1977	1,000–2,000	73.7
Chile	1973	1976	4,000–8,000	21.6
Indonesia	1975	1992	32,000–64,000	80.7
Cambodia	1975	1979	256,000+	95.5
Angola	1975	1994	4,000–8,000	82.7
Ethiopia	1976	1979	1,000–2,000	90.5
Argentina	1976	1980	2,000–4,000	19.0
DRC (Zaire)	1977	1979	1,000–2,000	74.2
Myanmar	1978	1978	4,000–8,000	76.0
Guatemala	1978	1990	300–1,000	62.6
Afghanistan	1978	1992	16,000–32,000	84.3
Uganda	1980	1986	16,000–32,000	92.5
El Salvador	1980	1989	8,000–16,000	55.9
Syria	1981	1982	8,000–16,000	53.3
Iran	1981	1992	2,000–4,000	50.3
Sudan	1983	2002	16,000–32,000	77.1
Somalia	1988	1991	16,000–32,000	70.3
Iraq	1988	1991	64,000–128,000	30.3
Burundi	1988	1988	8,000–16,000	93.7
Sri Lanka	1989	1990	16,000–32,000	81.4
Bosnia & Herzegovina	1992	1995	64,000–128,000	60.8
Burundi	1993	1993	32,000–64,000	92.8
Rwanda	1994	1994	256,000+	90.2
Serbia (Kosovo)	1998	1999	1,000–2,000	46.8
Angola	1998	2002	16,000–32,000	67.6
Sudan	2003	2011	64,000–128,000	67.2
Sri Lanka	2008	2009	300–1,000	81.7
CAR	2013	–	1,000–2,000	60.0
Iraq	2014	–	1,000–2,000	30.5
Median % Rural at Onset				76.3

Sources: Center for Systemic Peace, PITF State Failure Problem Set, 1955–2015, 2016, accessed June 15, 2016, <http://www.systemicpeace.org/inscrdata.html>;
UN Population Division, World Population Prospects, 2016, accessed June 15, 2016, <http://www.un.org/popin/data.html>.



Figure 1: Scatterplot of Cumulative Magnitude of Mass Atrocities and Rural Population as % of Total.

As the cumulative magnitude increases, the number and severity of genocides/politicides also rises. The correlation between the two variables is strongly positive ($r = 0.78$, $p < 0.01$). North America, Western Europe, and Oceania are omitted because they experienced no such episodes during the period in question.

Sources: Center for Systemic Peace, PITF State Failure Problem Set, 1955–2015, 2016, accessed June 15, 2016, <http://www.systemicpeace.org/inscrdata.html>; UN Population Division, World Population Prospects, 2016, accessed June 15, 2016, <http://www.un.org/popin/data.html>.

The Evidence—Mixed, but Flawed

Since 1956, the vast majority (86 percent) of mass atrocity episodes have occurred in the predominantly agricultural societies of Africa and Asia.¹³ Table 1 lists the 44 such episodes cataloged by the Center for Systemic Peace. Of these 44 episodes, the median percentage of the country's population living in rural areas is 76.3.

At the regional level, the correlation—the strength of the association between two variables—between the number and magnitude of mass atrocity episodes and the percentage of the subregion's population living in rural areas is strongly positive.¹⁴ However, this simple correlation masks a more complex reality and is driven in large part by the co-occurrence of poverty and weak state institutions, like responsible governments and courts, in poorer societies, which tend to be much more rural than their more economically developed counterparts.

Unpacking the links between environmental stress and mass atrocities is complicated further by the fact that mass atrocities and the civil wars in the context of which they so often occur are themselves often the cause of scarcity. As populations move in search of safety, they are often forced into marginal lands with poor infrastructure, making them dependent on humanitarian assistance and unsustainable foraging strategies for energy, food, and shelter. For example, more than one million refugees of the Rwandan civil war in the Democratic Republic of the Congo deforested roughly 3,800 hectares (38 km²) within three weeks of their arrival in and around Goma in 1994.¹⁵

Also, governments and rebels often resort to active food denial—starvation sieges—and crop destruction as means of breaking the capacity and will of the opposition to fight. Images of famine-stricken Ethiopian children—dual victims of hunger and the country's brutal civil war—catalyzed global action around hunger in the 1980s and seemed to underscore a causal link between acute food scarcity and conflict, even if this dominant narrative had the causal logic reversed: the war was not over food, but food became a powerful weapon once the war was under way.¹⁶ It is important that policymakers not mistake the effects for the causes. Moreover, it is important that the international community recognize starvation sieges and the use of food as weapons to be forms that mass atrocities can take.

The neo-Malthusian hypothesis—that environmental scarcity increases the likelihood or severity of mass atrocities—has been subject to less systematic investigation than one might think given how central resource conflict has been to prominent narratives about mass atrocities in Rwanda and Darfur.¹⁷ This has been due to four main problems. First, data limitations have been significant. Many relevant measures, like water or arable land availability, have not been accessible in sufficient temporal or spatial coverage. Second, the aforementioned challenges of reverse causality bedevil analysis. Third, because many of these variables change slowly over time, they are often of limited value in predicting the rapid onset of rare events. For example, from a DES perspective, Rwanda looked very similar in 1992, 1993, and 1994, yet the genocide only occurred in the last year. Fourth, an emphasis in the scientific literature on political violence rather than mass atrocities per se has meant there

are comparatively few studies that can directly inform mass atrocity prevention. Given that most mass atrocities have occurred in the context of civil wars, however, the literature on the environment-political violence nexus bears directly on this discussion.¹⁸

Catalyzed in part by the humanitarian crises in Rwanda and Somalia in the 1990s, the late 1990s saw the first broadly comparative studies of the environment-conflict nexus with the publication of the State Failure Task Force's¹⁹ second global report and Wenche Hauge's and Tanja Ellingsen's statistical analysis of civil war occurrence.²⁰ The two studies reported somewhat different findings, with the latter being more supportive of a correlation between renewable resource scarcity and civil wars, although it concluded that economic and political factors—like economic development and the strength (if not democratic quality) of political institutions—are more decisive in determining when and where conflict will erupt.

More recent assessments of the impact of environmental factors on armed conflict have resulted in mixed findings. While there is robust evidence that countries that depend more heavily on nonrenewable resources are more conflict-prone, scarcity of renewables has been demonstrated to have little effect.²¹ Other studies point to population pressures as contributing to violence, including genocide, especially when coupled with pre-existing land scarcity,²² while still others suggest that an abundance of renewable resources may spark conflict, as water, productive cropland, or livestock may amount to a prize worth fighting for.²³ Still other studies suggest conflict—including nonviolent forms of conflict like protests and strikes—is more prevalent in times of relative scarcity and abundance.²⁴ This body of evidence points to complex, often contradictory linkages between environmental conditions and intergroup violence.

As a guide for policymakers, this body of evidence has significant limitations. First, the majority of this research addresses civil conflict or civil war rather than mass atrocities per se. While most mass atrocities occur in the contexts of civil wars, the distinct focus of the literature nevertheless reduces its usefulness in understanding the causal import of environmental factors for mass atrocities.

Second, most studies have looked for additive effects rather than interactive or mediated effects. That is, studies generally investigate the effect of land scarcity in addition to other known correlates of political violence, like lower levels of economic development or a greater dependence on primary commodity exports, rather than investigating whether land scarcity might matter more in highly agricultural societies than in more industrialized or postindustrialized ones, or might be more conflict-inducing in societies where ethnic tensions are already heightened.

In a similar vein, many studies have been global in their reach, rather than focusing on a particular subset of most-likely cases for environmental conflict. The relationship between DES and violence may exist for some subset

of cases (i.e., land-constrained, agriculturally dependent societies) but might not emerge in a global analysis because proxies for demographic pressure like population density would lump together different cases. Much has been made of Rwanda's population density—the highest in continental Africa²⁵—and land scarcity as a cause of violence there, but Singapore is over 17 times more densely populated than Rwanda, and the notion that it is overpopulated in the Malthusian sense is patently absurd. This comparison points to mediating factors—such as wealth, centrality of agriculture to livelihoods and income, and access to global markets for food—that might mediate the relationship between environmental factors and violence. The following section elaborates a conceptual model for the role of DES in mass atrocities that addresses some of these shortcomings.

When and Where DES May Lead to Mass Atrocities: A Conceptual Framework

DES is present in some form in most societies. Even in comparatively wealthy countries, rising populations and affluence exert upward pressures on natural resources like land and water, increasing their costs and sparking distributional conflicts. However, these conflicts rarely lead to violence for two principal reasons. First, these conflicts are almost always channeled through legitimate legal and political institutions, like courts and legislatures.²⁶ These institutions, especially courts, are viewed as legitimate and relatively impartial arbiters of conflict, and the use of private violence to settle disputes will be met with criminal charges and punishment. In many parts of the developing world, these formal institutions are either absent or viewed with deep skepticism. In these contexts, it is unsurprising that disputes often involve participants taking matters into their own hands, or that disputes are taken up in informal institutions that may not have legitimacy with all relevant parties.

Second, direct access to natural resources like land and water is not central to most livelihoods in the developed world. In countries of the Organisation for Economic Co-operation and Development, like the United States, Germany, and France, only 1 to 3 percent of the population works in agriculture. Even in comparatively rural countries of that organization, like Portugal, agricultural employment stands at just 6 percent. In contrast, agriculture is the primary source of employment in most developing countries. In Ethiopia, Rwanda, and Uganda, agriculture employs roughly three out of every four people in the workforce; in Nepal, the share is closer to two out of three.²⁷ In these predominantly rural societies, it is unsurprising that direct access to land and water would be significant determinants of livelihood security.

Still, not all agricultural societies in the developing world are equally prone to the type of intergroup violence that may result in mass atrocities. Tanzania is similar to its neighbors in the East African Community in terms of the centrality of agriculture to livelihoods and the share of the population living in rural areas, though it is relatively more

Table 2: Neo-Malthusian Pressures and Political Violence in the East African Community

Country	Average GDP per Capita (2005 USD), 1980-1989	Average Annual Population Growth (%), 1980-1989	Average % Rural, 1980-1989	Average Arable Land per Capita (ha), 1980-1989	Politically Motivated Deaths per 100K Pop., 1989-2015
Tanzania	\$344	3.09	83.4	0.40	0.1
Kenya	\$526	3.70	84.0	0.22	10.1
Uganda	\$191	3.22	91.0	0.32	42.4
Burundi	\$209	3.05	94.8	0.20	150.8
Rwanda	\$266	3.76	95.0	0.13	4,188.7

Sources: World Bank, World Development Indicators, 2016, accessed June 20, 2016, <http://data.worldbank.org/data-catalog/world-development-indicators>; Uppsala University, Uppsala Conflict Database, 2016, accessed June 20, 2016, <http://ucdp.uu.se>.

arable-land abundant. It is truly an outlier, however, in its relative paucity of politically motivated violence. Table 2 shows how East African Community countries²⁸ compare in terms of gross domestic product per capita, population growth, percentage of total population in rural areas, and average arable land per capita from 1980–1989, as well as the prevalence of politically motivated violence since 1989.²⁹

All five countries were poor, overwhelmingly rural, and experiencing comparatively rapid population growth in the 1980s, and with the exception of Rwanda, all were above the global median in arable land per capita. The different magnitudes of politically motivated violence—including deaths from armed conflict, one-sided violence, and communal conflict—are truly staggering. Tanzania has been orders of magnitude less violent than any of its neighbors. Though neither Tanzania nor Kenya has experienced genocides or politicides in the postwar era, Kenya has experienced recurrent episodes of sectarian violence, including postelection ethnic rioting, primarily between Kalenjins and Kikuyus, that left more than 1,000 dead and 500,000 displaced in 2007 and 2008.³⁰ Tanzania stands alone in having avoided large-scale political violence targeting individuals due to their ethnic or religious identities.

Thus, we must look beyond indicators of poverty and land stress to identify factors that make similarly rural, land-stressed societies more or less prone to the kinds of identity-based violence that may escalate to or precipitate mass atrocities. These factors fall into two broad categories: (1) structural factors, such as the composition of social cleavages in society and the nature of its political institutions, and (2) actor-contingent factors, which revolve around the specific choices political elites make during times of crisis that either diminish or escalate political tensions that might boil over into mass atrocities.

1. Structural Factors

Two structural factors are likely to matter for whether DES will manifest as the kind of conflict that can lead to mass atrocities: groupness and the inclusiveness of political institutions.³¹ Groupness, sometimes referred to as social polarization, is the degree to which individuals in society

depend on distinct identity groups—such as ethnic, tribal, religious, or political-ideological groups—for their economic prospects and physical security and as a platform to pursue political power.³² In societies characterized by high groupness, these identities are vehicles to economic opportunity and political participation as well as the criterion for receiving political benefits from those in charge. In many developing countries, identity groupings form the basis for political office seeking, and these identities can actually become more salient as important events, like elections, draw near.³³ Moreover, once conflict breaks out, it is common for populations to self-segregate in search of safety. For instance, Shia-Sunni violence in Baghdad during the Iraq civil war caused a near-complete resegregation of that city along religious lines.³⁴ While the cause-effect relationship between social polarization and conflict is fraught—polarization can cause conflict, but conflict also causes polarization—the co-occurrence of the two is notable.

Ethnically homogeneous countries, like the Republic of Korea, and extremely ethnically diverse countries, like Tanzania, are characterized by low groupness—ascriptive identities are not highly salient for political mobilization. In contrast, in countries like Iraq (Sunni Arabs, Shia Arabs, and Kurds), Rwanda and Burundi (Tutsis and Hutus in both), and Myanmar (Bamar, Shan, Kayin, Rakhine, Mon, Kachin, Royhinga, and others), political cleavages and patronage networks break down along identity-based lines.

Groupness matters for the onset of mass atrocities in three main ways. First, identity-based difference is definitional to the concept of genocide: without difference, there can be no deliberate targeting based on that difference.³⁵ While genocide is only one type of mass atrocity, it is one that generates significant media coverage and popular interest.

Second, identities embed individuals in communities and networks of action; they make it easier to identify one's "team" and facilitate cooperation and coordination. While this can be virtuous, it also has a decided dark side.

Third, identity-based cleavages make it easier for political entrepreneurs—those seeking to further their own interests by promoting conflict—to identify their "natural" base

of supporters and “other” nonmembers of the group.³⁶ This is especially the case when these groups are largely segregated geographically, such as the Acholi in northern Uganda and African Darfuris in Sudan. Othering is the process of rhetorically heightening the differences between an in group and an out group, dehumanizing the members of the out group to the point that standard norms of behavior do not apply to interactions with them.³⁷ Othering has been central to the justification for and conduct of mass atrocities throughout history, with prominent examples including Nazi promotion of Aryan features and values and demonization of Jews, Roma, Poles, and homosexuals, and Hutu agitators referring to Tutsis as “cockroaches.”³⁸ In both instances, the process of othering dehumanized the ultimate targets of violence, resulting in a loosening of normal moral prohibitions against the use of violence toward unarmed actors, many of whom were elderly and children. In this sense, groupness facilitates othering and mobilization, making it easier for elites who already have an interest in sparking violence to get others to help them carry it out and loosening structures on carrying out violence once mobilized.

Institutional inclusiveness matters for whether groupness translates into the exclusionary, winner-take-all politics that legitimates this kind of othering and implies unsparing competition for resources, with a winner-take-all logic that legitimates the use of violence. Societies can be characterized by high groupness yet still have inclusive political processes that give many stakeholders an ability to affect policy and secure access to both state and private resources. For example, the former Yugoslavia had always been multiethnic and regionally divided, but consociational rules facilitated alternation in power, protection of local rights and rules, and peace for more than 50 years.³⁹

Highly inclusive polities are those characterized by institutional arrangements, such as federalism, policy devolution to regional governments, independent judiciaries with judicial review powers, and requirements of supermajorities that both constrain executive power and give minority groups a meaningful say in policy outcomes.⁴⁰ Ethnic diversity need not lead to divisive politics; rather, political institutions can facilitate the inclusion of diverse perspectives and needs. In contrast, some societies are governed by more-narrow cliques of elites whose rule is comparatively unconstrained and is not based on the consent of or consultation with out groups.

Institutional inclusiveness matters for two reasons. First, inclusive institutions place more constraints on rulers in how they respond to dissent and internal conflict. Governments that are more constrained by institutional checks on executive authority are less likely to engage in practices that single out particular identity groups for persecution and execution.⁴¹ Second, it provides more opportunities for peaceful conflict resolution. Intergroup violence is usually the costliest way of resolving resource-related disputes and often further degrades the resource while expending “blood

and treasure” in the process.⁴² Inclusive institutions facilitate a give-and-take approach to politics in which concessions today may produce benefits tomorrow.

Though political institutions are often quite durable, the institutional inclusivity of a country can change. Prior to 2010, Kenya’s constitution was a holdover from colonial times that facilitated the centralization of power in the executive and the subordination of local governments to executive control. The centralization of power in the presidency created a situation in which electoral politics became a zero-sum, winner-take-all contest that stoked ethnic tensions and was often a catalyst for violence in both the pre-and post-election period.⁴³ These politics existed under the presidency of Daniel Arap Moi, a member of the Kalenjin minority ethnic group, and Mwai Kibaki, a member of the larger Kikuyu group.

It was not until after the election-related violence of 2007, much of which occurred in Kalenjin-dominated territory that had experienced significant in-migration from Kibaki-supporting Kikuyus, that real impetus for change arrived. In 2010, Kenyan voters approved a new constitution. Though it retained a presidential system of government, it provided many new mechanisms for legislative oversight of the executive, devolved significant powers and budgetary control to the subnational level, and created a land commission to resolve tensions related to land tenure and theft. In doing so, Kenya’s constitution created multiple mechanisms for minority ethnic groups to safeguard and promote their interests through institutional channels.

Table 3 provides examples of polities characterized by high and low groupness and high and low institutional inclusivity. Unsurprisingly, Rwanda and Sudan are characterized by high groupness and low institutional inclusivity: in both cases, the top administration is staffed from a single ethnic group (Tutsis in Rwanda; during the genocide, Hutus dominated the executive) or closely linked tribes (the Shaigiya, Ja’aliyyin, and Danagla in Sudan).

The Rwandan and Sudanese cases highlight two distinct pathways to the kinds of civil conflict that heighten the risk of mass atrocity: (1) state collapse and resultant security dilemmas and (2) state exploitation. In the former, the central state is sufficiently weakened by intergroup conflict that it no longer can act as a guarantor of physical security, causing groups to view other groups as potential threats and therefore incentivizing striking first in order to avoid being attacked themselves. In the case of Rwanda, the state weakness created by the threat of the Rwandan Patriotic Front, then a Tutsi-led rebel army based in Uganda, and the assassination of Hutu President Juvenal Habyarimana fueled Hutu concerns of a Tutsi political takeover and marginalization of Hutus. In this environment, calls to rid the country of the Tutsi threat fell on receptive ears.

In the latter pathway to mass atrocity, state exploitation, it is not the absence of the state but rather its intervention in intergroup conflict that causes mass killings. Typically,

these sons-of-the-soil conflicts occur when the government privileges one group over another in resource conflicts, typically involving land.⁴⁴ Often, these conflicts occur when the government encourages migration of favored groups—whose homelands are experiencing DES—into lands inhabited by marginalized or excluded peripheral ethnic groups. Examples of sons-of-the-soil conflicts that escalated into mass atrocities include the Darfur crisis, Indonesia’s invasion of East Timor in 1975, and Pakistan’s offensive in Baluchistan in 1973.⁴⁵ In each case, government forces have “come to the rescue” of more-recent migrants from the dominant identity group (Arab Darfuris in Sudan, Javanese in East Timor, Punjabis in Baluchistan) and unleashed indiscriminate violence against local populations.

Table 3: Groupness and Institutional Inclusivity

	High Institutional Inclusivity	Low Institutional Inclusivity
High Groupness	Kenya (2010–), India	Kenya (pre-2007), Rwanda, Sudan
Low Groupness	Botswana, Rep. of Korea	North Korea, Eritrea

Groupness and institutional inclusivity clearly matter for whether DES will lead to mass atrocities. However, these structural—for example, slowly changing—factors do not tell the whole story. Institutions make certain courses of action more or less likely, but individual leaders and the strategies they adopt matter greatly for whether ethnic and religious tensions—be they caused by DES or other factors—actually result in genocidal acts. The next sections explore these actor-contingent factors in detail.

2. Strategic Incentives

As Benjamin Valentino notes, “The impetus for mass killing usually originates from a relatively small group of powerful political or military leaders, not from the desires of broader society.”⁴⁶ While knowing the structure of society and the nature of its political institutions may be useful in understanding which types of countries are more prone to mass atrocities, they tell us little about their specific timing, or why some countries with seemingly high groupness and exclusive institutions, like Côte d’Ivoire, have been able to retreat from the brink of genocidal violence, even during periods of internal conflict and in a climate of ethnic violence and suspicion.⁴⁷ These realities require us to focus on political leaders—who they are and what they seek to achieve—and what Scott Straus calls “founding narratives,” or the narratives political elites develop and promulgate about the national political community, the goals of the state, and who should rule (see section 3, “Ideational Factors”).⁴⁸

Political leaders are more likely to turn to mass atrocities as tools in two scenarios. First, leaders whose political ambitions require the complete material or political

disenfranchisement of large groups of people are likely to view mass killings as a potentially viable option for overcoming political opposition and fear of retribution. Valentino calls this “dispossessive mass killing.”⁴⁹ Second, leaders engaged in prolonged counterinsurgencies may target the civilian population from which antigovernment dissidents are drawn in order to “drain the sea” of material and logistical support on which the dissidents rely.⁵⁰ This latter strategy is often pursued by leaders whose security forces lack the intelligence capacity to effectively identify dissidents and separate them from the general population; if terrorism is a “weapon of the weak,” mass killings—at least in the late 20th and early 21st centuries—are a weapon of weak states.⁵¹

Both these motivations can be seen at play in recent examples of environmentally linked mass atrocities. The Rwandan genocide can be interpreted in part as a dispossessive mass killing. Land redistribution—primarily from wealthy Tutsis to more land-poor Hutus, who had increasingly been rendered landless by the decline of customary land rights and the increasing commodification of land—was central to the motivations of Hutu extremists, and genocide would preclude the original tenants from being in a position to resist or attempt to reclaim their lands. Whether Rwanda as a whole was actually entering a Malthusian trap—a period of stagnating incomes and decreasing viability of rural livelihoods—numerous accounts of the violence there point to its powerful role in reshuffling land tenure and facilitating the settling of scores, even in ethnically homogeneous Hutu regions.⁵² This point is bolstered by the facts that land renters—those who worked the land but did not own it—were more likely to become perpetrators in the genocide, and death tolls were significantly higher in localities with high population density and few opportunities for young men to acquire land.⁵³ Participants in the genocide were often promised rights to the fields of slain Tutsis by the Hutu elites that had mobilized them.⁵⁴

The Darfur genocide contains elements of both motivations. In the first place, population growth contributed to increasing conflicts between Arab and African Darfuris over land use and water rights, with primarily Arab herders and African farmers competing over a dwindling stock of arable land and in a land-management system that structurally privileged Darfuri Arabs over non-Arabs.⁵⁵ In the late 1980s, this resulted in a first spate of intercommunal conflict that drew in the Sudanese military, whose heavy-handed approach to countering local violence generated significant grievances.

In the 2000s, these non-Arab grievances manifested in support for two ethnic militias turned rebel groups: the Sudan Liberation Front/Army and the Justice and Equality Movement. Especially in the early phase of the conflict (2003–2005), the violence was concentrated in areas of Darfur that had experienced increases in vegetation and water availability in the previous two decades and resultant in-migration by those displaced by desertification elsewhere.⁵⁶ The Khartoum government responded with

massive and lethal force against non-Arab Darfuris, though it did so largely indirectly. Sons-of-the-soil conflicts often involve competition for resources—especially land—in areas where government forces are considered foreign and do not have strong ties in the community. As in any policing situation, this sows the seeds of mistrust and makes the hard investigative work of counterinsurgency that much more difficult. Thus, it is increasingly likely that leaders will view “draining the sea” as the only viable strategy. To implement this strategy, leaders in Khartoum provided support for Darfuri Arab militias, known as Janjaweed, which engaged in horrific attacks against non-Arab Darfuri civilians. The effect was to depopulate many non-Arab villages, many of which were soon repopulated by Arab squatters.⁵⁷

3. Ideational Factors

The preceding discussion highlights structural factors and strategic incentives that increase the risk of mass atrocities arising out of DES. However, many of these same factors were present in places like Côte d’Ivoire during its civil war (2002–2007), where rampant othering, violence, and agitation occurred, yet conflict did not rise to the level of mass atrocity.

The Ivorian crisis had roots in the country’s decades-long policies of promoting internal and in-migration from neighboring countries under founding president Félix Houphouët-Boigny, which led some Ivorians to feel marginalized and begin promulgating the political ideology of Ivoirité (Ivorianess) among Côte d’Ivoire’s southern Krou and Akan ethnic groups. This ideology was intolerant of foreigners, including Ivorians from the northern, more predominantly Muslim regions of the country and other countries in West Africa. In 2002, the country descended into civil war after Alassane Ouattara, a northerner, was barred from competing in the 2000 presidential election. The five-year civil war resulted in well over 1,000 battle deaths between the Ivorian military and the Forces Nouvelles rebels, but the country avoided descent into mass atrocities against civilians.⁵⁸

Scott Straus identifies several factors—two ideational, three more practical—that may discourage political elites from engaging in or encouraging mass killings and that were operative in the Côte d’Ivoire case.

First, Straus points to the importance of inclusive founding narratives, or stories political elites promulgate and internalize about who constitutes the nation and who should rule. All nations are constructed social identities, and the degree of inclusiveness in that identity is not just determined by the ethnic makeup of a given territory but by the strategies of rule particular leaders foster. Tanzania’s Julius Nyerere and Côte d’Ivoire’s Houphouët-Boigny were two African statesmen who deliberately chose to cultivate inclusive, if not democratic, politics and institutions.⁵⁹ In each case, they sought to achieve ethnic balance in government appointments in the cabinets, the bureaucracy, and the

military. While Nyerere achieved this by downplaying ethnic identity almost entirely, Houphouët-Boigny managed a delicate ethnic balancing that acknowledged differences but sought to cultivate ethnic inclusion. The reasons this process has been inclusive in places like Côte d’Ivoire and Tanzania while being exclusive in places like Rwanda and Sudan are deeply historical and thus hard to parse. Importantly, however, critical junctures in national history—be they wars, famines, new constitutions, or independence—provide opportunities to revisit these narratives, for better or ill.

The second ideational factor Straus highlights is the positive role social institutions that may bridge social divides—such as churches, mosques, and other religious organizations, as well as trade unions—have in creating multiple sources of identity, providing mechanisms for conflict and dispute resolution, and in general reducing the groupness of society. In other contexts, however, religious institutions and identities become the basis for group identity and othering.

Three practical factors can also serve as a brake on the use of mass killing for political gain. First, to the extent that leaders are dependent on economies that require predictability, stability, and labor for revenue and resources, they may be less likely to engage in mass atrocities for fear of causing capital flight and imperiling the government’s fiscal position. However, not all capital is equally mobile. Governments like Sudan’s, which derives most of its revenue from sectors that are much more tolerant of political instability, such as oil and gas, are not similarly constrained.⁶⁰

Second, the response of the international community can be decisive. Sanctions, travel bans, frozen assets, and the threat of indictment by the International Criminal Court are but a few of the mechanisms by which the international community can discipline bad behavior. However, these sanctions can be manipulated and used as a scapegoat for exclusionary domestic policies. The Hussein regime’s withholding of medicine and food shipments to Kurdish and Shia regions of Iraq and the Sudanese government’s quasi siege tactics against militants in the Nuba Mountains have been rationalized, at least to their domestic audiences, as the result of externally imposed sanctions. In both cases, sanctions fed a scarcity-driven narrative political elites found useful.

Third, intervention and peacekeeping forces represent two more costly but often necessary forms of response. In Côte d’Ivoire, the United Nations and the African Union actively lobbied President Laurent Gbagbo to leave power, and ultimately France and later a UN-backed mission intervened in the conflict to oust him and subsequently act as peacekeepers.

4. Summarizing the Model

To summarize the conceptual model, DES is most likely to contribute to mass atrocities in primarily agricultural societies characterized by high groupness and exclusionary political institutions. Within those societies, mass atrocities

are more likely to occur when politicians and political elites frame their objectives in terms of dispossessing a particular “other” group of their resources or political rights or when governments face popular unrest in areas of low government legitimacy and penetration. There, governments frequently fall back on draining-the-sea strategies that almost always consist of widespread violence against civilians. Whether these strategies are pursued depends on the dominant national narratives internalized by elites, the presence of crosscutting social institutions, the structure of the economy, and actions by the international community. This model has yet to be tested but is plausible and consistent with the literature on environmental factors in conflict and mass atrocities.

The challenges posed by DES are large and complex and will only continue to deepen as climate change and increasing levels of affluence in the developing world combine to further stress food systems, rural livelihoods, and the environments on which they depend.⁶¹ However, the scholarly, advocacy, and practitioner communities can take concrete steps to improve our understanding of when and where DES contributes to mass atrocities and what the international community can do to reduce violence and social conflict around renewable resources.

Policy Recommendations

We highlight the following recommendations for improving the state of knowledge around the links between environmental factors and mass atrocities and strengthening the international community’s ability to anticipate and thus help prevent their outbreak.

1. Build a Research Agenda

To date, much more scholarly attention has been invested in studying the links between environmental factors and state-centric security outcomes, like civil war and terrorism, than human security outcomes, like mass atrocities. Public and private research sponsors should address this gap in our knowledge by establishing funding streams and calls for proposals for research, both quantitative and qualitative, on the links between DES and mass atrocities. Additionally, social scientists should aim to secure funding from programs, like the National Science Foundation’s Dynamics of Coupled Natural and Human Systems program, which explicitly acknowledge the interrelationships between ecological and social phenomena.

In terms of research foci, we recommend two:

- Hypothesizing and testing for interactive or mediated relationships between DES and mass atrocities, particularly as mediated by structural factors like groupness or institutional inclusivity, among others. An obvious place to start would be with the model elaborated here. The startup costs of this type of research are relatively modest, given existing data

sources on outcomes and some mediating variables.⁶² However, more resources need to be channeled into data on land and water use and land and water use change over time, particularly in the developing regions of Africa and Asia. For example, it would be useful to model land tenancy, at either the household or group level, to understand whether maldistribution of land resources is systematically linked to a greater likelihood of mass atrocity. A better understanding of the microdynamics of environmental conflict would be useful.

- Bolstering global analysis, the mainstay of much conflict research, with regionally specific studies and case studies on a particular subset of most-likely cases for environmentally linked mass atrocities. In most instances, quantitative data is useful for establishing correlation but not causation. In-depth case studies and single-country research designs can be useful for tracing causal pathways.

2. Invest in Early Warning Capacity

This conceptual model should be a useful tool for identifying countries at risk of environmentally related mass atrocities, that is, those that combine DES with high groupness and low institutional inclusivity and discriminatory government policies. However, these structural factors are of less use in explaining precisely when lower-level hostilities might boil over into widespread violence. For this reason, we suggest investing in early warning capacity to monitor environmental conditions and political discourse and mobilization, such as political speeches, radio programming, and quasi real-time data on events like protests and rioting. The Famine Early Warning Systems Network (FEWSNET) is a model for tracking weather-related fluctuations in environmental stress, such as that brought on by drought, and monitors local market prices to identify resource-related crises and the need for humanitarian response.⁶³ However, no similar system exists for monitoring dangerous or inciting/agitating speech like that which preceded the Rwandan genocide, in part because of technical problems in developing one, particularly developing accurate sentiment-analysis tools for non-English languages. However, efforts are being made in this domain.⁶⁴ Quasi real-time indicators of social unrest, such as protest data collected by the Armed Conflict Location & Event Data Project and the Integrated Crisis Early Warning System, may be combined with FEWSNET-like forecasting tools to identify the precursors to environmentally linked mass atrocities.⁶⁵ This information could be useful for tasking resources to operational prevention activities.

3. Invest in the Fight for Inclusive Narratives

This brief identifies inclusive founding narratives as an important factor in determining whether DES will lead to mass atrocities. Fundamentally, inclusive narratives are a concept in constant formation, as successive generations of political elites define and redefine what it means to be Kenyan, Guatemalan,

Thai, etc. Governments, intergovernmental organizations, and nongovernmental organizations interested in mass atrocities prevention should provide early career civilian and military leaders in at-risk countries with educational opportunities in which to discuss the value of integration and diversity. The National Defense University's Africa Center for Strategic Studies hosts an annual three-week program for mid-career African security sector professionals that includes programming on a variety of subjects, including emerging challenges. This forum, and others like it, are invaluable opportunities to engage directly with the next generation of leaders. Some developing country governments are undertaking these initiatives as well. The Africa Centre for Transformative and Inclusive Leadership, housed at Kenyatta University in Kenya, is one such research center promoting inclusive governance by seeking to influence the next generation of East African leaders.⁶⁶ However, we know little about why and how inclusive narratives emerge in some places and not others. This, too, is a subject that could benefit from research funding.

4. Keep Space Open for Civil Society and the Media

The nongovernmental sector, including media and civil society, is an important safeguard against mass atrocities in the more general sense.⁶⁷ However, they have roles to play that are specific to issues related to environmental stress. Though conflict itself is a major cause of environmental stress and hunger, the globalization of civil society means that local outbreaks of hunger are generally noticed and reported on before they rise to the level of famine, mass starvation, and death.⁶⁸ A vibrant civil society is key for monitoring the outbreak of hunger and violence and forcing governments and the international community to respond. Moreover, civil society actors like the International Committee of the Red Cross/Crescent, Mercy Corps, and Doctors without Borders are active in providing direct nutritional and health support to populations experiencing acute crisis. Their actions, and those of the international humanitarian community more broadly, have helped to nearly eradicate mass starvation even in times of war. Thus civil society should continue to play a major role in monitoring environmental stress and early indicators of conflict.

Moreover, in examples ranging from the Central African Republic to Côte d'Ivoire, civil society has played a crucial role in mediating between groups and encouraging reconciliation. In many instances, especially where the government has been a party to conflict or perpetrator of violence against civilians, it is not likely to be viewed as a credible arbiter or agent of peace. In these circumstances, civil society—particularly those organizations that have crosscutting memberships that bridge politicized social divides—and more staff-based nongovernmental organizations can fill the necessary role of mediating or even just convening meetings between parties to conflict.

5. Reform Land Tenure and Address Land Pressures

In two of the most dramatic examples of land pressures being linked to mass atrocities, Rwanda and Darfur, it was not just unequal distribution of land and water rights that fueled grievances but also the sense that rules governing these rights had been rigged in favor of a privileged group. Addressing these structural problems should proceed along three lines. First, even if actual land redistribution is politically untenable, rules governing resource disputes should be reformed to be as transparent and nonpartisan as possible. These disputes are at a greater risk of becoming political and expanding in scope if formal institutions are seen as favoring one group against another, as was the case in Darfur. There, the replacement of customary law by seemingly biased formal rules catalyzed further conflict.⁶⁹

Second, care must be taken to adopt conflict-sensitive land-management practices in the aftermath of conflict. Conflict often destroys public records, leads to land abandonment and reoccupation, and ushers in a host of related administrative and dispute-resolution challenges. These problems can be particularly acute in areas governed by customary land-tenure arrangements, where no formal records exist. While many of these challenges are understood and best practices have been promulgated, the international community—in particular, large development-assistance donors—should push to ensure they are adopted.⁷⁰ Fundamental changes in the processes that govern land tenure and dispute resolution are necessary to ensure that any postconflict redevelopment is not short-lived and erased by a return to environmentally linked violence.

Third, it must be recognized that the populations of Africa and Asia are booming and rapidly urbanizing. Africa and Asia are still predominantly rural, though that situation is forecast to change by 2050. However, that urban shift will coincide with a large increase in total population, meaning that rural, agricultural, and agriculturally linked livelihoods will continue to be vitally important, and the market for arable land is likely to tighten further as global investors increasingly invest in food and biofuels in developing countries.⁷¹ Moreover, climate change will likely radically alter disease environments and make many areas more susceptible to natural disasters. Making sure the agricultural, food, and water systems of the future are both resilient to climate change and can continue to provide sustainable livelihoods is a challenge that must be met over the long term in order to decouple political violence from environmental stress. Otherwise, we may simply witness a shift in the locus of environmentally linked conflict from the countryside to the urban context.

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