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Interrogating the Links between Climate Change, Food Crises and Social Stability

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Abstract: There is a vivid scientific debate on how climate change affects stability, resilience, and conflict dynamics of human societies. Environmental security and collapse theory are theoretical approaches that claim severe negative impacts of climatic disasters on political stability, allegedly through the vector of food insecurity. Yet there is a disconnect between this work and the rich body of knowledge on food insecurity and society. The literature is fairly unanimous that (a) drought does not necessarily lead to famines, since (b) famines have a political context that is often more important than other factors; in addition, (c) famines and the distribution of suffering reflect social hierarchies within afflicted societies, and (d) even large-scale famines do not necessarily cause collapse of a polity's functioning, as (e) food systems are highly interconnected and complex. As an illustrative case, the paper offers a longitudinal study of Malawi. By combining environmental history and analysis of Malawi's idiosyncratic (post-)colonial politics, it discusses the possible connections between droughts, food insecurity, and political crises in the African country. The single-case study represents a puzzle for adherents of the "collapse" theory but highlights the complex political ecology of food crises in vulnerable societies. This has implications for a formulation of climate justice claims beyond catastrophism.

Keywords: social consequences of climate change; societal collapse; famine policies; Malawi; food crisis; environmental security

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1. Introduction

Scientific evidence is clear that anthropogenic climate change, if continuing at the current pace, will have catastrophic impacts on the whole biosphere, as species will become extinct, ecosystems will collapse, and places will become uninhabitable [1]. Among the severe risks connected to climate change are increasing water scarcity, biodiversity loss, health impacts, and displacement of people from places which have become inhabitable as a result of climate extremes. Through advances in fields such as remote sensing, climate modeling (including climate change detection and attribution), and multi-method and interdisciplinary efforts [2–6], scientists are able to project these effects with high confidence and across regions.

What is less certain is how climate change affects stability, resilience, and conflict dynamics of human societies. It is evident that climatic events have negative impacts on food production and, consequently, food availability [7–9]. In contrast, there is stark controversy regarding the way human societies could fall victim to violent conflict in the face of climatic disasters such as megadroughts, extreme floods, wildfire, heatwaves, and storms [10–14]. Closely related is the question of how climate change has impacted the stability of societies in the past [15–17], permitting projections on the future. This contribution address two persistent approaches to the question of climate change and social stability, namely, what will be called the "collapse" and the "securitization" approach. These approaches operate on the often-implicit assumption that climate change's impact on food production will inevitably translate into large-scale, societal crises. The article will discuss why this

link between negative impacts of climate on food production and, consequently, social destabilization is not as straightforward as assumed, and how reductionist assumptions can lead to flawed conclusions.

Collapse and securitization approaches to the question of climate change and social stability are frequent responses to the global climate crisis, not only in academic circles, but much more so in public debates, with arguments brought forth by NGOs, think tanks, political decision-makers, and even social movements. "Collapse" here refers to the expectation of a highly likely, or even inevitable, breakdown of societal institutions as the consequence of climate change [18–21].

Securitization here denotes the framing of climate change (and more broadly, environmental change) priorly as a matter of national security. It is borrowed from international relations, more precisely the Copenhagen School [22], referring to the process of "securitizing" political issues by state actors, i.e., rendering a topic as a security issue and hence taking it out of the arena of political debate.

In the following, I will first trace the debates on environmental security, securitization, and collapse in connection to climate change, before I come to the question of linkages between climate change, food production, and social stability. The paper continues to review questions of food production and social collapse, and finally turns to an illustrative single-case study of the African state Malawi before concluding with a discussion section.

2. Theoretical Development

2.1. The Environmental Security Debate

The concept of environmental security was critically developed by Barnett [23], linking to work by Homer-Dixon [24] and Baechler [25] in the late 1990s. Environmental security as a general concept has drawn a lot of criticism early on, often from the fields of critical geography and political ecology [26]. The emphasis on environmental change as a security problem appears as an expression of a zeitgeist [27], after the end of the Cold War and in the light of the 1992 UN Conference on Environment and Development in Rio de Janeiro. The assessment of environmental change and population pressure as causes of social unrest and violent upheavals, although highly publicized [28], appears to disregard other equally or more valid explanations for outbreak of armed conflict, such as geopolitical motives [29], ethnonationalism [30], or the resource curse [31].

The debate on environmental security centered on the alleged preoccupation with overpopulation and carrying capacity as root causes of violent conflict, for instance, in the case of the Rwandan genocide of 1994. Due to this emphasis, the environmental security literature was labelled "neo-Malthusian" by its critics [32,33], after Robert Malthus, the Scottish philosopher who, in the late 18th century, formulated the theory of overpopulation as a root cause for food scarcity.

In the 2000s, under the impression of the International Panel of Climate Change Scientists' (IPCC) fourth assessment report in 2007 [34], climate change was singled out as the greatest concern for environmental security. The climate change–conflict nexus was popularized by publications of think tanks and US militaries that sought to create awareness of the national security dimension of climate change [35–38].

Among the first critical appraisals of this literature was a contribution by Barnett and Adger [39], who stress the difficulty of providing empirically and theoretically sound causal relations between environmental change, livelihoods, human security, and violence, highlighting the need for research that pays tribute to the complexity of the research problem. The interlinkages of environmental change and security questions have since been investigated in a theoretically refined manner [40,41], taking into account the many methodological challenges within this body of research, in particular with regard to case selection and data sampling [42]. A number of cases which seem to provide evidence for the impact of climate—most notably, drought—on armed conflict have been discussed: the Darfur conflict in Sudan [43–45] and armed conflict in other parts of the Sahel [46], the onset of the Syrian civil war [47–49], and the conflict complex around Lake Chad [50,51].

All of these case study regions are controversial among scholars, and there are diverging assessments of the impact of climate on conflict emergence and trajectories.

Despite many remaining uncertainties, there is now a widespread consensus in the scientific community that the linkages between climate change and social conflict are highly complex, context-specific, and demand more research to come to conclusive outcomes. Potential ways forward may lie in application of machine learning to process large data [52], GIS-base risk analysis, or qualitative comparative analysis [53].

2.2. Collapse

Collapse theorists make up a more extreme version of environmental security scholars, as they assume that climate change will not only lead to heightened, potentially violent, conflicts within societies, but that these conflicts over scarce resources can bring down social order. As will be shown, the historical evidence for such societal disintegration is less straightforward than is generally assumed.

The "collapse school" suggests that disastrous climate change will cause certain food crises, translating into the downfall of civilizations. This idea mainly derives from the ideas of geographer Jared Diamond and his influential 2005 work *Collapse: How societies choose to fail or succeed* [54]. Diamond argues that a combination of environmental stressors, political and geographical conditions, and cultural determinants (i.e., unwillingness to adapt to environmental change) has in the past ruined civilizations to the point of dissolution. Diamond provides a number of historical examples ranging from the Easter Island civilization to the Classic Maya and the Greenland Norse up to the Soviet Union. The book—although a best-seller and much-discussed in the media—has been widely criticized on various grounds, such as inaccuracies, cherry-picking in case study selection, theoretical inconsistencies, or misguided concepts of transformative cultural change as "collapse" [55–57].

The arguments brought forth by Diamond are echoed, and taken to an extreme, by contemporary "collapsologists" [58,59] calling for "deep adaption" [60] as a way of preparing for the downfall of modern civilization.

Generally, both environmental security and collapse theorists base their assumptions on equaling resource scarcity with societal strife, principally a (neo-)Malthusian concept. Nils Petter Gleditsch [61] opinionates that the general arguments on climate change and conflict (up to social collapse) follow the same strands of the debate which (neo-)Malthusians and "environmental optimists" have led for more than two hundred years; while one side expects resources to eventually run out in the course of growing demand (be it due to overconsumption or population growth), environmental optimists point towards human ingenuity and capacity for problem-solving, towards gains in productivity, and to the fact that Malthusian breakdowns have been generally absent in the modern world.

Between the two camps, there is a third one which focuses not on scarcity of resources, as neo-Malthusians, or on technological progress and gains in productivity, as the optimist camp, but on the distribution of vital resources, hence labeled as "distributionists" by Homer-Dixon [24]. Indeed, the distribution of (food) resources and rights to their use—inherently questions of political economy—are of great importance to the understanding of food crises, be they connected to climate extremes or not.

2.3. Food, Famine, and Politics

The line of argument of both the environmental security school and collapse theorist, at least with regard to agriculture-dependent developing countries, follows this chain of causation, loosely adapted from the critical discussion by Peluso and Watts [26] (p. 17):

$$\text{climate change} \rightarrow \text{food crisis} \rightarrow \text{heightened competition} \rightarrow \text{breakdown of social order} \quad (1)$$

where "climate change" is one instance of adverse environmental change, and food crisis stands for the social effects of environmental scarcity.

There is a severe disconnect between the body of knowledge produced by scholars of famine and food insecurity, and the environmental security school, as well as climate collapse theorists. The latter tend to ignore the rich historical evidence on the character, societal context, political economy, and anthropology of large-scale devastating food crises. As will be elaborated in the following, contemporary famine scholars are fairly unanimous that (a) drought and other severe climatic disasters are not necessarily the main factors leading to famines, even if it appears that way, since (b) famines have a political context that is often more important than other factors; in addition, (c) famines and the distribution of suffering reflect social hierarchies within the afflicted societies, and (d) even large-scale famines do not necessarily lead to a complete collapse of a polity's functioning, as (e) food systems are highly interconnected and complex. These five statements will now be discussed in turn.

Agricultural drought—the insufficient availability of water, or, more precisely, soil moisture, for crop cultivation—is among the most frequent causes of yield failure and may lead to food insecurity crises, and in the most extreme, famine. Drought years are recurrent in water-stressed regions and countries. There are manifold coping strategies to drought on the household level pursued by rural people and subsistence-farming households, including, but not confined to, using up supplies on stock, taking up debt, leaving out meals, making use of "famine food", searching for off-farm work, selling land, farm animals and valuable items, and temporal migration (i.e., to distant relatives) [62–66]. In a number of regional contexts, there is also the phenomenon of seasonal hunger [67,68], essentially a coping strategy to get by with scarce food resource over the year.

On the level of famine management and mitigation by state authorities or international donors, famine relief in the form of humanitarian emergency food aid is often applied; additional measures include food price stabilization and bans on exports [69,70]. Although these interventions have their own setbacks [71], food aid and other famine management measures are much more preferable for the avoidance of high mortality rates than neglect and lack of response on the side of the governing authorities, as historic examples show [72,73]. Mid-term strategies for prevention of drought-famine include technological interventions, such as investments in irrigation infrastructures and landscaping against soil erosion or introduction of famine-resistant crop varieties [74], or governance intervention, such as the implementation of social security systems and public health care, and instatement of early warning systems [75,76].

Hence, drought-famines are not mere natural disasters, but represent a failure of policies and institutions. This points to the political nature of large-scale food crises. Furthermore, food insecurity crises often arise in the context of armed conflict and interstate wars, a statement which does not only apply to organized violence in the 20th century but holds true to these days. Table 1 lists major famines from 1917–2018; climatic aspects are in the foreground for a number of modern famines, yet the context of armed conflict is present in a large number of cases.

Strong evidence of authoritarian politics as a direct cause of devastating famine can be found in the Stalinist famine (Holodomor) in 1930s Soviet Ukraine [77,78] and the Great Leap Forward famine in the People's Republic of China (1958–1962) [79,80]. The latter is arguably the most lethal hunger catastrophe in history in terms of victims' number quantity. Hunger is weaponized by aggressors against unwanted populations; the Siege of Leningrad (1941–1944) by Nazi Germany is a historical example [81]. The strong interrelation between organized violence and large-scale food crises leads Alex de Waal [82] to speak of many modern famines as "forced mass starvation". Having now established that many, if not most, modern famines are not the result of drought and harvest failure alone, but consequences of armed conflict, policy failure, and neglecting assistance to starving populations, the question can be raised of who is suffering from famine and food crises.

Table 1. Large-scale famines (deaths estimated at ≥0.5 M) in modern history, 1921–2017. Adapted and modified from [73] (pp. 22–23), [82] (pp. 60–64).

Year	Country	Deaths (M)	Comment
1917–1919	Germany	0.7	War/blockade
1920–1921	China	0.5	Drought, economic crisis
1921–1922	USSR	9	Drought, civil war
1928–1930	China (var. loc.)	2–12	Droughts, war
1932–1933	USSR (var. loc.)	5–6	Authoritarian rule, collectivization
1934, 1936–1937	China	5	War, economic crisis
1941–1944	Germany/USSR	4.6	War [1]
1942–1944	Bengal (India)	2	War, policy failure, supply shortfall
1941–1950	Germany/USSR	1.1	War [2]
1942–1943	China	1.5	War
1942–1945	Indonesia	2.4	War [3]
1944–1945	Vietnam	2	War [3]
1946–1947	USSR	1.2	Poor harvest, policy failure
1959–1961	China	15–25	Drought, floods, economic policy
1969–1970	Nigeria	0.5	War/blockade
1974–1975	Bangladesh	1.5	War, floods, supply shortfall
1975–1979	Cambodia	0.5–1.21	Genocide [4]
1983–1986	Ethiopia	0.6	War, drought
1995–2000	North Korea	0.3–1	Harvest failure, policy failure
1998–2002	DR Congo	0.3–5.4	War

[1] German "Hunger Plan", [2] German POW in Soviet captivity, [3] Japanese occupation, [4] Red Khmer regime [82].

The dominant view with regard to the political economy of food crises is based on Amartya Sen's [83] insight that, rather than declining food availability, the lack of ability to access food—the lack of "entitlements" to food—was crucial in understanding the genesis of famine. When purchasing food becomes costly, the poorer parts of a population are suffering and starving at first. Famines are then as much an issue of distributive justice as of food economics or agriculture [84]. This "distributionist" perspective [24] is principally accepted [85]; however, it does not appear to convince neo-Malthusians of the fallibility of their arguments.

Following these three general arguments, it is clear that elites and upper strata of society are generally affected by food crises to a much lesser degree than more vulnerable populations, creating what Ó Gráda calls "hierarchies of suffering" [86]. This does not preclude that famines do not have lasting and traumatic consequences to surviving individuals and households and to affected communities and societies, yet it raises questions surrounding hunger crises and social stability, which have a complex interrelation.

Acute famine is generally not associated with social upheaval, as famine-affected people are likely to be too weak to engage in protest or even armed uprising [73]. Yet, there is a very robust linkage between food insecurity crises and social unrest. The vector connecting both variables is usually food prices. Food (price) riots are a phenomenon observed up to the present day [87–90]. While empirical evidence suggests that food security crises as consequence of rising food prices are neither a necessary nor a sufficient condition for social unrest, the expectation of food insecurity can be a strong motivator to engage in protests or riots [91]. In recent history, the 2010–2011 "Arab Spring" appears as a confluence of conditions where rising food prices overlapped with radical loss of legitimacy of authoritarian rulers and long-boiling socioeconomic tensions [92,93]. Here, the connection between global food price volatility and political consequences on the national level underline the last argument: The interdependence within the global food

economy links production, processing, and consumption through trade in international markets [94]. Upstream—through trade in fertilizers, pesticides, machinery, and irrigation technology—and downstream—food exports—commodity chains are creating complex interdependencies [95].

The global economic shocks of 2006–2010 raised the number of chronically undernourished people mainly through ripples inside the global economy [90]. These macro-economic crises did not only uncover the heightened vulnerability of poor populations to food insecurity crises, but also led to a renewed recognition of food and land as vital resources, and agriculture in general and food production specifically as a profitable economic sector. The wave of large-scale land acquisitions ("land grabbing") in the Global South in the late 2000s and early 2010s is both an element and outcome of the multi-dimensional crisis [96].

The global food system, while undergoing transformative change, has been subject to integration, globalization (in the broader sense), and political struggles for more than 150 years. Food regime theory [97] reflects the way powerful international actors, such as imperial Britain in the second half of the 19th century, have historically been able to shape division of labor, systems of unequal exchange, and patterns of consumption across agri-food systems. For instance, industrial development in the Global North relied on the provision of cheap food [98], externalizing labor and environmental costs. As the global food system is permeated by power relations, so are societal nature relations in local and national agri-food systems [99]. The interactions between smallholder farming and its environmental and climatic condition, global connections in the agri-food sector, and political stability will be traced through the following case study.

3. Methods and Materials

The method is a single-case study of the southeast African country of Malawi, offering a critical case for testing theories of a strong climate–conflict relation. Single-case studies have the advantage of displaying the complexity of real-world situations [100], avoiding reductionism in the research process. The case at hand is a diachronic [101] study of a polity on the national scale. Despite the discourses on state fragility and state failures, and taking into account the colonial origin and other distinct characters of African states [102,103], and critique of "methodological nationalism" [104], the nation state here is relevant as a unit of analysis as it is the prevalent institutional mechanism to ensure social stability, based on Max Weber's classic definition of the state and its monopoly on violence [105].

This contribution builds on empirics presented in an earlier study [106] on the interlinkage of drought and social conflict, yet goes beyond this in questioning the inevitability of societal collapse in the face of climatic disaster and hunger crises. It asks the question: How does perpetual vulnerability to drought and food insecurity affect the overall integrity of a polity? Data for this case study have been collected by analyzing official documents of national offices and international organizations, media reporting, historical accounts, and agronomic and meteorological data. Social conflict data were sourced from the Armed Conflict Location & Event Data Project (ACLED) [107]. Furthermore, a brief field research trip conducted by the author in Malawi's Southern Region in September 2015 added to an understanding of the research topic through field observations and expert interviews with peasant farmers and experts.

4. Single-Case Study: Malawi

Malawi is a landlocked country in southern Central Africa which, due to its exposition to the El Niño phenomenon, is frequently affected by drought and floods [108]. Between 1980 and 2016, the country suffered eight major droughts [109]. Maize is the main staple food grown in the country, and yield failures have caused serious food shortages in the past.

Malawi was colonized by the British Empire first as British Central Africa Protectorate in 1891, later called Nyasaland, and, after independence in 1964, became Malawi. Immediately before the arrival of the British colonizers, the region was troubled by intense conflict, slavery, and hunger. Hence, the British Empire saw itself as a force of order, bringing (in the

words of Scottish missionary and colonialist David Livingstone) "Christianity, Civilization and Commerce" to the people [110].

British Nyasaland was a resource-poor country, so agriculture was from the outset a major economic activity. In the first decade of British rule, large swathes of arable land, up to 15% of land available for cultivation, were alienated to European settlers [111], establishing a legacy of cash crop cultivation and large-scale estates owned by a class of "planters" of European origin. First, coffee, and later, cotton, tobacco, and tea cultivation for export was encouraged by colonial government [112]. Coffee cultivation proved to be a disappointment, but then the establishment of tea estates, especially in the southern highlands, started a lasting enterprise.

As the colonial administration largely privileged the European planters and placed heavy tax burden in the form of a "hut tax" on small-scale African farmers, social tensions began to grow. The imposition of "thangata", a kind of work rent on the estates, contributed to popular discontent among smallholding farmers. The resistance against the excesses of colonial rule cumulated in the 1915 Chilembwe uprising, a proto-nationalist and millennial rebellion against the British led by pastor John Chilembwe. The uprising was quickly crushed and Chilembwe himself executed [113]. The episode remains the starkest form of social unrest in the colonial history of Nyasaland before 1945.

In 1949, Nyasaland experienced a dramatic drought-famine, in which, partly due to the inept emergency response of the British colonial administration, numerous people starved or perished from infectious diseases, weakened by malnutrition. In accordance with Sen's entitlement theory [83], Vaughan [114] explains that those with the least economic and social capital suffered the most, so the famine hit the poor, elderly, and very young children disproportionately hard.

While the famine itself did not immediately lead to large-scale social unrest, it had indirect repercussions on rural resistance against British rule. The colonial administration, in line with Malthusian perceptions of famine being caused by overpopulation and environmental degradation, introduced new agricultural and conservation regulations to prevent future famines [115]. Compulsive soil conservation measures, effectively hard labor with inadequate equipment [116], turned out to be very unpopular with African peasant farmers, so they resisted these measures. Yet other, more overtly political grievances—such as the forced federation with Rhodesia, the suppression of the Nyasaland African Congress, unresolved land distribution conflicts, and labor unrest in the tea estates—were more fundamental to Nyasaland's nationalist anti-colonial resistance of the 1950s [110,117].

After independence in 1964, Malawi remained a country vastly dependent on the primary sector. The one-party rule under president "for life" Hastings "Kamuzu" Banda (in power 1964–1994) continued to encourage the cultivation of cash crops such as tobacco and tea, mostly in estates, which were often controlled by government-linked officials [118], while food production for domestic consumption was a matter for subsistence farming households. Malawi remains the number one tobacco-producing country on the African continent. In 1994, Banda was forced out of office in a largely peaceful transition, and a multi-party democracy was established [119] in place of the previous personalistic dictatorship.

The year 2002 saw a severe drought-famine in Malawi, the first that not only matched the 1949 famine in severity and impact but was even worse [120]. Devereux [121] describes how failing rains and meagre maize harvests resulted in a grave food crisis: Malawi experienced the breakdown of communal mutual assistance structures in the rural sphere when well-established coping mechanisms failed to ensure survival for the most vulnerable. In 2002, as in 1949, there was not significant political turmoil as a direct consequence of the drought. However, the famine arguably paved the way for Bingu wa Mutharika's (president 2004–2012) popular program of bolstering food production through government assistance [122].

With the expansion of existing input subsidy programs in the framework of the Farm Input Subsidy Program (FISP), seed starter packs and subsidized fertilizers were distributed to farming households to grow maize. The program was successful in enhancing

maize production and was hailed as an effective food security policy among international development specialists [123]. Yet over time, FISP became a tool for clientelism and corruption [124]. Bingu wa Mutharika's initially successful strategy of securing popular support through this form of agrarian populism [125] faltered as his government arguably descended into authoritarianism. In 2011, Malawi faced large-scale civil society protests against the economic policies of the president; among the grievances of protesters were corruption, currency devaluation, suppression of freedom of the press and academic freedom, nepotism, and high cost of living [126]. The government retaliated with forceful attacks on protesters, and up to 19 were killed in clashes with the police [106] (p. 212).

After the death of Bingu wa Mutharika from natural causes in 2012, Malawi remained unstable for years. In 2015/16, the country was again hit by major drought and the government declared a state of food emergency [127]. In 2019, a new wave of violent protests emerged after the general and presidential elections that year appeared to be flawed [128]. Electoral violence is considered a frequent phenomenon in African countries [129].

Malawi today struggles with many economic, environmental, and political challenges; however, the latest Afrobarometer survey [130], which asks for the attitude of a representative sample of citizens, displays a clear preference for democratic values. While they see Malawi as a "democracy with major problems", the majority of respondents highly value free elections, freedom of speech, accountability of government, and non-authoritarian leadership. In 2020, the country managed an ordered and peaceful transition to the candidate of the major opposition coalition, after the 2019 election results were annulled [131].

5. Discussion

The single-case study represents a puzzle for adherents of climate collapse theories, as well as environmental security scholars. Despite persistent poverty, weakness of institutions, frequent droughts, and connected food security crises, the country has not descended into chaos or civil war. Although climatic disasters continue to cause human tragedy, the state of Malawi, despite its obvious fragility and recurrent political protests, remains intact.

Droughts are frequent in Malawi, but as rural people are generally prepared and remarkably resilient, (a) drought-famine only emerges under exceptional circumstances. This points to the (b) political context of the famines, here associated with the failure of early warning systems, depletion of food emergency stocks, inept policies (in 1949 as in 2002 and in the 2010s), and widespread corruption. As suspected by theoretical assumptions, (c) distribution of suffering from famine is most direly felt among the most vulnerable and impoverished parts of rural society. As emphasized before, throughout history, (d) large-scale famines in Malawi have never led to a collapse of social order on a scale that threatened the existence of the political system, neither in its colonial, its authoritarian one-party, nor its multi-party democracy phase. Finally, from colonial times and continuing into the post-independence era and now in a globalized age of accelerating anthropogenic climate change, e) Malawi has always been integrated as an extremely peripheral part of the global food economy. This had ramifications for agro-environmental systems as well as food production and subsistence. It is not unlikely that Malawi will depend on food emergency aid in times of climate-induced food security crises in years to come. Nevertheless, the case illustrates that postulates of direct causal linkages between climatic disasters, food crises, and social instability might oversee the complex political ecology of such situations.

6. Conclusions

In this contribution, the connection between climatic change, food insecurity, and social stability has been interrogated. The approaches pursued by adherents of environmental security and collapse theorists have been reviewed. The author finds that straightforward causal linkages between climatic extremes such as droughts, food insecurity, and social instability are not validated by the literature on food security crises and societal responses. The brief diachronic case study of Malawi, a country extremely vulnerable to the adverse

impacts of drought, reinforces the caution against strong claims of the existence of such linkages. Further research should attempt to produce a sophisticated framework to better account for the apparent complexity of the topic, instead of relying on reductionist assumption.

Without question, climate change already has a drastic negative impact on agricultural production [132], with urgent repercussions for food security, in particular on the African continent [133]. There is also no denial that climate catastrophe could lead to a pathway of irreversible damage to human societies, let alone the ecosphere [134]. Yet, this outcome is not inevitable. This reiterates the need to dramatically and urgently increase efforts for mitigating the climate catastrophe [1] and to provide finance for adaptation on a massive scale to the most vulnerable regions [135,136]. A country such as Malawi, which has contributed practically nothing to anthropogenic climate change but is already under stress from climate disasters, should be assisted in averting suffering [137].

The debates about climate change and societal collapse, primarily in the Global North and among eco-conscious parts of the population, sometimes border on the apocalyptic, as Erik Swyngedouw remarks [138]. In addition, unlike some pundits like to express [139–141], climate change is not a "war". Instead of repeating the narratives of collapse theorists and environmental securitization experts, climate justice advocates should work towards implementing just and sustainable modes of adaptation to climate change.

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