

Debating Environmental Change and Conflict in the Global South: Learning from Selected Cases in Africa

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ABSTRACT

The crux of this paper centres on the dynamics of environmental change and ensuing conflict. This review paper accentuates the various theoretical underpinnings regarding environmental change and conflict. Particular reference was given to countries in the Global South because they are the most affected by environmental change-related conflict. It was established in this paper that population growth is positively correlated to militarised interstate disputes, although this is not always the case. Again, there is a lack of coding in current conflict dates, to the extent that it is often complicated to ascertain whether specific conflict trends can be traced back to environmental change. Conflict data usually use data sets from the environment-conflict nexus that only capture high-intensity conflict events, which often ignore low-scale conflict within states and districts. Thirdly, the averaging conflict would likely lead to biased academic and policy conclusions. Fourthly, poor economic performances, either persistent or temporary, have the likelihood of causing violent conflicts. For instance, a land invasion in Brazil occurred immediately after adverse economic shocks. Further environmental degradation can cause migration by perpetuating migration. A significant obstacle encountered in the field of Risk perception literature pertains to the tendency of scholars to heavily depend on excessively deterministic explanations when conceptualising the concept of resource scarcity. Once more, the assessment of environmental change is exclusively based on small variations in temperature and precipitation. The examples examined in this study were selected from diverse geographical regions, encompassing East Africa, Central Africa, West Africa, and Southern Africa. In agro-pastoral West Africa, the frequency of conflicts is on the rise. As a result, policymakers and multilateral funders are increasingly shouldering the responsibility due to the ongoing growth of populations and the changing environmental conditions. There seems to be a correlation between environmental degradation and conflict; however, the relationship between these two is not always apparent or might be the other way around. Based on current theorising and available empirical evidence, it remains debatable whether environmental degradation increases the risk of violent conflict or whether conflict is leading to natural resource deterioration.

Keywords: Environmental Change, Climate Change, Africa, Environmental Conflict Sustainability, Environmental Degradation

Introduction: Conflict, Vulnerability, and Resilience

As we draw closer to 2030, we need all stakeholders from all spheres of life to reflect on their achievements towards the decade's sustainability agenda. With all the emerging environmental challenges ranging from natural hazards to emerging non-communicable diseases and climate change, the nexus between environment and conflict is worth reconsideration and therefore requires academic reflection. With that in mind, it can be noted that a concise and coherent definition of sustainable development is to develop a trajectory to encourage citizenship rather than spectatorship. Forced migration, bloodshed, wars, loss of livelihoods, and human-animal conflict are the direct consequences of ailing human relations with the natural environment.

The essence of this paper is centred on detailing the relationship between environmental degradation and conflict and mapping the way forward. Without a doubt, there is a need to factor sustainable development into the environmental conflict debate. The primary goal of the notion of sustainability is to achieve a harmonious relationship between society, the economy, and the environment, specifically in relation to the ability of plants' life-supporting ecosystems to regenerate. Sustainability should also encompass intergenerational fairness; nonetheless, determining the requirements of future generations is sometimes challenging. This study adopts a critical review approach, wherein it critically examines and assesses the fundamental aspects of sociology and climate change based on the existing body of investigations.

Literature Review

Conflict and environmental degradation: Theoretical Underpinnings and Conceptual Justifications

As we move towards 2030, we need to reimagine the progress that nation-states have made in achieving Sustainable development goals. Ending hunger, addressing climate change, and enhancing public health are some prominent SDGs that form the benchmark of the 21st-century sustainability agenda. As such, conflict over resources has derailed some of the signs of progress made in emerging economies. According to Bernauer et al. (2012), human activity is a significant factor in causing environmental change. Climate-related environmental changes have the potential to exacerbate pre-existing environmental issues, hence carrying significant ramifications for both human beings and their surrounding environments. Borrowing from Malthus (1978) in his book *The Essay on the Principle of Population*, it can be noted that violent conflict often results from environmental degradation and resource scarcity. Such arguments compel academicians to critically assess the nature of environmental changes, what influences those changes have on livelihoods, and the resultant nature of the conflict.

There seems to be a positive correlation between environmental degradation and conflict; however, the relationship between these two is not always apparent. Based on current theorising and available empirical evidence, it remains debatable whether environmental degradation heightens the likelihood of aggressive confrontation or whether it is conflict leading to natural resource deterioration. Bernauer (2012) states that "there is no systematic and direct causal relationship between environmental degradation and violent conflict since there seem to be many confounding variables, such as political and social-economic factors.

The Neo-Malthusian View and its Relevance in Contemporary Environmental Crisis

There seem to be two opposing schools of thought: the neo-Malthusian and Cornucopian scholars.

Malthusians believe that environmental changes pose a direct and severe threat to resource scarcity because lack of access to renewable energy increases frustration and creates grievances against the state, resulting in insurgency.

Three types of Environmental Scarcity Homer-Dixon (1984)

1. The supply-induced scarcity that reduces the availability of renewable resources due to consumption and degradation develops faster than the regeneration processes.
2. Demand-induced scarcity is a consequence of population growth and consumption per capita.
3. The unequal distribution of access to natural resources is what causes structural scarcity (Homer-Dixon, 1999).

According to Bernauer (2012), the above three interact and are complementary, resulting in "Resource Capture" and "Ecological marginalization". Resource capture refers to the phenomenon in which the depletion of resources and the rise in population lead to an unequal distribution of resources. Typically, under the aforementioned scenario, state elites endeavour to restrict resources that are not inherently scarce and occasionally distort the policies of the nation. As a result, this undermines the ability of institutions to address social complaints, leading to an increased likelihood of violence. Ecological marginalisation refers to the phenomenon wherein disparities in resource access contribute to the degradation and depletion of resources. Consequently, people experiencing a lack of resources may relocate to regions that are already under ecological strain. Consequently, this typically heightens the likelihood of conflict between indigenous populations and immigrants.

The Cornucopian View on Environmental Conflict

Contrary to the alarmist Malthusian view, Cornucopians exhibit a resource-oriented perspective and recognise that human beings may face occasional risks due to environmental degradation. Nevertheless, Cornucopian argues that human beings possess the capacity to effectively respond to limited resources by means of market mechanisms, technical progress, and social institutions. Simon (1996) posits a perspective akin to Ecological Modernisation, contending that humanity will possess the capacity to adapt to novel environmental conditions by means of advancements in technology and enhanced efficiency. The correlation between environmental changes and conflict is apparent in both phases. Nevertheless, collaboration among individuals utilising resources is essential for adjusting to and alleviating scarcity.

The majority of Cornucopians hold the perspective that resource scarcity does not necessarily result in significant instances of violent conflict. Instead, they posit that smaller-scale violent conflicts arising from limited resources are indeed feasible. Therefore, the primary point of contention between the Neo-Malthusian and Cornucopian perspectives seems to revolve around the deterministic nature of the Neo-Malthusian contention and the anticipated occurrence of extensive conflicts. According to Bernauer (2012), much empirical research on the nexus of environmental degradation and conflict relies primarily on qualitative studies of specific conditions and regions. The conflict in Yemen, Syria, Sudan, Kashmir, Ladak, Somalia, and the Middle East are just a few examples. It is important to acknowledge that the social and political consequences of environmental changes are expected to range significantly across various environmental changes—for example, water scarcity, floods, soil degradation, deforestation, and others.

Environmental Conflict: Reviewing the Arguments

There are different schools of thought regarding the environmental conflict. According to environmentalist Lorraine Elliot, the most prominent ones regarding Environmental Security are "Environment and Security" scholars and those of the "Securing the Environment" school. Elliot (1996) concludes that schools with a less militaristic focus on "Securing the environment" are more adept at identifying and mitigating the underlying factors contributing to such conflicts. The concept of "Environment and Security" is predicated on the premise that the state's territorial integrity is facing a growing number of non-military challenges, with environmental deterioration being a prominent example of such a danger. Another assumption posits that environmental decline inevitably leads to conflict, both between states and inside states. The Environment and Security literature places significant importance on environmental risks to National Security, which in turn strengthens and validates a militaristic mentality that contributes to the deterioration of the environment. Consequently, this hinders the effective implementation of practical measures to address environmental decline, according to Elliot (1996).

To Elliot and others, Securing- the Environment scholars, the resolution of environmental disputes necessitates a less militant approach. A strategy that acknowledges the necessity of addressing the root cause rather than the manifestations of environmental degradation is required. Again, attention should be paid to the damage created by the conflict. The major weakness of the environment-security literature in the 1990s was that some of it was speculative, and most of the literature was predictive and descriptive. Elliot (1996:151) Environmental degradation is not the real problem. The issue at hand only assumes the status of a security concern when it poses a threat to the security of multiple states and when there is substantial evidence establishing a connection between environmental degradation and the necessity for military intervention. The argument by Elliot does not hold much water, as it fails to factor in intra-state or inter-district violence. Again, there is a need to locate and document such small-scale intra-state violence caused by environmental degradation to proffer the proper explanations, thus stopping them in time before they become regional or continental. In most African countries, environmental degradation has led to instability and usually disrupts legitimised and authoritative social relations.

Objectives of the Review

1. To critique some of the existing theoretical approaches to the conflict-environmental change nexus.
2. To examine the existing nexus between environmental change and conflict in emerging economies.
3. To critically appraise the existing relationship between conflict and environmental change, offering alternative solutions to the current crisis.

Materials and Methods

The article highlighted the intricate correlation between climate change and conflict by utilising secondary research. An integrative literature review approach was used in coming up with this paper. An integrative review approach was used because the paper aimed to assess, critique, and synthesise the literature on environmental change and conflict in emerging economies. The nub of this review was to enable new theoretical frameworks and perspectives regarding environmental change and conflict in emerging economies. This review is intended to address a complex topic that is both an emerging and mature one. Environmental change is an emerging phenomenon. However, the topic of conflict spans decades and has vast literature. In the case of mature topics, the purpose of using an integrative review

method is to overview the knowledge base. This paper aimed to review and potentially reconceptualize critically and expand on the theoretical foundation of the specific topic as it develops.

The objective of this work is to generate basic conceptualizations and theoretical models as well as critically examine existing models, such as Malthus' perspective on population rise. The resolution of environmental conflicts in rising economies frequently necessitates the acquisition of data through innovative means. Typically, the objective is not to encompass the entirety of articles written on the subject matter but rather to amalgamate viewpoints and understandings from diverse domains or study traditions and sub-disciplines. The general aim of this review was to analyse and examine the literature on environmental conflict, territorial tensions, and climate change. The main ideas and relationships of issues were addressed and synthesised following specific themes emerging from literature, such as agro-based conflicts and ethnic conflict-related tensions.

Berneur (2012) states that most of the case study literature on the environment-conflict nexus predominantly uses the grounded theory approach, and by so doing, theoretical assumptions are usually developed using inductive reasoning, which is usually based on an in-depth analysis of inductive cases. Given the above, it should be noted that qualitative studies are typically appropriate for theory development and a clear, in-depth understanding of a particular context. Without empirical quantitative data, the paper relied on available secondary data. So this paper relied on a critical appraisal of journal articles on the environment and conflict. Generally, it reviews relevant literature on the environment and the solutions suggested. A future study should address the endogeneity of conflict in economic crises and political institutions from a methodological perspective.

Findings and Discussions

Existing evidence indicates that multiple environmental factors heighten the likelihood of violent conflict in some situations, but what are those precise circumstances? According to Bernaur (2012), there are still unresolved data gaps pertaining to conflicts, environmental issues, and migration caused by environmental factors. The ability of scientific study to establish a systematic association between certain environmental changes and particular types of conflict or collaboration remains limited. According to Gleditsch and Hegree (2000), as cited in Berneur (2012), transboundary waters are commonly linked to minor disputes rather than large-scale "water wars." Hauge and Ellingsen (2001) firmly believe that water scarcity can result in armed warfare. According to Wolf (2002) and Yoffer et al. (2003), nation-states and regions have a tendency to collaborate rather than engage in conflict regarding contested water resources. According to the findings of Yoffer et al. (2003), the majority of international water disputes can be characterised as diplomatic tensions rather than full-scale hostilities. Even though these scholars proclaim this view, the fact remains that resource scarcity can lead to serious confrontation.

Sociology and environmental conflict

There is a need for sociological interpretation of such conflicting conclusions in academic and policy discourses of natural resource allocation, particularly in fragile regions. Such a lack of consensus among scholars on sensitive societal issues clearly defines the relevance of well-grounded sociological theoretical approaches. Power, ideology, mediation, capital, colonialism, oppression, and society are examples of critical notions from sociology that can be used to construct critical questions. Featherstone

(2013) argues within critical sociology that environmental change must be viewed in the context of a larger contestation of uneven social and environmental connections, notably the neoliberal crisis.

Pier and Diehl (1998) investigated the impact of population density on militarised interstate disputes and found a positive association. However, the findings do not demonstrate that population density influences conflict involvement and escalation (Pier & Diehl, 1998). When it comes to intrastate conflict, Hauge Ellingsen (1998) investigated the effects of population density, freshwater scarcity, and land degradation and discovered that all of these had a direct impact on the frequency of conflict. According to Thesen (2005), the shortage of natural resources has minimal explanatory power in the context of civil strife. Nonetheless, Raleigh and Vidal (2007) argue that only water scarcity considerably raises the chance of violence in Africa. Hsiang et al. (2011) believe that fresh civil conflicts are more likely to occur in the tropics during El Niño years than during La Niña years. Sociologists must look beyond specific challenges with a distinct social character and ask transdisciplinary questions about ecological, social, and technological systems. This also means that transdisciplinary collaboration and multidisciplinary cooperation are required so that sociologists can work with oceanographers, biologists, environmental scientists, and physical geographers to address conflict caused by climate change and environmental change processes.

Buhang (2010) defines climate variability as inter-annual growth and variation from temperature mean precipitation, which do not predict conflict. Natural disasters considerably enhance the probability of civil war in nations with smaller GDPs, heterogeneous political systems, and pre-existing disputes. Increasing a country's ecological footprint lowers the likelihood of violent conflict. The absence of evidence does not necessarily indicate the absence of discrepancies.

The challenges in the Conflict literature

1. There is no coding in current conflict dates, i.e., the existing researchers do not identify whether conflict broke concerning environmental changes.
2. In addition, conflict data usually use large-scale data sets of the environment-conflict nexus, which only capture high-intensity conflict events.
3. According to Bauneur (2012), the Armed Conflict Dataset provides a definition of conflicts as instances of violence wherein government actors are involved on at least one side of the conflict.
4. Additionally, the data only includes conflicts that had a minimum of 25 fighting deaths every year. Nevertheless, this approach fails to consider alternative forms of conflict occurrences, such as demonstrations, incidents, and various forms of communal violence, which do not involve governmental entities.
5. Consequently, the issue of over-determination arises, rendering it exceedingly challenging to ascertain the association between certain environmental stress variables and particular forms of conflict. Bernaur (2012) argues that environmental circumstances might differ both geographically and within areas. Therefore, relying on averages is likely to result in biased findings.
6. Empirical studies do not deal with endogeneity among conflicts and environmental changes, i.e., most studies empirically measure environmental changes regarding water security, soil erosion, and deforestation.
7. However, quantitative studies on the environmental-conflict nexus frequently overlook these aspects. Qualitative studies have tended to emphasise the conditional impacts due to economic and political factors.

These research gaps are problematic because ignoring the role of government in managing scarce resources will lead to wrong ex-post conclusions and biased policy prescriptions. Given the above, the current paper used a multidisciplinary approach to clearly understand the multidimensional and direct and indirect causal relation without falling into the research gap that leads to wrong ex-post conclusions and biased policy prescriptions. So it can be seen that the indirect impacts of environmental changes on violent conflict cannot be ignored but need further understanding.

The Marxist explanation of environmental conflict and its relevance in emerging economies

Other environmental scholars fall for Marxist economic determinism, which is also valid to a certain extent. For instance, Gizelis and Wooden (2010) contend that the allocation of environmental resources is influenced by economic and political circumstances. Gizelis and Wooden (2010) claim that the occurrence of conflicts is not necessarily limited to nations experiencing droughts, temperature fluctuations, and water scarcity.

There is a likelihood of conflicts not occurring in these contexts, showing the existence of other crucial factors. What is clear from the arguments by Bernaur (2012) is that certain countries possess superior economic resources and technological skills compared to others, enabling them to effectively manage environmental stressors. The process is made possible through effective adaptation policies, a theme borrowed from the Ecological Modernization Theory. Berneur and Koubi (2009) believe that countries with mature democracies are more likely to succeed in preventing conflict over a limited resource. The above argument invokes the importance of political determinism rather than economic determinism.

Broadly speaking, the majority of research provides evidence in favour of the notion that mediocre economic performance, whether enduring or transient, is prone to instigating violent confrontations. Hidalgo et al. (2010) conducted a study utilising a panel dataset comprising many municipalities in Brazil. Their findings indicate that instances of land invasions by the rural poor in Brazil transpired promptly following unfavourable economic shocks.

Migration and competition for scarce resources as conflict factors

Another factor that shows how environmental degradation can cause conflict is through perpetuating migration (Henry et al., 2004; Knerr, 2004). Many research investigations have demonstrated that people often engage in internal and international migration as a means of coping with hazards posed by nature, for example, sea level rise, water scarcity, and drought. Numerous environmental experts assert that conflict is frequently the result of migration, particularly in the areas where migrants settle. The presence of migrants from many ethnic backgrounds can lead to rivalry for limited resources and, in certain instances, intensify socio-economic "fault lines" (Raleigh et al., 2008). According to Suhrke (1993), Berneur's analysis suggests that economic problems and migration caused by environmental factors are more likely to result in violent conflicts, particularly among nations that lack or have failed to establish effective political institutions and conflict resolution procedures.

Politics and Environmental Conflict in the Global South

According to Koubi et al. (2012), there is a higher likelihood of civil conflicts occurring in non-democratic nations when climatic conditions lead to an economic downturn. However, evidence from some cases in Africa suggests otherwise. For instance, in the Libyan case, the country enjoyed peaceful and prosperous moments under General Gaddafi's charismatic and often purportedly despotic rule. Libya

is now in shambles following the regime change agenda for Western democracy, which led to civil unrest and wars in the past years. There is a dearth of comprehensive data regarding the influence of environmental degradation on migration and the consequences of migration caused by environmental factors in conflict. The relationship between the environment, migration, and conflict is currently a subject of speculation.

The Clash of Competing Rural Livelihoods in West Africa

Scholars contend that there exists a strong correlation between climate anomalies and conflict. Doubtful academics contend that economic and political variables take precedence over quantitative involvement in the biophysical aspect of resource conflict. "This has been a dialogue of the deaf." According to Brottem (2016), scholars investigating the relationship between climate change and security in Sub-Saharan Africa (SSA) have shifted their focus towards the Farmer-Herder conflict as a plausible expression of resource conflicts resulting from climate change. According to Dreye and Roy (2012), rural African societies are presently facing the impacts of climate change, which are having a detrimental effect on their means of living and intensifying the rivalry for accessing resources.

The need for contextualised explanations is evidenced by the West African cases.

In the words of Brottem (2016), policymakers in Sub-Saharan Africa require a more comprehensive study that takes into account the specific situation in order to effectively support climate change adaptation and reduce the likelihood of conflicts. Once again, it is evident that climate-conflict studies conducted at the continental and national levels lack a comprehensive understanding of the local political settings, such as resource tenure patterns and environmental conditions, that shape the dynamics of these conflicts. The research authored by Brottem utilised quantitative analysis to examine the environmental factors that exert the greatest social influence on resource accessibility in certain regions of dryland. Sub-Saharan Africa. As a result, Brottem (2016) only addressed the issues of where risk comes from and how conflict arises, omitting the crucial qualitative elements of the environmental-conflict nexus, such as the actual nature of the risk and the reasons why it keeps happening.

According to Gememe (2014:6), "empirical evidence of climate conflict relationships also demands knowledge about how conflicts happen, which requires theories that explain the causal pathways that result in conflict." However, an explanation like the above requires a combination of different research approaches to analysing environmental and livelihood changes. West Africa's pervasiveness of farmer-herder conflict is due to seasonal incompatibility between the two livelihoods. This often occurs subsequent to the end of the rainy season, during which sedentary farmers endeavour to gather their harvests before they are devoured by livestock. The incompatibility occurs because, during that particular part of the season, herders will be engaging in efforts to ensure their animals receive sufficient water and grass prior to the onset of the dry season.

In West Africa, both parties have a conflict of interest, and several scholars have confirmed this. Fjelde and Von Uexkull (2012) state that farmer-herder conflicts over time escalate into a communal conflict that is seen to be a more feasible outcome of climate change than civil or inter-state conflict. One further factor contributing to the conflict in West Africa is the preference for crop development over pastoralism in resource tenure regulations (Hotchet, 2005). Local-level resource competition has been observed in Mali since the 1990s. The introduction of cash cropping and mechanised agriculture has exacerbated competitiveness, as it allows farmers to cultivate bigger areas that were formerly used as pasture land for

livestock herders. The consequence of the conflicts in Mali is that they eroded trust and prevented the herders and farmers from collaborating to address the increasing level of resource scarcity in the Sahel Region (Brottem, 2013).

In West Africa, particularly Mali, it is clear that understanding the environmental aspects of conflict in these regions necessitates a more thorough examination and critical appreciation of the social, cultural, and religious aspects of the matter at hand. This attention should be directed towards specific processes to change the understanding of the environment-conflict nexus and how these two directly affect each other.

A notable hurdle within the risk perception literature is the excessive dependence of scholars on explanations that are grounded in excessively deterministic conceptualizations of resource scarcity and environmental change, which are exclusively assessed through marginal alterations in temperature and precipitation. In agro-pastoral West Africa, the frequency of conflicts is on the rise. As a result, policymakers and multilateral funders are increasingly shouldering the responsibility due to the ongoing growth of populations and the changing environmental conditions.

The Challenge of Existing World Economic Models

According to Laybourn-Langton et al. (2019), mainstream political and policy discussions have failed to recognise that human impacts and influences on the environment have reached a crucial stage, potentially degrading conditions that are necessary for socioeconomic stability. Shreds of evidence of this negligence and failure manifest through growing economic instability, famines, large-scale involuntary migration, and environmentally connected conflict. In most policy and public administration areas, this historical disregard for environmental considerations has been a gross miscalculation (IPPR, 2020).

Hickel and Kallis (2019) resonance Laybourn-Langton et al. argue that the prevailing economic development models worldwide are founded on unsustainable resource use and overexploitation of natural resources. Hickel and Kallis (2019) further claim that these commercial strategies and investment processes frequently ignore environmental issues and promote the acquisition and consumption of resources in larger amounts, which is usually unsustainable. To justify such a disregard for the environment, socio-economic progress has been measured using the simple national income parameter, i.e., Gross Domestic Product (GDP). The use of gross domestic product fails to take into consideration environmental degradation. Instead, GDP is the foundation of investment and profit-making processes. Against such a backdrop, the destabilising impacts of environmental breakdowns are set to accelerate, increasing the chance of abruptly changing natural systems, such as sea level rise.

Consequently, there is a considerable gap in the involvement of humans in sustainable environmental use. Therefore, it is imperative for society to promptly reduce human impacts on the environment to sustainable thresholds. It is important to complete the aforementioned task while ensuring resilience against shocks brought on by current and upcoming deterioration. It can be achieved if citizens, policy formulators, and all the concerned stakeholders are fully aware of the consequences of their actions in the immediate and long-term use of environmental resources. According to IPPR (2000:2), the prevailing political-economic paradigm, narratives, policies, and power structures that shape modern political and economic thought have marginalised environmental concerns, as they are commonly perceived as obstacles to societal economic progress.

According to O'Niell et al. (2018), social advancement has required sacrificing the environment. The author additionally posits that no nation has exhibited the ability to achieve significant societal achievements without inflicting irreversible harm on the environment. The aforementioned assumption aligns effectively with the assertions made by Hickel and Kallis (2019), which suggest that policy debates frequently overlook the impact of acute stress on other natural systems, and it may be challenging to separate economic growth from such stressors. The use of Gross Domestic Product (GDP) as a metric for assessing socio-economic progress is deemed insufficient due to its failure to account for distributional considerations and its limited association with overall well-being. Consequently, the persistent adoption of GDP reinforces the misconception that economic growth inherently guarantees societal welfare (IPPR, 2021). Hence, it is evident that prominent indicators of economic growth and advancement fail to account for the impact of environmental degradation.

Piketty (2018) states that inequality and wage stagnation have opened up large power imbalances and, by so doing, have driven political and economic instability. More than 4 million people in the UK live in poverty, and 14 million are in poverty (TRF, 2019). It is a clear manifestation of already destabilised socio-economic systems that result from environmental breakdowns, which occur when economic systems are already experiencing high levels of stress (IPPR, 2020). Oxfam (2015) echoes the same and directly states that the impacts of environmental degradation are unjust. The poorest members of society suffer the most from environmental degradation's negative effects. Ironically, the most vulnerable to the effects are the least responsible for the problem within and across countries. For instance, wealthy nations have contributed the most to greenhouse gas emissions. The least developed countries bear the consequences of these emissions, raising significant concerns for global equity and inter-generational and intra-generational equity.

Environmental degradation intersects with other inequalities, such as ethnicity and gender. To a greater extent, it reflects the significance of sociological theories, such as eco-feminism and social stratification, in augmenting environmental debates. According to Berness Lee and Clark (2013), efficiency improvements at the micro level are usually increased by increased production and consumption at the macro level—the "rebound effect." Apart from this, it is regrettable to note that the current patterns of economic activity are firmly path-dependent due to the existence of specific processes inherent in the system with high levels of environmental impact, which limit the capacity to make these systems sustainable. Later, Erikson et al. (2015) argue that unsustainable infrastructure with decades-long lifespans "locks in" carbon use, inhibiting future decarbonisation.

In most emerging economies in the Global South, the socio-economic infrastructure is inadequately prepared for the consequences of environmental degradation. Societies are either ill-prepared or unprepared to handle modern environmental challenges, although calls have been made for adopting SDGs in every sector of life. Such failures have virtually made environmental conflict inevitable, thus raising such concerns at the core of modern sociological theorising, advocacy, subject matter, and methodological orientations.

The new scarcity and new risks

According to Elliot (1996:155), there are possible risks associated with the identification of scarcity in the context of strategic concerns and conflicts. Finger (1991 b:5) previously highlighted the notion that when scarcity is defined in strategic terms, there is a possible danger of converting every resource into a potentially strategic one. Hence, the occurrence of scarcity can be attributed to political factors rather

than inherent physical constraints. In a similar vein, Brock (1991:141) asserts that natural factors do not affect oil demand. The absence of scarcity is evident. It is limited to particular political, socio-economic, and cultural circumstances. Since resource scarcity cannot marginalise distributive justice, the previous arguments bring us closer to the need for a sociological interpretation of the course of events.

The paradox of the new scarce gives credence to sociological intervention in risk and conflict research. The new scarce are those resources we have long thought to be non-depletable. For example, water, land, food, and air According to UNDP (1994:29), the issue of water scarcity is progressively emerging as a contributing element to ethnic conflicts and political tensions in many regions. Tickell (1994) similarly held the same perspective, asserting that the rivalry for water has historically been a significant cause of conflict between governments and is expected to continue in the future. The Niger River in Africa is shared by 10 countries; the Zambezi River is shared by eight countries; and the River Chad is shared by six countries. According to Boutros-Ghali (1992: 5), the forthcoming conflict in our area would revolve around the Nile's waters rather than political matters. The conflict between Syria and Iraq around the al-Thawrah Dam on the Euphrates, Ganges India vs. Bangladesh, Medjerdu River-Tunisia vs. Libya, Mekong River-Laos Thailand, Cambodia, and Vietnam.

Estimates seem conservative as they tend to overstate the cases. Nevertheless, there is no doubt that arable land is now a scarce resource in absolute terms and per capita. Ironically, land scarcity predominantly affects the poor in the Global South, as they are incapacitated to apply the appropriate technologies to cope with that scarcity. Butts (1994) states that "international environmental issues can lead to instability, and this particularly explains the situation in dispute between Ethiopia and Egypt and the 2020–2021 uprisings of Tigray Rebels in Ethiopia." Similarly, Boutros-Ghali (1992:5) stipulated that ecological damage is a new risk to stability. Picked (1994:23) concurs with the Brutland commission and sides with what Brown (1989) states: "There are burgeoning ecological threats to peace and stability." However, contrary to the mainstream argument of linking conflict to environmental degradation, scholars like Dealney (1990), Holst (1989), and Mathews (1989) argue that environmental degradation occasionally results in conflicts, and they do agree that there are other factors, such as economic decline and authoritarian rules.

According to Brock (1991), ecological degradation has long been identified as a strategy crucial to the state's power, and consequently, resources are integral to state-making. Mischer (1992) gives an interesting argument that supports what Brock (1991) states: Certain historians have established a correlation between the emergence of organised combat during the Bronze Age and the deterioration of the environment. The above clearly shows that although there are new counterarguments on the environmental degradation-conflict nexus, the duo has a long history that cannot be ignored but needs to be appreciated. In relation to the aforementioned matter, Brock (1991) asserts that the utilisation of natural resources by humans has historically resulted in conflicts amongst social units regarding the allocation and distribution of these resources. The conflict of 1969 between El Salvador and Honduras, commonly known as the Football War, is recognised as a significant event having a clear environmental origin. According to Pirages (1991:32), if resources were important in the past, the competition for resources will lead to more conflicts in the present and near future. Nevertheless, it is important to note that a military confrontation involving resources does not necessarily imply a competition for resources. An impartial interpretation is required to understand the correlation between conflict and environmental deterioration.

Environmental Change, Social Inequalities, and Ensuing Conflict

Environmental degradation extenuates proliferating disproportions between the rich and the poor and results in "relative deprivation conflicts," according to Homer-Dixon (1991). Climate change has emerged as a prominent illustration of global inequity in the modern era, given its estimation as the ethical equivalent of warfare. Failure to adapt and mitigate its consequences has catastrophic consequences for international security. Emerging countries have less adaptive capacity due to marginal ecosystems; less infrastructure usually makes them feel the most extreme of these environmental changes. Frequently, conflict is not primarily caused by resource shortages or environmental degradation but rather by the social and economic repercussions of environmental deterioration that cause conflict within states. Economic decline has the potential to cause political instability and also lead to social strain.

Butts (1994) believes that environmental decline is critical because it is one of the sources of critical tensions that will undermine the stability and wellbeing of "Newly Formed Democratic Regimes". Importantly, Elliot (1996:161) states that environmental conflict is commonly a problem in the Global South. However, nevertheless, the global north should be concerned and be directly involved because their interests may be directly threatened if the growth in developing countries is towards extremism. Borrowing from what the Brundtland Commission (1987) states, we need to understand how environmental degradation, injustice, poverty, and conflict intersect in complex and potent ways. Given the above arguments, there is a need to map the way forward given the time shortage as environmental conflict threatens to derail the sustainability gains of the century. The following section will focus on solutions to environmental conflict and how such measures will help achieve much-needed resilience and conflict-free sustainable resource use.

Solutions to Environmental Conflict

Several environmentalists and geographers have developed models and theories that cater to resource scarcity and its consequences. Elliot suggests that there are two broad categories of responses to environmental conflict. (1) symptom-focused; (2) cause-focused. Symptom-focused adaptation responses serve environmental degradation and conflict as threats to national security. Such actions usually invoke military and security responses. Military solutions and the defence forces' involvement are more traditional and coercive. The Repressive State Apparatus can be used in cross-border resource conflicts, such as in the Tigray Region of Ethiopia in November 2020. Again, the forces can be used as agents for repressing internal conflicts, such as environmental demonstrations. A defence force can be used to guard against environmental refugees. Over and above all, such measures can be effective in battering the immediate consequences of the conflict but have the ensuing impact of creating long-term conflict due to the 'rebound effect'. There is causticity, and it is absurd to locate environmental threats as non-military yet to identify the study of ecological security within a "threat-to-state" discourse that portrays the unavoidability of conflict and the necessity of military intervention. In short, Elliot (1996:164) concluded that "military solutions will not work for non-military threats."

This paper posits that military techniques can be employed to exert control over environmental renegades by leveraging military capabilities to facilitate collective environmental action on behalf of the international community. According to Elliot (1996), the military has the potential to become a defender against environmental dangers, thereby redefining the concept of environmental security as a discourse centred around the environment. Environmental degradation can be a military threat, or it can

be a non-military threat. Therefore, it is necessary to understand the nature of the environmental conflict, its roots, and its consequences before deciding on the appropriate intervention measures. In some cases, it is recommended to apply bottom-up, context-sensitive strategies when dealing with environmental problems such as climate change.

There is a tendency to identify conflicts as either intra- or inter-state, which is state-centric, marginalising an essential aspect of environmental degradation. The Brundtland Report 1987 states, "The earth is one, but the world is not." Highlighting the deterioration of the environment and the resulting conflict, both within and between different groups, reinforces one of the factors contributing to environmental degradation. Elliot (1996) states that, in the majority of instances, ecosystems are managed as if they can be contained within the boundaries of a single state. Consequently, rather than states conforming to eco-regional borders, eco-regional boundaries are fragmented into geopolitical entities. Understanding the nature of environmental conflict will assist in coming up with the necessary measures to deal with such conflict. Interstate conflicts require the cooperation of the states involved, meaning the territorial integrity, sovereignty, and religious and cultural boundaries of the stakeholders involved should be respected if everlasting sustainability is achieved. The same applies to intra-state conflicts involving ethnic groups, tribes, and racial groups.

Given the above, it is alarming to note that natural resources in most nations are exploited in the state's interests rather than the interests of the ecosystem or bioregion. Such undermining of the concept of ecological citizenship prompts the need for more sociological engagement in global environmental issues. Even if nation-states ignore what is outside their borders, environmental degradation transcends geopolitical boundaries, as shown in shared resources such as transboundary rivers, airspace, and desertification.

The necessity of tackling the factors contributing to environmental degradation and conflict stems from a security perspective that prioritises human interests and aligns with the concept of environmental security, which emphasises the importance of preserving environmental integrity. Rather than attributing environmental degradation solely to other states and neighbouring regions, it is imperative to shift attention to human activities that contribute to such degradation. In accordance with the Brundtland Report's emphasis, it is imperative to address the fundamental aspects of the issue. Instead of being compelled to react to conflict, it is likely that conflict itself is a contributing factor to environmental deterioration. According to the findings of Elliot (1995), the process of resolving causes is intricate and demanding due to the necessity of modifying human activities and behaviour in both the global south and the north. To tackle environmental degradation, it is necessary to tackle poverty, disparities between the wealthy and the impoverished, and the excessive reliance of developing countries on international organisations (Elliot, 1995).

Conclusions

Overall, most studies support the view that persistent or temporary poor economic performance has the likelihood of causing violent conflicts. A comprehensive appreciation of the environmental aspects of conflict in vulnerable regions necessitates a more thorough examination and critical evaluation. This attention should be directed towards specific processes to change the understanding of the environment-conflict nexus and how these two directly affect each other. A major hurdle encountered in the field of risk perception literature pertains to the excessive dependence of scholars on explanations that heavily

rely on too-deterministic conceptualizations of resource scarcity and environmental change, which are only assessed through marginal alterations in temperature and precipitation.

Furthermore, conflict data typically employs extensive datasets that examine the relationship between the environment and conflict, focusing solely on instances of high-intensity conflict. Moreover, the data exclusively documents battles that result in 25 or more fatalities per combat on an annual basis. Nevertheless, this methodology fails to consider alternative forms of conflict occurrences, such as protests, disturbances, and various forms of communal violence, which do not involve governmental entities. This leads to the problem of overdetermination, which makes it very hard to figure out the link between different types of environmental stress and different kinds of conflict. In empirical research, the issue of endogeneity between conflicts and environmental changes is rarely adequately addressed. Specifically, the majority of studies primarily focus on measuring environmental changes related to water security, soil erosion, and deforestation. Qualitative research has mostly focused on the conditional implications resulting from economic and political factors. However, quantitative studies on the relationship between the environment and conflict often overlook these components.

Conclusively, the current socio-political and economic systems are divisive and degenerative in that they continue to drive critical levels of environmental degradation without meeting human needs. It is imperative to note that there is a need for a paradigm shift in as much as environmental issues are concerned within societies. As we approach the end of the decade of the 2030 sustainability agenda, there is a need to appreciate that the existing political-economic paradigms in various nations around the globe are indeed the drivers of environmental degradation.

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