Environment and Conflict: Security, Climate Change, and Commodity Resources

By Shannon O'Lear and Adalric H. Tuten

In the current, post-9/11 era "conflict" has become increasingly more complex. Realists' theories in International Relations which focus on state-to-state interactions are inadequate to capture new or more active modes and agents of conflict. Non-state terrorism, the interests of profit-seeking corporations and industries, and the widespread use of communication media by non-state actors, such as the Arab Spring protests, challenge the idea of state actors as the only–or even key–players in conflict. Samuel P. Huntington's predictive view of cultural conflict centers not on state to state tensions, but on tensions between self-identifying groups of people which may transcend state borders.[1] The "Clash of Civilizations" argument looks to differences between cultures, values, and world views as the basis for conflict. However, it is difficult to determine how cultural values may be clearly distinguished from economic issues, or what the objective of culturally-motivated, armed conflict might be other than to secure territory in efforts to exercise self-determination and to gain or protect sovereign statehood.

Conflict is complex precisely because it refers to different types of tensions, involving different types of actors, and happening at multiple–often simultaneous–spatial scales. The very geopolitics of conflict have become more obviously complicated than mere state-to-state conflict. Conflict is most often thought of as armed and involving direct, physical aggression. However, there are many types of conflict, and violence can interfere with human well-being. Johan Galtung's work on peace and conflict offered this perspective, "*Violence is here defined as the cause of the difference between the potential and the actual*, between what could have been and what is."[2] More recently, James Tyner has written about ways in which violence and place are co-constitutive, and about the indirect violence of state-sanctioned activities as an often overlooked feature in scholarship.[3] Indeed, there is a vast, multidisciplinary literature on violence, and it is mentioned to acknowledge that a focus on armed conflict does not necessarily capture the trends and processes which are affecting individuals and groups in many different contexts.

The changing geopolitical nature of conflict becomes particularly evident and

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even more complicated when considering the ways in which natural resources, ecosystem services, and other environmental features are integrated with conflict–armed or otherwise–at multiple spatial scales. Recent scholarship examining environment-related conflict demonstrates a richness and breadth of focus. Definitions of conflict can range from civil society engagement with resource development[4] to a military strategy involving the intentional infliction of environmental damage.[5] Environmental features in conflict can include the built environment, such as the destruction of urban spaces and the violent production of new spaces to eradicate the living spaces of certain communities.[6] Other work has examined anti-terrorist rhetoric influences on popular understandings of how natural resources may be linked to conflict.[7] A political economy perspective recognizes that conflict related to natural resources, such as common pool resources, involves multiple spatial scales beyond local actions and impacts.[8] These are but a few examples of how conflict linked to environmental features is currently understood.

In this paper, we focus on three aspects of environmental features that are currently attracting attention as a conflict within the related literature: environmental security, climate change, and commodity resources. This coverage is not intended to be comprehensive as much as illustrative. By focusing on key themes of each of these topics, a more nuanced and spatially sensitive understanding of environmental features may be increasingly linked to different kinds of conflict.

Environmental Security

Environmental security is a concept that has been widely discussed and debated. Broadly, environmental security is a recognition that environmental aspects can exacerbate already tense situations. Referring to the environment in terms of energy resources, water, food supply, infectious disease, habitability challenges, and disasters associated with extreme weather events, repercussions of resource wealth, environmental impacts of war and war preparation, or peace through environmental cooperation.[9] While some have argued that the environment is a significant security issue,[10] others hold that militarized, security approaches cannot appropriately address environmental issues.[11] With this, scholars argue that adding environmental concerns, as well as other non-traditional issues to the security agenda, complicates effective policy making.[12] The question has also been raised about what, and for whom, environmental security really secures.[13] Also, it has been argued that the vast literature linking environmental degradation to conflict is not driven by empirical realities, but by an interest in justifying the continuation of state

WHILE SOME HAVE ARGUED THAT THE ENVIRONMENT IS A SIGNIFICANT SECURITY ISSUE, OTHERS HOLD THAT MILITARIZED, SECURITY APPROACHES CANNOT APPROPRIATELY ADDRESS ENVIRONMENTAL ISSUES.

legitimacy and military intervention.[14] Overall, the idea of environmental security has been critiqued for being vague on how environmental features are linked to conflict, in part because the very concept and meaning of "environment" is extraordinarily malleable, and also for reinforcing that a focus on states as the best (or only) spatial scale to understand links between environmental features and conflict.[15] To date, environmental security research has paid limited attention to things like hazards, disasters, gender issues, social vulnerability, strategies to build resilience at the civic level, and efforts toward peace building. However, research along these lines could potentially contribute much when considering multiple dimensions of these issues, particularly as they relate to urbanization and climate change.[16]

The word "security" evokes the idea of a sovereign, territorial state whose leadership acts, ideally, in the interests of its populace. The idea is that if a government can control its territory, and by implication its borders, then it can ensure the security of its state. However, the reality is that famine often occurs under conditions of plentiful but uneven food distribution, groups of people within a state are rendered insecure due to their ethnicity, gender, age, or immigration status, or populations in certain locations face greater health risk due to infrastructural problems or high concentrations of pollutants from industrial or agricultural activities.

The concept of environmental security challenges the traditional notion of state security and the subsequent implication that state-level security translates into human-level security within the state. Additionally, the concept of state borders as a guarantor of security is called into question. There persists the notion that security is about keeping risk and threats outside.[17] Borders are permeable to some flows, like labor, trade, investment, information, and ideas, but closed to others. In addition, not all of these flows are successfully controlled by states such as humans, drugs, weapons, diseases, information, and illegal migration. A traditional focus on how to secure state borders can only partially address concerns of state stability, as borders themselves are taking on new meanings and dimensions. Although borders are risk management sites, they also raise questions about who is defining security and on what terms.[18]

With this, it is clear that environmental conditions, patterns, and flows do not adhere to the human construct of the territorial state system. Point and nonpoint source pollutants move through the soil, water, and air to distant locations and may not be traceable to a particular origin. Droughts, floods, and storms do not recognize political boundaries. The global economy enables more complex and far-reaching commodity chains which distance consumers from the impacts of their consumption. More importantly, the notion of borders as a barrier to risks and threats carries the implication that the security of some groups should be prioritized over others, while a proactive view would include:

> *…the recognition that we are common inhabitants of a biosphere first, and citizens of particular states only secondarily. This rethinking of the implicit terms of geopolitics is*

gradually shifting the terms of international cooperation…[19]

States are necessary actors in developing better practices and policies, but focusing too much on the state neglects the role of corporations not only in resource extraction and the processing of raw materials, but also for their role in negotiations of international treaties and trade agreements, as well as in product marketing. Environmental security is often discussed as part of the broader issue of human security, which recognizes the human—rather than state—scale of security. Human security draws attention to the complexity of interactions among environmental conditions, resource use, economic, political, and social processes, and the unevenness of globalization. The goal here is to avoid the territorial trap[20] of starting and ending with the state scale in order to understand human-environment relationships. Conversely, it cannot be assumed that the "local" scale is necessarily the right or best lens through which to view and understand current processes and dynamics.[21] The spatial scale of environment-related security and conflict will necessarily vary according to context.[22] This idea is further reinforced when considering climate change.

Climate Change

Climate change concerns the increased unpredictability in weather, seasonal, and longer-term patterns around which states have constructed their economies, cities, food supplies, energy systems, and essentially their populations' entire lifestyle. Climate change is associated with more droughts and floods, more dramatic storms, and an increasingly damaging chain of effects resulting from those patterns. Human and environmental systems cannot necessarily shift location to take advantage of these changes. Warming temperatures are challenging agricultural productivity in the American heartland, but agricultural practices cannot simply move northward since land ownership, a national border, and soil types preclude such agricultural migration. Island states, cities, transportation networks, energy grids and oil pipelines cannot be relocated. Infrastructure is mostly fixed, as are our common understandings of space, place, ownership, and belonging.

ENVIRONMENTAL SECURITY IS OFTEN DISCUSSED AS PART OF THE BROADER ISSUE OF HUMAN SECURITY, WHICH RECOGNIZES THE HUMAN—RATHER THAN STATE—SCALE OF SECURITY.

Climate change is considered a global issue because it involves changes in global-scale patterns of oceanic, atmospheric, and biogeochemical cycles. Greenhouse gases are uniformly mixed pollutants, and measurements such as temperature are consolidated at the global scale in some computer models. The recent Rio+20 United Nations Conference on Sustainable Development is often referred to by the

nickname "Earth Summit," again suggesting global involvement and concern about climate change and related issues. For these reasons, discussions of climate change often invoke the objective of "global security." Yet, it must be questioned what precisely is meant by "global security" in a world where economic disparity is the norm.[23] Several groups of indigenous people in multiple countries have challenged the "global" assessment of climate change and point to the environmentally destructive practices in the wealthier economies of the *North*, asserting that "Inequality is masked by arguing that climate change is global. There is no 'common future.'"[24]

Scientific studies on climate change are most often conducted in research institutes, universities, and governments–again–in wealthier, more powerful countries. These streams of research end up defining the terms and measurements which then set standards for how climate change is understood and interpreted. For instance, the Kyoto Protocol, an international agreement associated with the U.N. Framework Convention on Climate Change, aims to reduce greenhouse gas emissions. The Protocol categorizes participating countries either as economically developed or industrializing, and sets higher standards on countries whose economies are more advanced. Two scholars from India who were not part of the established scientific community challenged how greenhouse gas emissions were assessed.[25] They pointed out that no distinction was made between "luxury" and "survival" emissions. When carbon emissions are assessed without regard to their source – families cooking with coal or families driving SUVs – wealthier countries are favored over those where emissions are generated for basic needs. This concern points to economic, political, and social issues of resource use; however, these features are difficult to capture in both quantitative terms and to integrate into global climate models.

Another problem with the global view of climate change is evident in the issue of carbon offsets. Here, the concept is that total, global carbon emissions can be balanced by increasing the number of carbon sinks, such as forests. Carbon offsets have become a popular notion because they suggest that Western society is somehow evening out the negative consequences of lifestyle choices defined by high consumption. For instance, individuals are given the option of paying a carbon offset fee when purchasing an airline ticket, ostensibly balancing the CO2 generated by the trip. Celebrities make generous gestures by planting small forests of trees in poor countries to offset their personal CO2 generation. Yet, this approach to balancing out a global scale equation assumes that there is, somewhere, empty and available space ready to use for tree planting. In addition, such efforts to alleviate the greenhouse gas guilt of wealthier countries has been met, in many cases, with resistance by local communities in places identified as suitable for tree-planting schemes who do not identify with the economies and process that are causing the greenhouse gas problem in the first place.[26]

These examples raise a cautionary point that climate change is not necessarily best understood as a global issue. In terms of conflict, climate change is often

referred to as a "threat multiplier" since the effects of climate change exacerbate already tense situations or add a layer of complexity. Blanket references to climate change and its effects, however, tell very little about specific issues that might contribute to violence and conflict or about challenges that can be addressed through humanitarian or policy endeavors. While much of the scholarly work done on climate change and conflict has focused on state-based armed conflict,[27] other work has considered one-sided and non-state violence.[28]

The number of state-based armed conflicts has declined significantly in recent years,[29] but concerns about human security, or rather insecurity, persists. Climate change is likely to increase human insecurity in many places by reducing access to a number of resources that people require for their livelihoods, and it is also likely to diminish the ability of states to enable people to sustain their livelihoods.[30] In addition, climate change is likely to undermine human security differently from place to place, and in relation to several other social factors. With this, research should aim to understand "the political economy of environmental insecurities."[31]

Previously on the Whitehead Journal of Diplomacy and International Relations website, an item included the comment:

> *The International Institute for Strategic Studies states that the most efficient way to combat these challenges is to invest in infrastructure and technology with a focus on renewable energy sources. Developing sustainable technologies and agricultural practices, as well as investing in human capital will have to be main points on every government's agenda in order to combat these threats.*[32]

Indeed, such investments in infrastructure and technology may boost the resilience of states, communities, and individuals in the face of climate change and potentially ameliorate the potential for violence and conflict. Additionally, it has been observed by E3G, a not-for-profit organization working in the public interest to accelerate efforts toward sustainable development, that:

> *Current responses to climate change are failing to manage effectively the full range of climate security risks. There is a mismatch between the analysis of the severity of climate security threats and the political, diplomatic, policy and financial effort countries expend to avoid the attendant risks.*[33]

The point is that it is not enough to plan to possible changes in environmental systems but to plan in a way that seriously considers predictions of significant change to interrelated systems. For example, if a bridge needs to be rebuilt, engineers should not construct it as before, but with an eye towards resilience. This idea also holds for energy and food systems, water usage projections, the pricing of commodities, etc. At the very least, planners and decision-makers (including all consumers), should not only consider the current costs of available choices, but also the resilience or risk

endemic to those choices, which are not necessarily reflected in the price. The planning and decision processes much incorporate an ability to adapt – both for people here and for others elsewhere – rather than making decisions that ignore the possibility for flexibility and adjustment later.

Commodity Resources

In this section, the focus shifts from climate change to future sources of and forms of conflict related to natural resource commodities such as oil, water, timber, diamonds, rare earth minerals, and even narcotics. Furthermore, this analysis highlights the relationship between conflict and natural resource commodities from the perspective that such commodities become embedded in sources of conflict as a result of the value assigned to them by humans human civilization, not from their mere presence in a given location. Abiodun Alao argues "resources are an expression of appraisal and are thus entirely subjective."[34] In other words, humans bestow meaning upon a given resource. While discussions on how this process occurs is beyond the scope of this paper, the focal point is on the act of making a particular resource a commodity for consumption and trade. Whether the commodity is opium or oil, it is an act of appraisal, making the relationships among natural resources, violence, and conflict tangible. Any natural resource that becomes valued as a commodity is subject to entanglement in conflict at any time within a the commodity chain, from exploration and extraction to its ultimate form as waste. Clearly, an environmental resource that is commodified is less than "natural".

The relationship between natural resources and conflict has captured a wide range of scholarly and non-scholarly attention, including academic works from political scientists on civil war and resource exploitation[35], mass media accounts of numerous and seemingly inevitable resource conflicts,[36] NGO publications drawing attention to resource conflicts effecting local communities,[37] and countless blogs on themes such as resource nationalism in Asia and the subsequently dire consequences for peace.[38] These divergent voices and narratives on resource conflict forward cautious–as well as apocalyptic–views, and raise the question of how resources may be linked to violence and conflict in the 21st Century.

In response, there is strong support for foregoing state-centric perspectives that are essentializing or deterministic in favor of views that emphasize holistic approaches to account for the complex social and relational character of commodity resource conflicts. Dunning and Wirpsa demonstrate an example of this approach in their analysis of the relationship between oil and conflict in Colombia. The scholars examine linkages among a plethora of actors, from local communities to international private security firms, involved in producing and sustaining conflict over oil. These actors engage in constantly shifting social, political, and economic conditions, both locally and globally.[39] In other words, understanding the future relationship between commodity resources and conflict is contingent upon understanding the spatial scale of the social and relational dimensions linking a particular resource to violence or conflict.[40] Thus, the question is less about whether

or not commodity resources will be linked to conflict and more about how and in what specific ways resource commodities will be linked to conflict. When the meaning of commodity resources to various social actors and across various spatial scales changes, the contextual issues surrounding commodity resources and their associated conflicts also changes. Resources are not equal in terms of their role in conflict situations.[41] To demonstrate this point, emphasis must be put on the complex example of water, a resource that permeates academic and popular literature on resource conflicts.

When the U.S. Office of the Director of National Intelligence (ODNI) published its study on global water security in February 2012, water attracted the highest level of U.S. national security attention concerning its potential role in future conflicts.[42] The document is a combined intelligence community product requested from the U.S. State Department to ascertain how water problems, from shortages to floods, will impact U.S. national security through 2040. The document narrows its analysis to "strategically important" states, and trans-boundary issues of select water basins (e.g. the Nile, Tigris-Euphrates, Mekong, Jordan, Indus, Brahmaputra, and Amu Darya rivers). The report concludes that many countries of strategic importance to the US will have water problems, ranging from pollution to acute shortages, which "will risk instability and state failure, increase regional tensions, and distract them from working with the United States on important US policy objectives."[43] Moreover, water problems will hinder food production and energy generation in countries strategically important to the U.S., such as Egypt and Pakistan, further exacerbating problems related to their economic development and population growth. Perhaps most interestingly, the study concluded that where water tensions historically have led to increased water-sharing agreements rather than violent conflict, acute water shortages over the next ten years will likely change this trend. Thus, the U.S. national security community anticipates that water will be used as diplomatic and strategic leverage by states against a variety of actors, including other states, NGOs, and investors. Additionally, it believes that water will increasingly be the target of terrorist and extremist acts. Despite this gloomy speculation, the study also suggests opportunities for peaceful resolution of tensions, such as countries approaching the U.S. for technological, legal, or political solutions to their various water problems, and in the effected countries' reliance on the precedent of trans-boundary water cooperation, such as the Indus River Commission between India and Pakistan and the Mekong Committee for Southeast Asia. Also, it is useful to note that both of these agreements have survived protracted wars between the member states.

The problem with this government report, however, is that it is grounded in a state-centric paradigm. As a result, the analysis confines the problems and solutions associated with water security largely to state actors, even when non-state actors play an overt role, as with investors in water conservation projects or with terrorists seeking to attack water infrastructure. Thus leaving a frightening narrative of water insecurity that is vague and incomplete in both its conception of the problems and

their solutions. In other words, the ODNI document considers only a narrow range of explanations and outcomes for the water and conflict relationship, despite its insistence that such a relationship will worsen over time.

Here, a relational and multi-scale spatial approach helps illuminate the water and conflict trajectory. First, the issue of spatial scale is central to understanding the water and conflict relationship, which has a substantial history but is often missed by analyses pinned to a Westphalian model of nation-state disputes. For example, Rongxing Guo has shown that violent conflicts associated with contested water resources have occurred, and continue to occur in relation to China's Lake Weishan.[44] This conflict has roots in a 1953 inter-provincial administration scheme dividing Lake Weishan between Shandong and Jiangsu provinces in a manner not satisfactory to either side of the conflict, even after three supplemental documents were issued by the central government. Moreover, the outcome of the administrative scheme produced about 400 recorded deaths and serious injuries between its inception and the year 2000. This example shows that the spatial scale has to be considered in order to understand the roots and apparent intractability of the conflict over water resources in Lake Weishan, which a state-centric analysis entirely ignores. Furthermore, the Lake Weishan example highlights that a consideration of the actors involved in the ongoing dispute, many of whom are non-state actors, is another important dimension to understanding the water and conflict relationship. Fixating on a state-level analysis conceals numerous cases of natural resource conflicts that ultimately would help clarify how and why they exist, and most importantly, how to resolve them.

BY NOT ACKNOWLEDGING THE RELATIONAL ASPECTS OF SOCIAL LIFE, THE DOCUMENT PRODUCED BY THE ODNI FAILS TO ADDRESS MUCH OF WHAT IS IMPORTANT ABOUT THE RELATIONSHIP BETWEEN CONFLICT AND WATER.

The relational aspects of violence and conflicts involving commodity resources must be taken into account. Several questions must be answered to elucidate these aspects: who is the tension between; if actors are engaged in a contest over a particular resource, why are they impelled to use violent force; and more specifically, who are the key players in such conflicts. As noted above, natural resources do not hold the same value over time and place. Natural resources, such as water, do not possess agency or ability to affect political outcomes by themselves.[45] Rather, people attribute meaning and value to water through their relations with one another and their experiences with water resources.[46] These experiences can be further broken down for analysis to address, for example, how an individual's collective or personal attributes, like gender, ethnicity, religion, or social class, impact the relationship between the resource in question and conflict. With this, collective

or personal attributes inform and mediate the relational aspects of conflict over commodity resources, such as water. By not acknowledging the relational aspects of social life, the document produced by the ODNI fails to address much of what is important about the relationship between conflict and water. Consequently, the ODNI should inquire what makes water particularly susceptible to producing, aggravating, or sustaining violence or conflict in a given context. The answers may relate to how water is managed, allocated, or used. Context is crucial, as solutions will be most effective when relevant to the existing or potential conflict relating to a particular commodity resource.

In conversations about environment-related conflict, there is often an implied assumption about the militarization of these issues. Indeed, militaries are often the most appropriate agency to respond to situations posing an immediate threat to the state. There can be an expectation, for example, that the most likely response to urgent problems associated with climate change–flooding, mass human migration, impacts of severe storms–will come from military organizations, and that climate change will become "militarized"[47]. However, if flexibility and resilience is built into social, economic, infrastructural, and political systems to deal with changes in human-environment dynamics, the objective becomes more in line with securitization, not militarization. Securitization is the purview of governments, societies, planners, and policy makers. If really concerned about constructing both human and physical systems that will allow societies to be resilient in the face of unpredictable environments, or to adapt to change, the international community must be willing to engage in long-term planning, conversations about priorities, and a reconsideration of how we consume, allocate, and value environmental features ranging from food to gems to clean air and water.

Conclusion

Commodity-related conflict is likely to continue to occur in the future. However, the source and form of the conflict should not be blindly attributed to the natural resource itself thereby incorrectly imposing agency on the resource. Instead, the violence and conflict as related to the various relational aspects of a resource and across various spatial scales should be located and analyzed. This approach demands accounting for the complexity of social relations, as these relations span the local to the global scales. In this way, there will be a clearer understanding of why certain resource commodities are associated with particular kinds of conflicts, including the degrees of magnitude and fluidity, and better solutions can be applied to the conflict. Here, schemes such as Le Billon's classification of resources might be employed. Le Billon's classification is based on resource attributes like the ease of its removal (e.g. alluvial diamonds vs. offshore oil), which helps to define the actors in a given conflict (e.g. foreign-based multinational corporations or local rebels), and how violence or conflict might evolve within the deeper context of its global consumption patterns (e.g. diamonds).[48] Previous scholarly attempts have interpreted the resource-conflict relationship by simply claiming that its existence, either in abundance or scarcity, was

enough to claim a positive correlation with conflict.[49] However, by understanding the relational dimensions of conflict involving resources, the appropriate political solutions and a return to the value of politics can be applied.[50]

Although people in American society tend to have more training and experience as consumers rather than as active citizens,[51] the time to engage with these issues is now. So often, "green" solutions offer little more than options for additional consumption. Indeed, even the familiar triangular logo, "Reduce, Reuse, Recycle" was developed by the Container Corporation of America to encourage consumers to continue their consumption habits.[52] What other options for solutions to resource-related problems might there actually be, and in what – even very small – ways might consumers and citizens question the systems which shape life in the West and which connect so many places and people on the planet? Here is perhaps a starting point to address violence associated with environmental features.

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