The Militarisation and Marketisation of Nature: An Alternative Lens to 'Climate-Conflict'

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Policies addressing climate change are driving major transformations in access to global land, forests and water as they create new 'green' markets that reinforce, and attracts the financial grid and its speculators. This leads us to examine the rise of state violence and subsequent environmental policies in forests, transferring into both 'fortress' and 'participatory' conservation, enhancing this relationship with new environmental commodity markets. We go on to document how the new and intensifying commodification of the environment associated with climate change is manifest in conflicts linked to the UN-REDD+ programme, industrial tree plantations (ITPs), and land-use practices associated with conservation and biofuels. We trace conflicts to business practices associated with land acquisitions and mining practices which claim to address climate change and mitigate ecological crises. This paper thus grapples with systemic issues of the modern industrial economy and the mechanisms legitimising and advancing the militarisation and marketisation of nature.

INTRODUCTION

There is more to 'climate and security' than worrying whether people fight more in increasingly bad weather. Policies addressing climate change are driving major transformations in access to global land, forests and water as they create new commodities and markets for carbon, biofuels, biodiversity

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and climate-secure food. The emergence of these new 'climate change commodities' reinforces, and also attracts the financial grid and its speculators. What interests us in this paper is how the advent and expansion of these new commodities and their markets generate or prolong conflicts. 'Climate conflicts' become manifest in these new economic and political orders that, we argue, arise around these markets, driving 'land grabs',[1] 'water grabs'[2] and 'green grabs',[3] and which are further animated by food and energy securitisation in the face of new climatic threats.

It is our contention, then, that pressing links between climate change and security are to be perceived through these mitigation markets and the resource capture and militarisation associated with them. It is our worry that current discourses that 'securitise' climate change are actually part and parcel of these markets, and thus play a part in bringing about the very insecurities that they might purport to address. Moreover, these discourses nourish these new global 'green' markets that remain dependent on resource intensive structures and a military-industrial complex to police them. Climate Security, in the tradition of mainstream development, assumes the continuation of the industrial and financial economy as the implicit reason for mitigation and adaptation, and fails to address, or even acknowledge at times, the inherent environmental insecurity and widespread degradation built into this industrial economy. The popular and widespread belief that environmental degradation and climate change directly induces and intensifies conflict,[4] thus risks creating a self-fulfilling prophecy in a second way by extending and intensifying the existing political and industrial economic relationships dependent on growth imperatives and the subsequent consumption and usurpation of the natural environment.

To proceed, we review literatures on climate-conflict/security to render visible the violence in land frontiers. We then examine the rise of state violence and subsequent environmental policies in forests and protected areas, and how these relationships transfer into both the 'fortress' and 'participatory' conservation, that are now enhanced by 'green' or environmental commodity markets. We go on to document how the new and intensifying commodification of the environment associated with climate change is manifest in land conflicts linked to the UN-REDD+ programme, industrial tree plantations (ITPs), and land-use practices associated with conservation and 'offsetting'. We trace conflicts to business practices associated with land acquisitions and mining practices which claim to address climate change and mitigate ecological crises – expanding our analysis to embrace such Orwellian concepts as 'sustainable mining' and 'green uranium'.[5] This paper thus grapples with systemic issues of the modern industrial economy and the mechanisms legitimising and advancing the militarisation and marketisation of nature. These concerns are generally pushed to the margins, if not neglected in their entirety by the climate conflict debate, requiring immediate reflection and thoughtful action.

Climate Conflict and the Problem of Political Economy

Debates around climate conflict and security fall under the broader umbrella of 'environmental conflict' or 'environmental security', acknowledging how the natural environment can be politically destabilising. These concerns have many genealogies, and can be traced, for example, to Herman Kahn's game theory or scenario planning that confronted the threat of nuclear warfare, and which later began to shift in the 1960s and 1970s to include concerns of population growth, environmental degradation, and disaster.[6] By the 1980s national security concerns went beyond strictly military definitions and began to see the possibility of environmentally induced system collapse and resource scarcity as influences in uprisings and revolution.[7] In 1994 US Secretary of State, Warren Christopher placed environmental security next to nuclear proliferation and terrorism as a national security threat.[8] This encompassed a variety of issues: ozone depletion, species extinction, deforestation, exhaustion of renewable resources, but climate change soon became the dominant framework of overarching importance. Concerns with climate conflict bloomed when UN Secretary General Ban Ki-Moon and Jeffery Sachs in 2007 pointed to climate change as the principle cause of violence and poverty in Darfur[9]; a position later echoed by US President Obama in his 2009 Nobel Peace Prize speech.[10]

A large body of literature[11] has emerged, however, exposing the misleading premises of climate-induced conflict, emphasising 'non-environmental' drivers – the dynamic political and economic systems that manage, control, and withhold resources on small and industrial scales. A consensus is emerging that understands climate (or the weather in many cases) as not causal at all, but at best as a 'secondary' contributor.[12] Summarising this point Nils Gleditsch writes, 'It seems fair to say that so far there is not yet much evidence for climate change as an important driver of conflict'.[13] The findings of Benjaminsen et al. in the Sahel are telling. They conclude that 'land-use conflicts in the [Niger] delta region are shaped by political and economic contexts rather than climate variability', where legislation and policy favours farming interests over pastoralists' livestock corridors; where political decentralisation left power vacuums enabling opportunistic individuals to seize land and use-rights, and where government officials took to 'rent-seeking' causing distrust and resentment against government and the need for people to take matters into their own hands.[14] Coming to similar conclusions, Christopher Timura reviewing the resource scarcity hypothesis of Homer-Dixon in Mexico, Brazil and Northern Ghana found five predominate drivers of conflict: (1) political related violence, (2) ineffective bureaucratic systems of land titling, (3) 'bureaucratic redundancy' and corruption, (4) land valuation disputes, and (5) the law itself, notably land tenure law as a significant contributor to violent conflict.[15]

A limited literature on climate security has since considered the possibility of mitigation and adaptation as contributing to conflict,[16] with some

extending to acknowledge 'industrial humanity' and the global economy as the principle cause of climate-conflict.[17] However, this perspective needs to be extended further to include concerns over governing structures and in particular, critical reflection on the calls for 'good governance' as they relate to the economy. Advocacy for 'good governance' is widespread and this literature notes 'bad governance' as a recurring problem that fosters conflict, but is governance independent of the imperatives of the economy? If governance's primary focus is 'economic development processes', 'political stability',[18] and stability of a system coded with inequality, dependent on systematically degrading the natural environment, and operating on the implicit premise of continual economic growth, then the hollow nature and contradiction implicit in the notion of 'good governance' becomes clear. There are systemic problems with governance – state structures and economic systems – that as they are, inherently contradict the concerns of environmental security. This requires looking into the history of political and economic structures, specifically the history of nation-state building, colonisation, and post-colonial development and their institutional disposition towards people and forests. Examining the political control and acquisition of people and forests through domestic and international military intervention of the past can assist in locating the buried and often overlooked issues of climate-conflict today.

To consider the systemic political and economic relationships that underline land conflicts in the context of ecological and climate crises, we find it instructive to build on insights from political ecology, specifically Nancy Peluso and Peter Vandergeest's conceptualisation of 'political forests'.[19] They demonstrate the significance of violence and counterinsurgency warfare in shaping today's forests, their meanings and the appropriate conduct and relationships people have with their environments – forms of agriculture and habitation. In Europe, the United States, as well as the rest of the world, political violence preceded the enclosure and the notion of 'forests', later establishing 'territories that have been legislated, zoned, mapped, and classified as permanent forest and managed' by their designated professionals.[20] This perspective reveals the pre-existing grid of state and colonial violence and resistance as forces shaping today's 'environmental' territories (forests, national parks and protected areas), and who has access to them, which provides insight into contemporary conflicts over the land and their subsequent degradation.[21] Such works force us to recall how violence and conflicts have been characteristic of land frontiers in Europe between the seventeenth and nineteenth centuries that alienated land, established enclosures, displaced people into factories, and cumulatively supported the rise of industrial capitalism.[22]

Such land grabs have been associated with the near annihilation of Native peoples in North America,[23] Latin America[24] and large swaths of Africa[25] during colonial and post-colonial periods, and continuities

can be discerned in concerns of peoples facing UN-REDD+ today.[26] 'Environmental security problems' can be envisaged as an extension of the political-economic relations driving conflicts and insurgencies reminiscent of European enclosure conflicts, the 'Indian Wars' in North America, and the 'colonial wars' or wars of national independence in Africa and Asia. Policies that establish and support new markets for carbon sequestration and biofuels have the potential to exacerbate violence on a new frontier. In drawing on the rise of political forests, violence, and the rise of counterinsurgency warfare techniques, we challenge assumptions being made concerning the industrial economy and good governance in the climate conflict debate, demonstrating the socially constructed nature of not only forests, but also conflict, environmental usurpation and degradation. Far from addressing climate change and conflict, the market-based approaches emerging from the 1992 Rio Earth Summit and subsequent International Conventions risk intensifying global land conflict and environmental devastation, which build on the violence and history of political forests.

COUNTERINSURGENCY AT THE CONJUNCTURE OF STATE AND NATURE: POLITICAL FORESTS

Turning to histories of environmental policy to discern how violence is intrinsic to them forces us to consider the relatively recent rise of counterinsurgency violence. Counterinsurgency has been defined by David Kilcullen as 'a competition with the insurgent for the right and ability to win the hearts, minds and acquiescence of the population', with 'hearts' explained as 'persuading people their best interests are served by your success' and 'minds', 'convincing them that you can protect them, and that resisting you is pointless'.[27] Kristian Williams makes the distinction between 'hard' and 'soft' practices of counterinsurgency,[28] with 'hard' – the proverbial 'stick' – referring to overt political violence by police, military, and mercenary forces, while 'soft' – 'carrot' – refers to the positive social investments commonly referred to as 'civilian assistance', 'Development' and 'Community Development'. These programmes include 'foreign aid' to collaborating local elites, population resettlement programmes, and the provision of amenities through NGOs that build schools, clinics, water wells, and provide electricity. This approach was formalised in the Truman Doctrine (1947) and refined afterwards, assuming that economic growth (development) and internal security were intrinsic to containing the threat of communism, becoming known as the 'order-for-stability argument',[29] which despite past controversies with USAID training and funding police, military, and paramilitary forces, is now experiencing a second wave spreading 'community-based policing'.[30]

Beginning back in the seventeenth century, the emerging nation-states paid increasing attention to nature through a utilitarian and fiscal lens. James

Scott reveals how forests began to be defined within the utilitarian logic that transformed nature into 'natural resources' in order to manage and secure state revenue and development.[31] This advanced significantly with scientific management of forests developed in Germany, spreading through the rest of Europe and later the rest of the world. Its principles imposed a disciplinary-utilitarian practice, centred on monocultures, creating what could be called biopolitical forests. Its control and management homogenises and territorialises individual trees into forests just as individual people are also viewed through the lens of population demographics as a means to control and manage state resources.[32] Forest control and domestication makes them inherently political – the right to fall or stand is exercised by the state apparatus, whether by national or delegated to private timber companies. The political imposition on nature by the corporate/state creates 'forests controlled' as opposed to 'jungles wild', which makes the process of state territorialisation an important process – discursively and practical – for both people and forests.

Peluso and Vandergeest observe how a similar phenomenon developed in Asia after the Second World War, but that it required counterinsurgency warfare techniques as a means to bring people and forests under control. Against the backdrop of US foreign policy fears of widespread peasant uprisings confirmed by the Chinese Cultural Revolution (1949) counterinsurgency warfare against communist and anti-state insurgents became instrumental to demarcating and transforming forested areas.[33] They designated forestry reserves, conservation areas, and appropriate forms of agriculture, and criminalised traditional agricultural conduct and habitation in these newly established 'political forests'. Colonial policy in Asia (as in forested Africa[34]) coerced and encouraged people to relocate into 'consolidated spatial settlements' or reservations where small-holder silviculture was permitted and surplus was integrated into national and international supply chains.

Such resettlement or 'population and spatial control' programmes have long colonial roots, but advanced considerably with the 'Briggs Plan' during the British counterinsurgency war in Malaya between 1950 and 1952 and subsequent measures that were notable for balancing 'hard' and 'soft' strategies.[35] This technique displaced and moved people into grid-defined and fortified settlements that centred people around small-holder agriculture, roads, communication towers, and integrated them with military personnel. Later, such fortified and controlled villages came to be called 'Strategic Hamlets' during the United States 1962 rural pacification programme in Vietnam. This emerged from US foreign policy in the late 1940s that viewed the *peasant* as a threat, coming to symbolise the condition of 'underdevelopment', and saw their evasive villages that continually reappeared after aerial bombardment as harbouring and giving rise to communist and anti-state insurgencies. Strategic Hamlets sought to create a front in a frontless war in the jungles, integrating US troops with Vietnamese civilians, creating

colonised spaces that forced the Vietcong to attack civilians and to betray their slogan that they 'fight for the people' when assaulting US military instillations.[36] The intended purpose of these programmes had at least three general outcomes: first, to separate people from the local insurgents to prevent any support (or joining). Second, they created racial and political divisions between people, while using violent force and concessions to encourage people to collaborate with state or colonial authorities. Third and most important to this paper, they introduced new technologies that assisted in integrating rural people into national political and economic structures. This was accomplished by spreading state propaganda, imposing export-based agriculture, and structurally designing these reservations around helipads, communication towers, and roads.

'Community Development' materialised around the same time, appearing as a 'soft' and politically feasible version of the Strategic Hamlet. Pioneered by Albert Mayer, a New York real estate developer and planner in Etawah, India, in 1948, but expanded rapidly in 1952 with a $50 million 'package program' from the Ford Foundation, with the intention to provide a culturally friendly model of modernisation.[37] The logic behind both Community Development and Strategic Hamlets was that the military could not displace the village, but could instead create situations to restructure the environment to alleviate conditions of 'underdevelopment' and win the hearts and minds of villagers, introducing new technologies – water pumps, drainage techniques, generators among other devices – as a means to contain the rise of, or stifle support for insurgent and resistance movements by creating friendly spaces for state forces and areas to collect information in rebellious regions.[38] Community Development programmes became the operational blueprint for the Peace Corps in the 1960s, which created an outlet to penetrate villages spreading decentralised population and spatial control approaches across Latin America.[39] These social engineering projects became known as 'development poles' in Guatemala,[40] 'villagisation' schemes in parts of Africa,[41] and have recently been rebranded as 'Rural Cities', 'Millennium Villages, and 'Bio-Villages' as part of the Millennium Development Goals.[42] Yet what is important here is that Community Development was intimately intertwined with counterinsurgency as a means to breach village isolation and integrate 'villagers' into state politics and economy. As Peluso and Vandergeest write, 'The counterinsurgency and forest management approach was therefore not to resettle them out of forests but to find better ways of linking them to the urban state center through development projects and facilitating the expansion of permanent agriculture through road building and the promotion of upland cash crops linked to international markets'.[43] In the case of Strategic Hamlets in Vietnam, Donnell and Hicky also point out that this programme 'involves the political and social organization of inhabitants in a way that permits close surveillance of their political activities' as well as their participation in social development projects.[44]

Strategic hamlets and Community Development projects differed in their initial application in specific political contexts, size of the resettlement campaigns, as well as in their fortification and militarisation. Nevertheless, both programmes were enwrapped in development ideology, creating opportunities to introduce development experts, social scientists, and police/military personnel to monitor rural populations, establish informant networks and to worked to advance 'health' and 'safety'. This integration of civilian and military professionals into rural communities worked to encourage their participation within modern political and economic structures of newly forming nation-states that worked to dissolve or alter preexisting social and ecological relationships.

Likewise, these programmes had significant effects in shaping geographical landscapes of their respective regions. Many towns, national parks, and forests around the world exist because of these enjoined counterinsurgency and development programmes. If they did not formally 'win' the counterinsurgency campaigns in the colonial or post-colonial wars, they at the least succeeded in mitigating conflicts in favour of state and elite interests that realised state territorialisation, taxation, export-led growth, among other benefits to nation-state building. As in the context of Asia, Peluso and Vandergeest write, 'Forestry for development was not only a strategy for development or forestry but concurrently for counterinsurgency, nation-state building, and the production of national natures'.[45] Conservation practices have picked up where state building and colonialism left off – integrating and adapting the techniques of counterinsurgency warfare. As Peluso and Vandergeest continue: 'The ideologies and institutional practices associated with the conservation era's romantic notions of preserving rainforests, primary forests, and pristine forests were both preceded and enabled by this earlier, violent period in which the jungles are made into primary forests or divided between political forests and agriculture.'[46]

From the 1980s to early 2000s conservation-induced displacement is placed in the range of 10–20 million people.[47] The silent (and not-so-silent) conflicts that underline this data set have little consideration in the climate conflict debate. And yet in much of Asia, Africa, and Latin America conservation remains militarised, as forest rangers mimic the organisational structures and practices of the police and army, recruit demobilised and reserve soldiers, and use the same equipment (electronic and weaponry). This extends to shoot-to-kill policies, the rotation of units to avoid social attachment between enforcers and the enforced, and even extends to the use of helicopters and drones by conservation organisations to kill suspected 'poachers'.[48] Helicopters like model village schemes are another technology that enunciates the continued legacy of colonial counterinsurgency warfare in conservation projects.[49]

The extent to which conservation has been violent should not be underestimated. It has enabled, justified, and normalised in some cases

acts of rape, torture, and murder in and around wildlife and biodiversity conservation sites in Africa. For example, in Malawi between 1998 and 2000 there have been reports that park rangers killed over 300 people with another 325 disappeared, also including an estimate of around 250 rape cases, some involving handcuffing women found in conservation parks and gang-raping them.[50] Similar instances of violence have been documented in Kenya,[51] Botswana,[52] Zimbabwe,[53] Tanzania,[54] Namibia,[55] Uganda,[56] Liberia,[57] Cameroon,[58] Indonesia,[59] Guatemala,[60] Honduras,[61] Colombia,[62] Ecuador,[63] and Brazil[64] among others. This is a relationship encouraged and aided by the 'Northern' powers. As Neuman reminds us, 'Virtually all of the funds for military equipment in anti-poaching came from the north'.[65]

Park Rangers play the role of an occupying force – divesting populations not only of their land, but also their ability to care for it, while producing an image of a caring and responsible paramilitary force that protect national parks and 'wild' nature. The gradual shift between 'fortress conservation' associated with large-scale militarisation mentioned above and 'community' or participatory-conservation beginning in the 1980s has rarely addressed the systemic problems associated with forestry,[66] resource extraction, and what amounts to a war with the local population. Instead, this shift between fortress and participatory conservation appears akin to changes between 'hard' and 'soft' counterinsurgency strategies that advance techniques of political and economic integration amounting to a form of 'inclusionary control' over people and resources.[67] Thus when critics of participatory-conservation such as Oates[68] (1999) suggest that such approaches usually fail because they are enacted ineptly (arguing for a return to fortress conservation, reflecting tensions between conventional and counterinsurgency warfare theorists), the problems with participatory approaches can perhaps be best understood as they are part of a wider order of dispossession.[69] The histories of colonisation, counterinsurgency, and development have sought both intentionally or unintentionally to integrate rural populations in national politics and economy, often resulting in the erosion of their autonomy, self-determination, and agricultural sustainability.[70]

The concept of inclusionary control helps us to understand these practices. Appearing in the work of Foucault (1977),[71] Cohen (1985),[72] it was brought into the purview of participatory approaches by Uma Kothari, who unknowingly explains the goal of 'soft' counterinsurgency warfare, stating:

> The very act of inclusion, of being drawn in as a participant, can symbolize an exercise of power and control over an individual. . . . programmes designed to bring the excluded in often result in forms of control that are more difficult to challenge, as they reduce spaces of conflict and are relatively benign and liberal. That is, those people who have the greatest reason to challenge and confront power relations and structures are brought, or even bought, through the promise of development assistance,

into the development process in ways that disempower them to challenge
the prevailing hierarchies and inequalities in society, hence inclusionary
control and the inducement of conformity.[73]

Kothari is describing the goal of an effective counterinsurgency strategy to
integrate and subordinate populations into the political, legal, and economic
systems that establish or reaffirm regional hierarchies. The goal of govern-
ing authorities and the outcome of some participatory programmes is to
integrate people into economic structures while keeping conflict in its most
manageable phase – 'peace'.

In many instances these paramilitaries and the states that authorise them
are themselves integral to the extraction of profit from forest reservation
and conservations.[74] Confirming a strong relationship between conserva-
tion and the economy, Brockington and Duffy point out conservation as
'instrumental to capitalism's growth and reproduction'.[75] This supports what
Alice Kelly calls 'conservation by dispossession', which alludes to the nuance
of counterinsurgency violence and market mechanisms as they merge into
conservation practices and are a principle form of 'green grabbing'.[76] In
this vein, Benjaminsen and Bryceson reveal the progression of conserva-
tion practices, justified by wildlife and biodiversity conservation that move
from 'hard' violent exclusionary practices of fortress conservation to 'soft'
'community-based conservation'.[77] In Tanzania's National Parks and Marine
Park (MIMP), Benjaminsen and Bryceson document the economic relations
of conservation. First, rent-seeking state officials benefit from collecting fees,
or may own or have a share in tourist companies. Second, transnational
conservation organisations profit from 'development assistance' donors and
private fundraising through demonstrating 'successful' conservation. Third,
some commercial tourist operators benefit from the process of conservation-
induced dispossession. Important in this analysis, conservation-induced
dispossession was noted to be both gradual and violent depending on
the case and time, concluding that 'community-based conservation worked
as a key mechanism to make dispossession take place in the two cases,
allowing conservation a foothold in village lands'.[78] Community-based con-
servation works as a 'soft' practice of counterinsurgency warfare to displace
and acquire resources.

Adding to this, Daniel Münster and Ursula Münster note how 'the show-
case of successful community participation in site management may also
distract from the violence and injustice on which such projects of neoliberal-
ising conservation are built'.[79] This is not to say that participatory approaches
are not useful, as many recognising their shortcomings have also argued that
they can and have improved the lives of many.[80] But even filled to the
brim with good intentions, conservation and participatory projects can also
indirectly play into long-term strategies of enclosure, territorialisation and
primitive accumulation, which directly revolve around industrial growth and

national security concerns, which inherently instigate conflict – both low and high intensity.

This recognition of conflict and counterinsurgency associated with the reshaping of territories, nation-state building and expanding national and international commodity markets is unacknowledged in the new environment/climate-conflict debates. They thus overlook the legacy of violence in the legislation of 'nature', industrial agricultural production, and in forest and biodiversity conservation. In essence, the notion of conflict in state and mainstream academic discourse has either been sculpted surreptitiously to exclude or is blind to the everyday structural violence and conflict stemming from state and economic forces that protect and facilitate the progress of economic growth and its underside – the industrial degradation of the natural environment – climate change. This process is extended with the notion of sustainable development and concerns over climate change that use market mechanisms for mitigation – entangling ever further the practices of the industrial economy with the natural environment. This neoliberalisation of nature continues with adaptations into new conservation initiatives (UN-REDD+), Industrial Tree Plantations (ITPs), and mining that will be examined in the remaining sections of this paper.

Moreover, recognising that such dispossession of people either in fortress or participatory conservation risks establishing a 'smash and grab relationship' with their now dispossessed environments replacing a more embedded subsistence relationship with the uncertainty and vulnerability of market fluctuations. As West et al. observe, 'The policing and funding of protected areas require continued state violence'[81] and this trauma resulting from conservation violence often leaves populations fragmented, insecure, and disempowered to protect and improve their landscapes once these structures dissolve.[82] This is an important finding and a critical source of insecurity generated by conservation, which is now intensifying with the rising green economy, an issue climate security mitigation and adaptation would be wise to consider.

With Devastation Comes (Market) Opportunity: 'Green' Markets and Land Control

Environmental conflict intensifies with the further abstraction of nature as a service provider and the commodification of these services. We now probe the rise of 'green' markets, new conservation programmes such as UN-REDD+, industrial tree plantations (ITPs), and carbon and biodiversity offsetting schemes for the conflicts they can engender.

Climate change and its associated ecological crises now provide new market opportunities that undergird the growth of the modern industrial economy.[83] In 1992, climate change and biodiversity loss were recognised around the world as critical issues, and paved the way for the United

Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto protocol (1997) that introduced three market-based mechanisms to reduce greenhouse emissions: international emissions trading (IET), the clean development mechanism (CDM) and joint implementation (JI).[84] As international summits unfolded, biodiversity loss and climate change came into confluence around the notion of payment for ecosystem services (PES), carbon and biodiversity offsetting schemes. PES and associated offsetting schemes are market-based mechanisms that view the commodification and marketisation of nature as the way to stabilise or stop ecological crises – 'selling nature to save it'[85] – a 'win-win' solution. Peck and Tickell would call this a form of 'roll-out' neoliberalism that uses state intervention and regulation to create new markets and advance the neoliberalisation and marketability of nature.[86] These summits and conventions are where the economy and climate change collide to create what could be called 'climate change markets' – appropriating and adapting environmental crises into the global economy and simultaneously intensifying the neoliberalisation of nature.

PES, conservation, and offsetting schemes have the effect of intensifying utilitarian-economic outlooks towards nature creating what Sian Sullivan calls in the tradition of Karl Polanyi 'new commodity fictions'.[87] This idea of ecosystem services places the market between people and nature. The introduction of the market necessitates the abstraction and construction of nature as a quantifiable and tradable commodity. Sullivan has distinguished a four-step process to construct *nature as a 'service provider'* in order to be appropriated into global finance.[88] First, *'nature work'* constructs ecosystems as a marketable element for profit, transforming the 'earth into a corporation' that provides goods and services that can be quantified, priced, and traded.[89] The UN's (2005) Millennium Ecosystem Assessment (MEA) has played an important role in this transformation, establishing twenty-four service categories, such as provisioning services (food, water, timber, etc.), regulating services (natural environmental crisis), and supporting services (nutrient quality/capacity) among others that provide a standard measure to integrate nature into financial structures.[90] Second *'nature finance'* is the financial infrastructure of natural environmental markets consisting of merchant banks, asset management partners, environmental indexes such as Inflection Point Capital Management linking both corporate bonds and conventional bank investment to 'green markets'. Third *'nature banking'* refers to conservation and industrial tree plantations (ITP) sites as bank accounts that are integrated into carbon and biodiversity trading mechanisms. Conservation sites are managed literally as bank accounts with carbon assets integrated into financial management and investment portfolios. And finally, *'nature derivatives'* further abstract nature and conservation sites into the world of finance to include derivatives built into conservation and plantation sites that anticipate and speculate on potential profit from carbon and biodiversity reserves. This reconceptualisation and reconfiguration of nature as a banking

commodity establishes it as an economic equivalence to be valued, rendering the qualities of nature bankable and tradable with other commodities – from firearms to toilets.

These transformations alter the way environmental problematics are perceived. The life-sustaining qualities and ecological sustainability are made secondary to financial sustainability and the requirements of the global financial systems. As Sullivan eloquently puts it, a subtle transformation is afoot, in which initial aspirations of 'selling nature to save it' cede to the 'saving of nature to trade it'.[91] Both finance and ecological crisis mitigation require the acquisition, discipline, and control of land and natural resources – making this method of industrial development inherently antagonistic to the natural environment and land-based people – making conflict and pacification in some form almost inevitable. Counterinsurgency violence and industrial development become two sides of the same coin.

Both environmental crises and green market mechanisms collide into the UN's Reduced Emissions from Deforestation and Forest Degradation (REDD), and *conservation, sustainable management of forests and enhancement of forest carbon stocks* (+) – known as REDD+.[92] Becoming the largest PES programme to date, REDD+ combines aspects of fortress and community conservation, participatory techniques, and most importantly the market, attempting to place higher financial value on forests standing rather than cut down. This has caused concern as Corbera notes, REDD+ often enhances 'inequalities in income and access to resources, particularly when pro-poor management measures are not adopted, as well as create[s] economic enclosures through territorialization for biodiversity and carbon conservation'.[93] As mentioned above with community conservation, REDD-type conservation projects already have an intense and intricate history of violence, with more anticipated with the advance of REDD+.

Analysing pre-existing land conflict and inaugural REDD+ projects Tobias et al. reveals the propensity of REDD+ to generate conflict in Indonesia, Brazil and Uganda. Indonesia, the first country to administer REDD+ was also the first to experience violent conflict in December 2012, when communities living in a designated REDD+ site refused to leave, resulting in police and paramilitary forces 'destroying houses with chainsaws', which was met with counter-violence from 300 settlers taking up knives and wooden clubs against these forces.[94] In Kenya REDD+ is being adapted into long-standing and violent land conflicts between state forces and indigenous groups, appearing as an attempt to nuance, 'soften', and make politically feasible the acquisition of native land. Echoing the observations of Münster and Münster above with community conservation, REDD+ interventions build on, distract from, and solidify the past and recent evictions of the Ogiek people in the Mau Forest, which gained the attention of Amnesty International[95] and raised concerns of cultural extinction.[96] Similar evictions have also taken place in the Embobut Forest against the Sengwaer people, where violent

evictions last January in preparation for REDD+ have resulted in thousands of homes being torched, again raising concerns of ethnic cleansing.[97] Similar instances have also occurred in other parts of Africa.[98] REDD+ has also been met with resistance in Panama as the Coordinating Body of Indigenous Peoples in Panama (COONAPIP) have rejected REDD+ on the grounds of excluding indigenous groups in decision making, not offering enough funding to support their participation, and not helping to secure legal tenure of their territories.[99] These accusations were confirmed by multiple research centres and investigating bodies as they also reflect the reoccurring concerns with REDD+ that it strips native people of their land and rights[100] – excluding them further through inclusion into political and economic mechanisms a characteristic of 'soft' counterinsurgency approaches.

Industrial tree plantations (ITPs) are also increasingly problematic. ITPs have become active providers of ecosystem services in the form of 'carbon sinks', financialised as nature banks.[101] ITPs are supported within REDD+ as the UNFCCC definition of '*forests*' and '*forest management*' includes ITPs, commercial clear cuts, and the use of genetically engineered trees on the basis that you can grow 'more wood on less land'[102] Under this definition the Brazilian government plans to transform part of the Amazon forest into oil palm plantations without it counting as deforestation'.[103] Brazil, between 2000 and 2010 has expanded its ITPs from 5 to 7.1 million ha with pulp production doubling.[104] This expansion was made more profitable and politically feasible by the joint Plantar ITP company and World Bank's prototype carbon fund (PCF) – a CDM pioneering project.[105] Around the same time of these land acquisitions an estimated 360 activists, journalists, and community members were killed protesting, investigating, and fighting against the takeover of land.[106] ITP companies responding to these climate change markets are documented to stand behind global land displacements in Uganda,[107] Ecuador,[108] and also with community-based approaches in India.[109] This is in the context of new findings that tell us carbon sequestration in general has led to a net increase in carbon emissions.[110]

The violence associated with ITPs now accompanied by a 'green' financial multiplier should not be underestimated. The Asia Pulp and Paper (APP) Company in Indonesia has been in a protracted war with local peoples, hiring private militias and police to suppress resistance against displacement and forest destruction. In 2008 police and paramilitaries attacked a village, shooting tear gas and dropping incendiary bombs from a helicopter with two deaths and many injures.[111] Such conflicts must be acknowledged as part of the climate-conflict debate, because actions to mitigate climate change through market mechanisms act directly and indirectly to make politically feasible economic processes that contribute to, and spread low- and high-intensity conflict around 'natural resources'.

The climate change markets that turn territory into nature banks and trees into 'cash cows' have been enticing further dispossession and violent

conservation counterinsurgency. Megan Ybarra shows how the Guatemalan military have managed to rebrand as 'Green Forces' to protect national parks.[112] As the forests have historically been rebellious territories, but contain 'stocks' of biodiversity and carbon, this military now with the rise of the 'green' economy simultaneously accomplishes four national/environmental security objectives: (1) gains control over land and people, (2) polices drug-traffickers, (3) secures national resources, and (4) protects carbon and biodiversity offset assets (nature banks). Acknowledging the rise of carbon offsetting and flex-crop (biofuel) investment in Guatemala, Liza Grandia finds that land purchases in 2008 are in the range of $32 million, acquiring 60,000 ha. These land purchases correlate with road construction, violent displacement, and ITP companies that have applied for $6 million in carbon credits through the CDM. The ITP companies under the name 'Green Millennium' have received an estimated $3.6 million in carbon subsidies that were initially part of a programme to stimulate small-holder reforestation.[113]

The abstraction, commodification, and financialisation of nature have increased investment in land acquisition and by extension conflict, which if not directly done in the name of climate change, has indirectly benefited from the discourse. White et al. acknowledge the way climate change, agro-industrial development, natural resource extraction, neoliberal economic policies, and rapid urbanisation have been principle drivers of insecurity and land-grabbing in rural areas. They note six key trends of investment in land accumulation. This includes (1) the 'global anticipation of food insecurity', (2) 'new forms of resource extraction for fuel security', notably biofuel production and the 'fuel-feed alliance' utilising 'flex crops'[114], (3) policies and markets addressing 'new environmental imperatives', such as climate change and biodiversity mitigation, (4) large-scale development projects, (5) new financial instruments penetrating agricultural and conservation investment, and (6) regulation and incentives from international agencies such as the UN and the World Bank that are 'generating both supply and demand in the global rush for resources'.[115] In the *Harvard International Law Journal* (2011), UN Special Rapporteur on Food, Oliver de Schutter, also notes food security–induced agricultural investment, the biofuel boom, and climate change mitigation as significant causes in large-scale land acquisitions and evictions that have come to be known as 'green grabbing'.[116] De Schutter states, 'Measures adopted to mitigate climate change or for environmental conservation have created further pressures on land', stating that REDD+, 'may represent a threat to the forest-dwellers, who have only weakly recognized customary rights over the forests they depend on for their livelihoods, if the state or other actors are tempted to appropriate the benefits from carbon sequestration'.[117] Relying on data from the World Bank's annual conference, de Schutter finds that out of the 405 reviewed large-scale land investments, 'thirty-seven percent focus on food corps, twenty-one percent on industrial or cash crops, and twenty-one percent on biofuels',

while the remaining 21 percent was distributed among 'conservation and game reserves, livestock, and plantation forestry in order to capture carbon credits'.[118] In one way or another, these investments all have their roots in markets sensitive to the food insecurities associated with climate change, or in those directed at mitigating climate change and biodiversity loss.

The concern previously mentioned surrounding participatory projects and 'soft' counterinsurgency techniques reappear in these schemes. Working under the assumption of the order-for-stability argument, The RAND Corporation's National Security Research Division studied the use of 'corporate counterinsurgency' as a means to mitigate violence and promote market stability in areas where resource extraction corporations operate[119] This report highlights the importance of corporate social responsibility (CSR) and social-development initiatives as a means of reducing conflict for continuing business practices – noting that social-development eases violent conflict, even when violent actions appear unabated by CSR programmes as in the case of Royal Dutch Shell in the Niger Delta. It draws the parallel between CSR and 'soft' corporate counterinsurgency that is now being adapted and geared towards the 'green' economy with carbon, biodiversity offsets, and most importantly with the REDD+ package.[120] This tactic obscures corporate-led environmental degradation, attempts to render resistance illegitimate, and strategically divides communities, a capability previously observed in REDD+ project in the Lacandon Community Zone in Chiapas Mexico[121] In the Niger Delta, REDD+ clearly demonstrates itself as a device of social pacification designed to prolong the damaging ecological practices of oil extraction corporations and the industrial economy on the whole.

These new conflicts driven by environmental markets are obscured by questions of legality. INTERPOL and UNEP defined 'environmental crime' as 'crimes such as the illegal trade in flora and fauna; natural resource theft; over-exploitation of fishing grounds and marine resource; illegal logging and deforestation; pollution of air, water and soil'. In addition, they observe, 'new types of environmental crime, such as carbon trade and water management crime, are emerging, creating a critical threat to bio-security and contributing to climate change'.[122] Yet most of the examples above have not been found to be illegal. They are consistent with the logic of the modern industrial economy that promotes the commodification and financialisation of nature. The relationship of conservation-induced displacement, control, and marketisation is only reinforced and legitimised by militarisation and environmental policing as they facilitate and manage the legal process of industrial production and consumption of the natural environment and its climate. It is at this point, where climate change policy and mitigation practices directly and indirectly influence conflict, that climate conflict and environmental conflict merge to extend the self-fulfilling capacity of the industrial economy to degrade the environment and cause climate changing effects.

The Greening of Degradation: Offsetting and Mining

Carbon and biodiversity offsets are also used to make mining practices polit-ically feasible. In response to the poor environmental reputation of mining companies, the Global Mining Initiative (GMI) that represents transnational mining companies have sought to establish the notion of 'sustainable mining', which as Kirsch aptly notes, is a 'corporate oxymoron' that 'require[s] one to simultaneously subscribe to two contradictory beliefs'.[123] A prime example is the Rio Tinto/QMM Ilmenite Mine in Southern Madagascar that introduces an 'integrated compensation program' to the locals, establishing ecotourism 'opportunities' and teaches them 'improved agricultural productivity' tech-niques, 'improved fishing practices', forestry plantations, restoration, and conservation area management.[124] Justified by the notion that natives are the primary cause of environmental degradation, the mine penetrates the community, resettles/displaces the native population, begins the process of dredge mining, and 'improves' the area. Here biodiversity offsets are also an increasingly popular corporate policy, coincidently designed and adminis-tered by Rio Tinto/QMM who devote 'approximately USD 3 million per year to 'preserve biodiversity', claiming to 'set a "benchmark" for green mining'.[125] Not only does Rio Tinto/QMM make dredge mining 'green' and acceptable, they also plant eucalyptus plantations for carbon credits to offset mining operations and retain the corporate policy in favour of environmental secu-rity. Important to recognise with this process is that mining companies that use offsetting schemes, not only have a great public relations package – 'green' – but also increase the value of their own carbon and biodiversity conservation sites when they mine and degrade landscapes.

Global linkages driving climate change and conflict can also be seen in Sian Sullivan's analysis of 'green uranium'. Sullivan shows the connection between a 'new generation' nuclear power station in North Somerset, UK, and uranium mining in Namibia.[126] Despite the general concerns lingering over nuclear power from Chernobyl to Fukashima, both the construction of the reactor and the mining of uranium are justified with biodiversity and carbon offsets, regardless of the natural environmental devastation and the idiosyncratic measure taken to create habitats for biodiversity refugees – bar-bastelle bat (UK) and other rare species in Namibia. Offsetting has resulted in claims that the new UK power station is 'green', 'low-carbon', or 'zero carbon', which could only be justified with an abstract offsetting scheme or eliminating the plant construction and uranium mining from the environmen-tal assessment investigation.[127] Uranium mines tend to be open-pit mines, associated with health risks such as cancer, birth defects, mutations, and the production of nuclear waste, as well as 'yellow cake' tailings that retain roughly 85 percent of their original radio activity half-life for 10,000 years.[128]

Ironically, Namibia granted Exclusive Prospecting Licenses (EPL) within two National Parks – Namib-Naukluft and Dorob. The conflict associated

with land control in relation to conservation practices is made clear in the
Strategic Environmental (Impact) Assessment (SEA) that provides a loop-
hole for mining in conservation areas if an 'extraordinary mineral deposit
of *national importance* occurs in the area'[129] (emphasis added). The Etango
uranium mine will be 'constructed in Red and Yellow flag areas because
its size means that it is of greater national economic importance than the
protected landscapes'.[130] Recalling the violence and dispossession associated
with the establishment of conservation parks, the selling of them to mining
companies places conservation as an accomplice; a technique for securing
natural resources from land holders or 'insurgents' should they demon-
strate signs of resistance. The trend depicted here is noted to take place
in Botswana, Niger and Tanzania.[131] Biodiversity and carbon offsets become
devices that pacify opposition – adding to the arsenal new 'green' or 'soft'
counterinsurgency techniques. Although they formed as a means to stabilise
climate change and biodiversity loss, they now act as mechanisms that enable
path-dependent environmental devastation, morally armoring trends towards
environmental destruction. These concerns and the historical processes that
underline them appear to have escaped the climate-conflict debate. In a
sense this makes the 'green' economy and its instruments such as pay-
ment for ecosystem services (PES) supported by climate change mitigation
practices the continuation of war by ecological crisis.

Self-Fulfilling Climate-Conflict?

Debates on whether climate change plays into conflicts are facile unless
they factor in the new 'green economy' and its propensity to prolong or
rebrand existing land struggles and generate new conflict with sustainable
development schemes. These debates need to discern how the commercial
and speculative decisions taken by states, entrepreneurs and speculators –
national and international – in anticipation of climate-driven food insecurity
and in relation to the new climate change markets, play into creating further
insecurity. There are conflicts on these frontiers, but these conflicts are not
being recognised as 'climate change conflicts'. Worse, the cursory 'climate-
security' debates are strengthening efforts to further commodify nature as if
it would provide a solution to climate change and insecurities supposedly
associated directly with it.

   Climate change mitigation practices currently encourage 'sustainable'
development projects that refuse to acknowledge the systemic problems
associated with the industrial economy, and have reinforced and spawned
new conflicts over land in areas suitable for 'green' market opportunities
– carbon sequestration, biofuels, and renewable energy projects. Climate
change markets have helped rebrand and make politically feasible old and
new forms of ongoing conflicts over conservation, REDD+, industrial tree
plantations (ITP), and a variety of resource extraction projects. 'Climate

Security' concerns are popularly envisaged as mitigating conflict, but in the ways we have outlined, end up generating it, through the political and economic structures they enlist – whilst oblivious to this very fact. This disposition appears as a result of blind faith by political and economic institutions in market mechanisms, economic growth, and standards of development that naturally transform any concept of *genuine* ecological sustainability into financial sustainability.

The discussions around climate conflict need a holistic definition of conflict that include the low- and high-intensity conflicts generated by state and economic actors, 'green' or otherwise. Ban Ki-Moon, Sachs and Obama among others who assert that climate-conflict is a significant driver of conflict overlook how enclosure, territorialisation, and market strategies of accumulation by dispossession are principal drivers of climate related conflict. Moreover, environmental commodity markets reinforced by climate change mitigation agreements further intensify economic production and consumption and by extension industrial degradation of the natural environment.[132] They are also the very same drivers of natural environmental degradation that these political and economic forces claim to be addressing. In this second sense, climate conflict and climate change become a self-fulfilling prophecy – a positive feedback loop of militarisation, environmental degradation, and market production that are the principle causes for ecological crisis and climate change. Agrawal and Redford's (2009) estimation of conservation-induced displacement in the range of 10–20 million in a span of twenty years does not take into account other climate change' reinforced sustainable development projects – 'green grabbing' – that have been on the rise and are noted as a significant contributor to land acquisition and conflict.[133] The popularised concern that climate change will induce and intensify conflict – climate-conflict nexus – can be regarded as solidifying a self-fulfilling prophecy that reinforces political and economic relationships around land control, which continues the industrial processes that ferment conflict and market processes dependent on usurpation of the natural environment. These measures are reinforcing ecological crises as they give the impression of 'win-win' solutions using the market and 'saving' the environment as their justification.

The climate conflict nexus is less a nexus, but a continuum of social forces that can either improve or degrade the land. However, this continuum has largely been influenced by political and economic conflict for the control of natural resources – land and people – that has necessitated the creation of centralised political structures, the modernisation and disciplining of people into dependence on an industrial economy that strips, poisons, and degrades the natural environment to the point of climate, soil (desertification), and biodiversity crises. In the end, the climate-conflict nexus is a double-bind, resulting from the continuum of warfare, control, and industrial progress that is still waiting to be addressed with *systemic mitigation*

practices that challenge the institutions responsible as opposed to strengthening them. Another strategy that de-prioritises market mechanisms may be in order with the intention of reversing the deleterious and harmful trends of militarisation and marketisation and not the other way around.

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