

Policy persistence: REDD+ between stabilization and contestation

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Abstract

At this time of rapid global environmental change and demands for sweeping societal transformation, we call for greater scrutiny of the persistence of particular policies and ideas. In this Special Section we focus on REDD+, which for long has enjoyed remarkable global support in spite of poor outcomes and widespread criticisms. The central policy proposition of REDD+, that is, forest-based emissions reduction through market-based instruments and non-market means, are now carried forth under the new banner of Natural Climate Solutions. We examine REDD+ to understand how and why some environmental policies and ideas persist despite dubious impacts. We conceptualize policy persistence by drawing on three strands of political ecology literature - critical policy studies, assemblage studies, and political economy - that illuminate the dynamics of policy persistence in different yet complementary ways. We argue that the persistence of policies and policy ideas rests in a tentative balance of the counteracting processes of stabilization and contestation, which precipitate both intended and unintended outcomes. We show how the stabilization of REDD+ itself lends stability to broader ideas of forest-based climate change mitigation. We suggest that policy persistence is an area of political ecological research, which now calls for renewed engagement.

Keywords: Policy persistence, REDD+, climate change mitigation, Natural Climate Solutions, political ecology

Résumé

En cette période de changements environnementaux mondiaux rapides et d'exigences de transformation sociétale globale, nous appelons à un examen plus approfondi de la stabilité et de la persistance des idées et des politiques. Dans ce numéro spécial nous nous concentrons sur la REDD+, une idée qui a longtemps bénéficié d'un soutien mondial remarquable malgré des résultats médiocres et des critiques généralisées. La proposition politique centrale de la REDD+, à savoir la réduction des émissions forestières par le biais d'instruments, basés sur le marché ainsi que via des moyens non-marchand, est désormais mise en œuvre sous la nouvelle bannière de Solutions Climatiques Naturelles. Nous examinons la REDD+ pour comprendre comment et pourquoi certaines politiques et idées environnementales persistent malgré des impacts discutables. Nous conceptualisons la persistance des politiques en nous appuyant sur trois volets de la littérature en écologie politique - les études critiques des politiques, les études d'assemblage et l'économie politique. Ces trois domaines de l'écologie

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politique éclairent la dynamique de la persistance des politiques de manières différentes mais complémentaires. Nous soutenons que la persistance des politiques et des idées politiques repose sur l'équilibrage de processus contraires de stabilisation et de contestation, qui favorisent la réalisation de résultats escomptés et non escomptés. Nous explorons comment la REDD + se stabilise et, par extension, donne de la stabilité aux idées plus larges d'atténuation des changements climatiques basée sur les forêts, favorisant une écologie politique de la REDD+. Nous suggérons que la persistance des politiques est un domaine de recherche politico-écologique, qui appelle désormais à un engagement renouvelé.

Mots clés: Persistance des politiques, REDD+, atténuation du changement climatique, Solutions Climatiques Naturelles, écologie politique

Resumen

En este momento de rápido cambio ambiental a nivel global y crecientes demandas de transformación social, hacemos un llamado para realizar un mayor escrutinio a la persistencia de ciertas ideas y políticas públicas. En este número especial, nos enfocamos en REDD+, una idea que durante mucho tiempo disfrutó de un notable apoyo mundial a pesar de los malos resultados y las críticas generalizadas. La propuesta central de las políticas de REDD+, es decir, la reducción de emisiones basadas en los bosques a través de instrumentos basados en el mercado y mecanismos no relacionados con el mercado, ahora se lleva a cabo bajo el nuevo estándar de soluciones climáticas basadas en la naturaleza. Examinamos REDD+ para comprender cómo y por qué persisten algunas políticas e ideas ambientales a pesar de sus cuestionables impactos. Conceptualizamos la persistencia de políticas recurriendo a tres líneas de literatura sobre ecología política: estudios críticos de políticas, estudios de ensamblaje y economía política. Estas tres áreas de la ecología política iluminan la dinámica de la persistencia de ciertas políticas públicas de maneras diferentes pero complementarias. Argumentamos que la persistencia de ciertas políticas públicas e ideas políticas se basa en el equilibrio tentativo de los procesos contrarios de estabilización y contestación, que precipitan resultados tanto intencionados como no intencionados. Exploramos cómo REDD+ se estabiliza y, por extensión, presta estabilidad a ideas más amplias de mitigación del cambio climático basado en los bosques, promoviendo una ecología política de REDD+. Sugerimos que la persistencia de ciertas políticas es un área de investigación de ecología política, que ahora exige un compromiso renovado.

Palabras clave: Persistencia política, REDD+, mitigación del cambio climático, Soluciones Climáticas Naturales, ecología política

1. Introduction

Complex, uncertain, and rapid socio-ecological changes mark the present epoch. Planetary changes including rising mean global temperature and global losses of biodiversity and forest cover are accompanied by unusual patterns of localized events including heatwaves, droughts, wildfires, and floods, with significant impacts on human and non-human life, well-being, economies, and infrastructure. Global institutions including the Intergovernmental Panel on Climate Change – IPCC (Allen *et al.* 2019: 15) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services – IPBES (Diaz *et al.* 2019) have issued urgent calls for a transformative societal response to these crises at a historically unprecedented scale. Critical analysts, social movements, and environmental activists insist that coming to terms with the intertwined social, economic, and environmental crises we currently face demands a change to 'everything' (Klein 2014). Yet, our present is also characterized by persistent imaginations and plans for the global environment and the possibilities of continued growth in material consumption on a finite planet. These persistent imaginations and the policy interventions they authorize are not random. They are, rather, the result of constant struggle between efforts seeking to stabilize and promote them, and efforts seeking to contest, resist, and transform them. At this time of significant global environmental change and demands for sweeping societal transformation, we call for greater scrutiny of the stability and persistence of particular ideas and policies that enjoy remarkable constancy despite their poor outcomes and widespread criticisms of them.

In this Special Section, we examine REDD+, an archetype of forest-based climate change mitigation, which typifies ideas whose persistence and tentative stability warrant questioning.² REDD+ emerged in 2005 inspired by the forest-based Clean Development Mechanism (CDM) schemes and grew rapidly in scope, popularity, and ambition (Leach and Scoones 2015; Turnhout *et al.* 2017). From the outset, REDD+ was bolstered by significant global policy support and championed as an all-win scheme which could reduce carbon emissions while delivering a range of co-benefits including biodiversity protection, improved local livelihoods, improved forest governance, and investments in a green development pathway. Over US\$10 billion has been mobilized in public funds mainly from countries in the global North (Angelsen *et al.* 2017), leveraging a global carbon market estimated at €60 billion (US\$65 bn) in 2016.³ The two largest REDD+ platforms – United Nations REDD (UNREDD) and the World Bank-based Forest Carbon Partnership Facility (FCPF) – together report sixty-nine (69) countries with varying degrees of REDD+ implementation. Alongside national and subnational actors, a host of international conservation NGOs contribute to project design, carbon verification, and project implementation.

Meanwhile on the ground, realities belie the promises of REDD+. The scheme has so far failed to arrest global forest loss and nothing indicates that this will change in the near future (Austin *et al.* 2017; Curtis *et al.* 2018; see also Asiyanbi and Massarella 2020). Neither have co-benefits of improved livelihoods for communities, better forest governance, green development finance, and improved biodiversity materialized – at least not nearly at the scale promised (Angelsen *et al.* 2017; Duchelle *et al.* 2018; Fletcher *et al.* 2016; Luttrell *et al.* 2018; Milne *et al.* 2019). Instead, critical accounts of specific REDD+ cases and multi-country reviews point to a growing catalogue of conflict, rights abuses, and new or worsened forms of marginalization (Asiyanbi 2016; Bastakoti and Davidsen, 2016; Chomba *et al.* 2016; Howson 2018; Leach and Scoones 2015; Milne and Mahanty 2019; Milne *et al.* 2019; Nuesiri 2017; Samndong 2018). Others report mounting contestation of REDD+ processes by indigenous peoples and local communities (Asiyanbi *et al.* 2019; Benjaminsen 2014; Osborne 2018; Svarstad and Benjaminsen 2017; Setyowati 2020). Indeed, REDD+ has faced relentless resistance at national and international levels, including protest marches at international events, critical commentary, witnesses challenging national policy processes, and internationally-mobilized protest letters to major institutions including the World Bank's FCPF, the Green Climate Fund, and California's Tropical Forest Standard.⁴

Despite the criticisms, contestations, and resistance, REDD+ continues to persist, contributing to the stabilization of a broader notion of forest-based climate mitigation.⁵ Global REDD+ proponents based at the United Nations Framework Convention on Climate Change (UNFCCC), finance institutions, think tanks, and development aid agencies across 'the global North' continue to celebrate 'results', 'progress', and 'success' of REDD+ (Svarstad and Benjaminsen 2017; Seymour and Busch 2016; Viard-Cr  tat 2016). And the general promise of forest-based emissions reductions was recently re-launched under buzzwords like 'natural', 'cheap', 'fast' and 'effective', appearing to completely ignore the failures of REDD+ and similar conservation fads (Bastin *et al.* 2019; Griscom *et al.* 2017). We now see a whole array of forest-based carbon sequestration and/or offsetting initiatives – from the global aviation industry to the global commodity supply chain and oil corporations — all powered by the promise of forest-based emissions reduction.⁶ These dynamics demand that we ask how the

² Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.

³ See Global Carbon Market Value Forecast. Available at: <https://www.statista.com/statistics/223516/global-carbon-market-value-forecast/>

⁴ See detailed accounts of various protest letters and critical reports on the website *REDD Monitor*. Available at <https://redd-monitor.org/>

⁵ We recognize that REDD+, since it was first proposed by the Coalition for Rainforest Nations in 2005 and was formally adopted at the level of the UN in 2007, has only been around for about a decade. However, we consider REDD+ as a flagship for the wider forest-based climate strategy which not only goes back over a few decades but is also being reformulated into a range of new initiatives that seek to put "nature" at the center of climate action and continued economic growth.

⁶ For instance, Nature4climate is the latest global initiative that brings together development agencies and international conservation NGOs to champion anew climate solutions based on nature, including forests. Forest offsets form a significant part of the voluntary carbon offsetting schemes of many airlines, and the first industry wide emission reduction strategy of the aviation industry, CORSIA includes REDD+ and other forest-based offsets. Oil majors including Equinor, Eni, Shell and Total and are adopting and promoting forest-based emissions reduction solutions. (Equinor: *'Prime Minister Erna Solberg's*

promises of REDD+ have persisted in spite of failures and contestations? What does this mean for global efforts to address climate change?

Questions about the endurance of particular environmental policies and associated ideas are not new in political ecology. Political ecologists have scrutinized persistent forest and soil degradation narratives and associated policies as pertaining to African landscapes (Blaikie 1989; Fortmann 1989; Fairhead and Leach 1995; Leach and Mearns 1996), as well as narratives of the promises of particular development visions and policies (Blaikie 2006; Escobar 1995; Lohmann 1998; Roe 1991). What *is* new is the context within which we pose these questions. It is one marked by complex environmental crises, with urgent imperatives for change in contemporary socio-economic and political systems underpinning human-environment relations.⁷ Moreover, the urgency of these current environmental crises often serves to justify the promotion and perpetuation of deeply problematic 'solutions' and policies, some of which political ecologists and other critical scholars have critically engaged (e.g. Büscher *et al.* 2017 on the half-Earth idea; Duffy *et al.* 2019 on the militarization of conservation). This context makes a renewed engagement with **policy persistence** critical for political ecology more generally. Moreover, we draw together a set of well-established explanatory frameworks in political ecology, which have hitherto not been explicitly mobilized towards understanding the specific concern of policy persistence. The question of policy persistence, we suggest, constitutes part of what Bryant (2015: 20) describes as "new directions in existing conversations" in political ecology.

We delineate policy persistence as the *continued economic and political support to a policy in the face of overwhelming evidence that it is failing to achieve its stated objectives*. We approach the question of policy persistence by drawing on three overlapping strands of political ecology literature: critical policy studies, assemblage studies, and political economy. We argue that policy persistence is a tentative overarching effect of the struggle between processes of stabilization that constantly seek to reproduce and reinvigorate policy, and processes of contestation that seek to challenge and destabilize it. These counteracting processes manifest as power-laden and unstable arrangements of actors, practices, tools, strategies, and discourses, which, beneath the appearance of overall stability, are constantly in flux. Stability is thus not fully determined by either the forces of stabilization or those of contestation, but by the interaction of both – an interaction which precipitates intended and unintended outcomes. As such, understanding stability directs attention to the ways that stabilizing forces as well as contesting forces are diversely constituted, sustained, and continually interact.

The understanding of policy persistence we develop here recognizes the centrality of knowledge economies and the importance of scale in the ways that environmental policies are formulated, deployed, evaluated, and sustained. A policy attains dominance and endures partly through competitive processes that set it apart from alternative policies and render it attractive to a wide range of supporters. Linked to these dynamics are the unequal discursive and material power relations by which a policy is made to serve particular interests at the expense of others. As such, policy persistence is often underpinned by specific material and discursive political economies. However, persistence must also be understood in terms of the role of a specific policy within the broader capitalist political economy. Finally, policy persistence can hardly be fully accounted for without a careful consideration of how taken-for-granted constitutive elements of policy came into being and became efficacious. Important here is not just active human strategy. Rather, persistence is an emergent effect of the coming together of a range of human and non-human elements that manifest in a complex assemblage whose connections and disconnections human actors seek to manage.

speech at the Equinor Autumn conference in Oslo, dated 20 November 2018. Available at <https://www.regjeringen.no/en/aktuelt/equinor-autumn-conference/id2619687/>; Shell: 'Shell invests in nature as part of broad drive to tackle CO2 emissions' dated 8 April, 2019. Available at <https://www.shell.com/media/news-and-media-releases/2019/shell-invests-in-nature-to-tackle-co2-emissions.html>; Eni: 'Eni and forest conservation projects: An important element of emissions mitigation' Available at: https://www.eni.com/en_IT/sustainability/decarbonization/forest-protection-conservation-page; and Total: 'Total will invest in the forests' Available at: <https://bfmbusiness.bfmtv.com/entreprise/total-va-investir-dans-les-forets-1726673.html>

⁷ Recent articulations of these crises (and solutions to them) have been framed overwhelmingly in global terms, reflecting widespread material intensification across much of the globe since the 1950s (as seen, for instance, in the basis for the Planetary Boundary agenda), the rise of new actors and networks, and the explosion of powerful new technologies and techniques for rendering environmental change visible in new ways.

Mobilizing this understanding of policy persistence, we revisit the trajectory of REDD+, drawing on the growing body of REDD+-related political ecology research, as well as the five articles in this Special Section, each of which illustrate different facets of the processes of REDD+ stabilization and contestation. Based on a detailed account of REDD+ and development in Colombia's post-conflict transition and peacebuilding, Torsten Krause (2020) observes the paradoxical embrace of both REDD+ and extractivism in the country, illustrating the thinly veiled contradiction inherent to REDD+ as a spatio-temporal fix for the climate crisis. Franziska Müller (2020) analyzes Norwegian REDD+ education strategies and tools, showing how they draw upon powerful repertoires of depoliticization and repoliticization that seek to summon local communities, and thereby lend stability to the fragile global articulation of REDD+. Ramcilovic-Suominen and Nathan (2020), in their analysis of the translation of REDD+ across governance levels in Laos, reveal how the dominance of the techno-managerialist discourse of REDD+ elites is central to understanding not only the nature of REDD+ in Laos but also the scheme's tentative persistence. Setyowati's penetrating analysis of efforts by REDD+ proponents to enlist local communities in Aceh, Indonesia (2020) unveils the liminal spaces of engagement where communities encounter REDD+ not as an effortlessly hegemonic project but as a negotiated, contested, and historically contingent process co-constituted as much by community resistance as other local subjectivities. These include what she describes as "creative accommodation" and "skillful maneuvers." By situating REDD+ within broader development and conservation debates, Asiyanbi and Massarella draw on REDD+ cases from Nigeria and Tanzania to demonstrate the cross-scalar process by which REDD+ cultivates exemplary miniatures or 'models' that serve not only to sell REDD+ as a 'successful' scheme but also to legitimize its continuity in spite of its messy outcomes and failure to bring about meaningful change at scale.

These cases bring insights from diverse geographical settings. They draw on a range of theoretical resources, including governmentality (Müller 2020; Setyowati 2020), Science and Technology Studies (Ramcilovic-Suominen and Nathan 2020), and critical policy studies and political economy (Asiyanbi and Massarella 2020; Krause 2020). Together, this collection illustrates how the persistence of REDD+ is the result of dispersed counteracting forces, for instance, the deliberate policy pursuit of government in Colombia, the maneuverings of local groups in Indonesia, the technical empowerment plans of donors as in the example of Norway, and the cross-scalar implementation of REDD+ in Laos. While the individual articles examine various manifestations of REDD+ in very different places and processes, they also illustrate processes of stabilization and contestation to varying degrees. For instance, while Müller, Ramcilovic-Suominen and Nathan, and Asiyanbi and Massarella show the optimism and will to improve that suffuses stabilization processes, the intricacies and impacts of crisis, contradictions, contestation and resistance come to the fore in the articles by Setyowati and Krause.

These insights and perspectives illustrate how the persistence of REDD+ can be partly understood through its framing as a market-based scheme that aligns with the dominant neoliberal approach to environmental governance. Here REDD+ has served as a spatio-temporal fix and thus contributed to expanding the frontiers of neoliberal capitalism, by enabling, as opposed to arresting, further extractivism and forest intensive investments. Yet, the scheme has also from the outset been embedded into longstanding practices of international development with its own political economy, reflecting what some have referred to as the 'aidification' of REDD+. REDD+'s malleable character, ambiguous technical profile, and varied manifestations have contributed to academic contestation and confusion, allowing researchers to attribute (or not) different outcomes to the scheme. Nevertheless, its journey has been shaped by a highly uneven geography of knowledge production and a discursive terrain marked by claims and counter-claims about the REDD+ ideal, its reality, its effects, and its future. At this point, the reinvention of forest-based climate change mitigation as part of Natural Climate Solutions, and the fresh optimisms sparked by new powerful interests, new technologies and novel articulations appear to breathe new life into the concept of REDD+ – promising of further persistence. However, these new promises are also met with a growing chorus of critical voices, contestations, and outright resistance.

In what follows, we develop key conceptual explanations for understanding policy persistence in political ecology, before turning to an elaboration of REDD+ under the headings *Development policy as usual*, *Market-based mirage*, *Contentious carbon assemblages*, and *Knowledge politics*. We conclude by reflecting on the emerging dynamics and the future of REDD+ and forest-based climate change mitigation broadly.

2. A political ecology of policy persistence

So, how and why do policies and policy ideas persist? For public policy scholars, policy failure is typically comprehended as the result of factors including over-reaching ambitions, lack of information, non-anticipation of implementation risks, and principal-agent issues. For them, policy persistence despite evidence of failure arises from "ineffective or inappropriate policy monitoring and/or feedback processes and structures" (Howlett *et al.* 2015: 213). Implicitly, this perspective assumes that policies necessarily address the problems for which they have been designed. A political ecology view of policy makes no such *a priori* assumption, but rather asks: what does policy *do*? In the following, we draw out insights for how to understand policy persistence from the perspective of political ecology and related studies within the broad fields of critical policy studies, political economy, and assemblage science studies.

A key argument forwarded by critical policy studies is that policy processes and their underlying narratives are embedded in competitive institutional settings (Mosse 2004; Roe 1991). In this view, policies are conceptualized as discursive commodities that are marketed by proponents to attract support and resources through promises of change and improvement (Büscher 2014; Lund *et al.* 2017; Rutt *et al.* 2018). Through processes that seek ever-wider policy buy-in from multiple actors with diverse, even seemingly incompatible sets of interests, legitimacy for action is created (Mosse 2004). Enrollment and alignment of interests across actor groups requires a great deal of work, including the careful crafting of policy texts, which "while preserving the appearance of technical planning, accomplish the social tasks of legitimization, persuasion and enrolment, becoming richly encoded with institutional and individual interests and ambitions and optimism" (Mosse 2004: 21). This discursive work combines with practical simplification strategies that seek to rid policy of contradictions, present an appearance of consensus, and foreground a compelling, marketable representation of policy and underlying narratives (Blaikie 2006; Büscher 2013; Li 2016; Roe 1991). The enrollment of actors, in turn, helps to constitute the weight of coalition needed to sustain policy regardless of outcomes in practice (Mosse 2004; Li 2016). And policy outcomes that fall short of expectations are turned into justifications for policy renewal and further promises of improvement (Li 2007).

Critical policy studies also emphasize the knowledge economy and the discursive power that underpins policy persistence. The production of policy propositions, progress reports and evaluations capable of convincing policy actors, entails the valorization of particular kinds of knowledge and a careful sifting, suppression, and sometimes co-option of dissenting views (Mathews 2005). In this process of constituting and perpetuating dominant policies, other policies and constitutive knowledges are often rendered invisible. Consequently, proponents of hegemonic policies often come to deny themselves access to the rich world of knowledge outside of their narrow gaze (Lohmann 1998, 2008). The resulting production of ignorance becomes central to understanding the tentative dominance and persistence of particular policies (Leach and Fairhead 2000). For instance, in colonial and postcolonial conservation landscapes, the practical knowledge of local populations was variously ignored, dismissed, and sometimes vilified (Leach and Fairhead 2000; Murombedzi 2003; Sungusia *et al.* 2020). Knowledge politics is also important for actors challenging the strategies of powerful actors. For instance, Neimark shows in the case of bioprospecting in Madagascar how scientists not only decidedly ignore local ethnobotanical knowledge, but also how local ethnobotanists also actively deploy a range of subversive strategies including feigning ignorance in order to fend off exploitation of sacred local knowledge by powerful outsiders (2012). To be sure, this tendency to be selective about knowledge also exists within critical scholarship and practice, if often dictated by normative commitment to social justice and a search for more desirable socio-ecological futures. However, discursive power relations mean that proponents of hegemonic policies often leverage greater economic and political powers that allow them to not only define, but also enforce, the hegemony of some forms of knowledge over others.

Such unequal relations of discursive power and knowledge often go hand-in-hand with more material dimensions of power, manifest in political-economic relations, and the concomitant reconstitution of socio-ecologies (Escobar 2011; Castree and Braun 1998). We see this in the overall consensus among mainstream institutions of global environmental governance that continued growth in material consumption can and should be pursued by all – including those whose current consumption patterns grossly overstep (their share of) the 'allowable' global ecological footprint - through environmental amelioration, of which REDD+ is an example (Cavanagh and Benjaminsen 2017; Fairhead *et al.* 2012; McAfee 2016). As such, the vast majority of

international environmental institutions work within the logics of global neoliberal capitalism, with its class-reinforcing policies that position global elites as those who accumulate, while accepting, knowingly or not, that others be dispossessed (Bigger *et al.* 2018; Fletcher *et al.* 2016; cf. Harvey 2007). Accordingly, the knowledge and perspectives that flow from institutions of global environmental governance – be they private, governmental or civil society – tend to perpetuate narratives that align with the needs of capital, thus limiting the space for critique and radical alternatives (see Ramcilovic-Suominen and Nathan 2020)

Fundamental here is the core political ecology stance that environmental policies are generally embedded within wider political-economic structures, and in this case, one dominated by neoliberal capitalism with its dynamics of accumulation by dispossession and systematic exploitation of people and environments (Robbins 2011). In this vein, Ekers and Prudham (2015) have suggested that capitalism is reproduced increasingly "through reconfigurations of socio-natural relationships and, more specifically, through the production of nature [via] dynamics [that] can play out in multiple and contradictory ways" (p. 2441). Carton (2019) observes how recent decarbonization strategies represent a temporal socio-ecological fix enabled in part by scientific modeling, constituting part of a wider political economy of delay in climate change mitigation. A theme that runs across studies on socio-ecological fixes is the sheer diversity of means through which capital seeks to entrain nature in addressing recurrent crises. Yet, the socio-ecological fixes of capital are not without tensions and contradictions (McCarthy 2015). Rather, they are also productive of "various openings and/or failures", ridden with on-going tensions, contradictions and struggles (Ekers and Prudham 2015: 2442).

Furthermore, political ecologists have shown that as environmental policies "land somewhere" and are re-embedded in particular material and social contexts (Li 2014: 597), the question of scale (that is, both spatial extent and socioeconomic hierarchy) becomes immediately important. Settling policy in place means that the scale of policy action itself becomes an active strategy of power, one which shapes and is shaped by ecological processes (Cohen and Bakker 2014; Neumann 2009). For Ramutsindela and Noe (2015: 501), such a strategy may manifest as a form of "scalar thickening", in which a particular scale is privileged and made to play "a significant role within a dense network of scales in achieving a clearly defined goal." Yet this strategic, tentative privileging of specific scales and the ways that scale may challenge, co-constitute, de-emphasize, or sacrifice policy presence at other scales are all reflections of power. As Ramcilovic-Suominen and Nathan (2020) show in the case of REDD+ in Laos, different interpretations and operationalization of policy prevail at different governance scales, each constituted by unique imbrications of discourses, actors, resources, values, interests, and power (cf. Arhin 2017). And diverse scalar strategies are central not only for those who seek to sustain policy but also for those who seek to challenge it (Rocheleau 2015; Zimmerer 2000).

Also remarkable is the widely noted centrality of scale to the demonstration of policy success within the development industry. Often, claims of policy success rely on articulations with miniaturized exemplars that reflect small-scale implementation, carefully shielded from the larger social setting through the amassment of resources – part of the process that Asiyanbi and Massarella (2020) describe as "model making." Such sites become the breeding ground for "success stories" that can be made to travel elsewhere (Blaikie 2006; Wilson 2014), and such stories may, in turn, serve to bracket off wider and more varied accounts of policy outcomes (Massarella *et al.* 2018). 'Evidence' and success stories so produced may travel further in time and space to support scalar thickening and stabilization elsewhere (Büscher 2014). Political ecologists have here found inspiration from science studies to examine the connections between the production of knowledge by scientists, its circulation in networks, and application by professionals (Goldman *et al.* 2011). Productive engagements include the conceptualization of conservation policies and associated ideas as boundary objects (Goldman 2009). There are also critical appraisals of the establishment and reproduction of social hierarchies through the circulation and validation of certain forms of knowledge by educational and policy institutions (Sungusia 2018; Lave 2012).

Meanwhile, political ecologists have also been inspired by the wider field of assemblage studies to critically examine how apparently pre-given and stable constitutive elements of policy are, in fact, constructed and vigorously defended. Li (2014), for instance, illustrates the analytical purchase of this perspective in an analysis of investable land as an assembled resource. She shows that what appears unproblematically as land that is available for large-scale investments has entailed the right disposal of a multiplicity of things and sustained

effort to achieve "sufficient stability." This meant, among other things, assembling data on land that can be appraised from afar, pre-empting and neutralizing contestation by fostering fuzzy land ownership arrangements, instrumentalizing local consent, and enrolling local actors through promises of desperately needed infrastructure. It is partly through the capacity of an assemblage to "successfully enroll and mobilize persons, procedures and artefacts in the pursuit of its goals" that it achieves stability (Rose and Miller 1992: 183). This also includes practices that seek to anchor a policy to existing policies and ideals (Jiao and Boons 2017). For instance, REDD+ itself is as an outcrop of Payments of Environmental Services and part of a wider and longer-established neoliberal environmental governance approach (Büscher *et al.* 2014). By opening up policy in terms of its constitutive assemblage, analysts may render "its made-up character available for critical reflection" (Li 2014: 590), allowing a wider group of people to ask the fundamental, political question about how things might have been different, alongside the related questions of how things came to be and continue to remain the way they were.

Yet these processes that seek to sustain policy often co-exist with contestations at different sites from within and outside the policy circle. For instance, through long-term and reflexive engagement with, and studies of, people, local environments, and cross-scalar connections, political ecology scholars have produced representations of on-the-ground realities that often nuance or contradict those circulated by policy proponents (Benjaminson and Ba 2019; Fairhead and Scoones 2005; Li 2007). McAfee and Shapiro (2010) show how peasant groups employ strategies that challenge and rework policies to their advantage in relation to Payment for Ecosystem Services schemes in Mexico. Similarly, across cases in Tanzania, Indonesia and Nigeria respectively, Gardner (2016), Astuti and McGregor (2017) and Asiyanbi *et al.* (2019) show how local groups not only challenge unfavorable policies but how they strategically align with and wield particular policies in their struggle against others whom they judge to be more potent threats. In short, policy persistence hangs in the balance of such friction between, on the one hand, processes of promotion and stabilization and, on the other, processes of contestation and resistance that seek to rework, transform, or discard policy altogether.

Our brief review of political ecology and related studies within the fields of critical policy studies, political economy, and assemblage studies shows important, complementary insights, but also tensions (cf. Lave, 2013). For instance, the subordination of scale to networks in assemblage thinking contrasts sharply with the amplification of scale in critical policy studies and political economy. Tensions notwithstanding, together, these perspectives provide greater insight into the question of policy persistence than each would provide in isolation. In approaching policy persistence, we emphasize the distinctively marketable representation of policy within the context of the development industry, with the associated economy of knowledge, representation and scale. We note that when policy and policy ideas 'land' in locales, they manifest as thoroughly made-up assemblages, comprised of broad range of elements, the alignment and overall stability of which warrant constant scrutiny. Yet, we see such variously dispersed assemblages as necessarily embedded within a wider political-economic structure, one currently dominated by neoliberal capitalism. We see an analytically inspiring confluence across the critical study of policy and its political work, the examination of the assemblage that is created when policy (in its discursive form) 'lands somewhere' and becomes re-embedded in a social context that accommodates, negotiates and/or resists aspects of policy, and the more structural political economy perspective, which trains our attention to the wider material processes and relations of which policy is part. In what follows, we open REDD+ to the conceptual themes developed above. We approach REDD+ as a globally dispatched policy idea, one around which a global assemblage has emerged and an archetype of an environmental scheme through which political-economic structures of neoliberal capitalism is being reproduced and stabilized.

3. The persistence of REDD+

In this section we mobilize explanations and perspectives from critical policy studies, political economy and assemblage studies to examine the journey of REDD+ over the past decade and half. We draw on the large body of research on REDD+ and the contributions to the Special Section to illustrate the purchase of these perspectives in developing an understanding of policy persistence.

Development policy as usual?

REDD+ emerged within the competitive historical setting of a succession of conservation fads (Redford *et al.* 2013; Lund *et al.* 2017), within a broader development landscape of resource extractivism (Fletcher *et al.* 2016), and as one among a panoply of climate change mitigation actions (Newell and Paterson 2010). True to its neoliberal provenance, the scheme was touted as capable of delivering multiple-win outcomes, including "co-benefits" of improved conservation and governance of forests and biodiversity, improved local livelihoods, and green development finance for governments in the global South. The depoliticizing, win-win discourse of REDD+, and the efforts put into marketing it, have had the effect of summoning and aligning a wide range of actors, even some that might be regarded as 'unlikely bedfellows' (cf. Fairhead *et al.* 2012). As critical policy scholars note, it is such an alignment of interests and actors around policy ideas, which not only lends them the appearance of 'success', but also legitimacy and tentative durability (see Ramcilovic-Suominen and Nathan 2020; Asiyanbi and Massarella 2020).

The marketing of REDD+ emphasized its qualities as 'natural', 'cheap', and 'quick.' These buzzwords remain in use today irrespective of the compelling evidence that the reality of REDD+ broadly belies them.⁸ REDD+ proponents have gone further to brand and market specific carbon offsets produced from particular projects to make them even more attractive to finance in a sluggish voluntary carbon market, through spectacular claims of ecological and developmental co-benefits, part of what Paterson and Stripple (2012) called "boutique carbon." Carton and Andersson (2017) showed in western Uganda how project proponents sought to market carbon offsets, which are claimed to represent a unique brand because they were based on native tree species. Benjaminsen and Kaarhus (2018) described a similar branding and marketing of REDD+ offsets in Zanzibar.

The persistence of REDD+ stems partly from how it has been embedded within the international development industry, characterized by deeply entrenched financial, technical and political powers, which shape a political economy of international development marked by profound asymmetries between the global North and South. Perhaps reflecting adaptation to this reality, the normative idea of what REDD+ should be has morphed from that of a global market for carbon incentivizing forest conservation, to a 'development as usual' scenario where donors (mainly global North governments) through multilateral and bilateral aid agencies, fund forest management and conservation activities, and a great deal of REDD+ research. Angelsen (2017) describes this shift as the 'aidification' of REDD+. This shift has implied a large role for traditional aid actors including development banks (e.g. World Bank, African Development Bank, etc), bilateral donors, and development consultants and NGOs in the rollout of REDD+.

The 'aidification' of REDD+ has also been accompanied by the extravagancies that tend to track with the international development industry. For instance, REDD+ related disbursements in the first decade of the World Bank's FCPF show that more funds have gone into the administrative machinery of the institution than have been spent on actual REDD+ projects in developing countries. Annual administrative costs ranged between 57-88% of the total annual disbursement of REDD+ funds over the period 2009-2015.⁹ These figures are indicative of the remarkable biases in how the development industry distributes benefits and risks across the 'partners' it engages. While development professionals remain insulated from project-related risks, and receive handsome pay both when engaging and walking away from projects, forest-dependent communities are positioned so as to shoulder the livelihoods and financial risks associated with project success and failure (Chomba *et al.* 2016; Lund *et al.* 2017; Massarella *et al.* 2018). This pattern reflects an all-too-familiar feature of the political economy of international development.

If REDD+ persists because it serves particular interests within the development industry, then important questions need to be asked about how REDD+ funding and other resources continue to reinforce and bolster the

⁸ Each of these assumptions have been abundantly demonstrated as unfounded in REDD+. REDD+ isn't 'natural', since tropical rainforests have been and continue to be socially produced partly through indigenous use and stewardship, local cultural and forest management systems, and forest-based economies that extend from the local to the global level (see Pritchard and Brockington 2019). Even if we took 'costs' in a narrow and conservative sense to mean transaction costs for REDD+, these have been so high as to make full rollout of REDD+ prohibitive in many cases. And even proponents of REDD+ now admit that it is not the quick fix that was anticipated.

⁹ Forest Carbon Partnership Facility, Annual Report, 2017. Available at <https://www.forestcarbonpartnership.org/>

powers of multilateral banks and international NGOs. This is even more important in the light of evidence that subnational and local governments and NGOs in REDD+ countries are ironically the ones bearing the costs of REDD+ (Luttrell *et al.* 2018). If, as scholars note, strong neocolonial rationalities and tropes underpin North-South carbon offsetting, which cast the forests and lands of the global South as cheap and disposable carbon sinks where development aspirations can be sacrificed for increased pollution and economic growth in the global North (Fairhead *et al.* 2012; Lohmann 2008; and Bachram 2004), then these rationalities also manifest in the unequal relations of economic and technical power constituted in REDD+.

The market-based mirage

Seen from the perspective of political economy, the persistence of REDD+ is linked in part to its initial conceptualization as a market-based scheme. This tapped into the optimism and promises of neoliberal environmental governance, in which market-oriented principles and practices are endorsed in order to marry environmental sustainability with the imperatives of capitalist growth and development (Cavanagh and Benjaminsen 2017; McAfee 2016). REDD+ is an outcrop of such market enthusiasm, which, in relation to climate change mitigation, manifests most strongly in the much sought-after global cap-and-trade system. Generally, global North governments and corporate interests continue to champion carbon offsetting in the global South partly to legitimize continued expansion of production, consumption and capital accumulation in the former. An example is Norway's commitment to REDD+ which legitimizes its continued fossil fuel production (Svarstad and Benjaminsen 2017). Another is the coming together of actors including the Church of Sweden, BHP Billiton, Conservation International, International Finance Corporation, and AXA Investment Managers to bankroll REDD+ and REDD+-linked projects in Kasigau, Kenya.¹⁰

These economic dynamics, which increasingly expand the reach of international capital to the forest frontiers in the global South, mean that the 'aidification' of REDD+ has not done away with the fundamental neoliberal underpinnings of the scheme. Rather, REDD+ donor funds increasingly seek to promote private control of REDD+ projects, financialization, and supposedly complementary (according to financial profit motive, at least) industrial investments in mineral resources, plantation forestry and climate smart agriculture.¹¹ For instance, the US\$350 million Biocarbon Fund financed by the governments of Germany, Norway, and the UK, stipulates three criteria in selecting beneficiary countries that all directly relate to capacity for private investment:

- 1) "capacity for large-scale programs";
- 2) "enabling environment" understood as "strength of governance, private sector engagement, and in-country green growth initiatives";
- 3) "potential of climate-smart agriculture" (Biocarbon Fund 2019).¹²

In shortlisting countries for its Carbon Fund phase, the FCPF has also expressed clear preference for REDD+ countries with a significant private sector engagement or potential for private investment, citing "private sector engagement" as one of its key strategic foci. Indeed, there are recent but sluggish moves to financialize REDD+ projects, pushed by alliances of multilateral institutions and private investors. For instance, in 2017, a US\$128 million REDD+ bond was jointly floated by the International Finance Corporation (IFC), BHP Billiton – the

¹⁰ 'REDD inequity writ large: €4.4 million for Althelia Climate Fund in "management fees", while villagers in Kenya ask "How is the carbon benefiting me?"' REDD-Monitor, 9 March, 2017. Available at: <https://redd-monitor.org/2017/03/09/redd-inequity-writ-large-e4-4-million-for-althelia-climate-fund-in-management-fees-while-villagers-in-kenya-ask-how-is-the-carbon-benefiting-me/>

¹¹ While even the critiques of REDD+ sometimes counterpose REDD+ to other large-scale land investments which REDD+ payments need to be high enough to disincentivize, in reality, REDD+ is in fact meant to facilitate such investments. Hence their common logic of reconciling capitalist growth with environmental amelioration, but with the consequence of land dispossession where 'green' grabbing is effectively an extension of land grabbing in general.

¹² 'Programs' The BioCarbon Fund. Available at: <https://www.biocarbonfund-isfl.org/programs>

Anglo-Australian multinational mining and petroleum company – and Conservation International, to support a REDD+ project in Kenya. Moreover, around 70% of all REDD+ projects ever handled by the third-party verification and certification organization, Verra, involve private sector proponents and for-profit ventures and NGOs. Private REDD+ investments in Peru and Kenya include diverse portfolios that combine carbon offsets with investments in timber and agriculture. In countries like the Democratic Republic of Congo (DRC) and Tanzania, NGOs and international for-profit ventures are in almost exclusive control of REDD+ projects and programmes.

In reality, therefore, REDD+ appears to facilitate a wide range of private investments and commercial interests in land and other resources at the forest frontiers. Contrary to a strict opposition of REDD+ aidification to commodification, and the assumption that carbon-based conservation seeks to disincentivize commercial investments in agriculture and mineral resources at least in principle (see Fletcher *et al.* 2016; Angelsen *et al.* 2017), REDD+ actually blurs the divide between the private and public spheres further. Rather than supplant them, REDD+ exists alongside the extractivist and growth-oriented policies that fuel the drivers of the very processes of deforestation and forest degradation that it was supposed to abate (see Krause 2020). As such, the specific political economy spawned by REDD+, when traced across its entire web of actors, processes, rationalities and impacts at various scales, lends itself to the commodification argument (Fletcher *et al.* 2016; Fletcher and Büscher 2017). Forest carbon sequestration capacity is being turned, if sluggishly, into a (fictitious) commodity that gets inserted into circuits of capital. Yet, it also reflects logics which are amenable to an argument that it is "climate rent" (Felli 2014), insofar as the forest carbon economy rests on appropriating the naturally-existing capacities of forests. In the context of the global political economy, then, REDD+ indeed looks more and more like a global-scale socio-ecological fix for a capitalist system in crisis (Carton 2019). The 'fix' presented by REDD+ is constituted at the discursive level, seeking to deflect and delay actions to phase out fossil fuel production and use. We now turn to how this notion of REDD+ as a fix has been held together, despite numerous attempts at contestation by a wide coalition of actors.

Contentious carbon assemblages

REDD+ is a strange amalgam of policy, idea and ambition. Its ambiguous and malleable nature challenges those seeking to contest it, while allowing a wide range of actors to rally around its multiple-win promises. Its various material manifestations imply that it must be examined as a specific set of practices in different places. Yet, this does not do away with the need for critical scrutiny of its overarching discursive and programmatic trajectory, which can be gleaned despite the sometimes contradictory multiplicity of practices and interventions taking place in the name of REDD+.

REDD+ rests on the valorization of carbon in forests. This commodification of forest carbon is presented as a qualitatively different in-situ approach to conservation – much like other ostensibly 'non-consumptive' forms of neoliberal conservation, including ecotourism, which have no less significant impacts on local socio-ecologies and resource relations. This is even more so as carbon alone – claims about co-benefits notwithstanding – becomes valorized through a single-commodity logic similar to the valorization of timber under scientific forestry models (Benjaminsen and Kaarhus 2018). Yet, the seemingly 'non-material' nature of carbon sequestration requires complex combinations of expertise, tools and strategies to assemble the carbon commodity – from accounting to forestry; from tools including maps, surveys, charts, remotely sensed images, stochastic formulas to strategies that variously seek to incentivize and discipline local populations (see Benjaminsen and Kaarhus 2018; Edstedt and Carton 2018; Isyaku 2017; Müller 2020). There are discipline forestry bureaucrats (Milne and Mahanty 2019; Stephan 2013; Asiyanbi 2015), and the enactment of sometimes violent, exclusionary forest protection measures (Asiyanbi 2016; Cavanagh *et al.* 2015; Vatn *et al.* 2017; Leach and Scoones 2015; Milne *et al.* 2019; Setyowati 2020).

In spite of these efforts, showing that carbon is actually sequestered at scale, and that it is additional, verified and permanent, remains an elusive task. Scholars have demonstrated convincingly that: (i) the presumed additional carbon sequestered as a consequence of a REDD+ intervention depends crucially on the setting of a baseline and (ii) no clear criteria exist, whereby we can judge if a baseline with associated counterfactual scenario is 'correct' or not (Mertz *et al.* 2018; Seyller *et al.* 2016). Similarly, leakage – i.e. the emissions created when

economic activity just elsewhere in response to a REDD+ intervention – confounds the apparent precision of quantified emissions reductions. In practice, most interventions assess leakage in designated areas close to the project intervention site. However, in our own work, we have found that traders in timber and forest products shift their areas of supply hundreds of kilometers in response to forest conservation initiatives. Similarly, research has shown that international capital moves in response to forest policy changes (Ingalls *et al.* 2018). Thus, leakage respects neither project nor national boundaries. If baselines can be set at will and leakage cannot be practically controlled or assessed, then the notion of additionality appears to vanish as a logical assertion. This seems to represent a fundamental internal crisis for REDD+, as a form of Payment for Ecosystem Services and as an emissions offsetting tool. Proponents' efforts to deploy what Ramutsindela and Noe (2015) called "scalar thickening", where specific scales (project, jurisdiction, landscape, nested etc.) have been selectively emphasized in REDD+ in attempts to sidestep the problem of leakage, has not done away with this problem.

Yet, REDD+ projects and programmes have proliferated, promising verified carbon reduction credits. These projects and programmes provide lucrative labor opportunities for thousands of researchers, consultants, NGO employees, and policy makers and bureaucrats. The activities of these scores of people have been central to entrenching REDD+ and lending it some durability, insofar as they have enabled the coalescing of mechanisms of enrolment into various more or less lasting forms as project proposals, project offices, agreements, training manuals, formulas and standards for measurements (Müller 2020; Stephan 2013; cf. Rose and Miller 1992). Yet, while critical researchers seek to unravel the claims made in documents, local communities on the ground critically apprehend these projects and resist the various threats they pose to local livelihoods, resources rights, and wellbeing (e.g. Ramcilovic-Suominen and Nathan 2020). If threats to local resource rights represent a threat to REDD+ on the ground, social safeguards have emerged as proponents' response to this threat.

Hundreds of reports have set out the importance of including social safeguards in REDD+ processes, and numerous tools have been proposed to that end, covering aspects of governance, planning and impact assessment of REDD+ projects (Rutt 2014; see also Ramcilovic-Suominen and Nathan 2020). Such efforts early on in the life of REDD+ sought to provide assurance that these concerns were being dealt with explicitly and thoroughly and thereby helped legitimize the engagement in REDD+ by funders, implementing organizations, governments, and civil society organizations. Only much more recently has research shown that displacement, dispossession, exclusion and myriad other counter-productive outcomes have, in fact, occurred in many of the places where REDD+ has landed on the ground (Airey and Krause 2017; Asiyanbi 2016; Benjaminsen 2014; Benjaminsen and Kaarhus 2018; Chomba *et al.* 2016; Howson and Kindon 2015; Isyaku *et al.* 2017; Nuesiri 2017; Samndong and Kjosavik 2017; Scheba and Scheba 2017; Vatn *et al.* 2017; Milne *et al.* 2019). Though predictable and predicted, the temporal delay in these effects allowed REDD+ to gain a foothold. And even today, these disturbing outcomes often remain less visible among REDD+ promoters due to structures that sift them out from the information that reaches this audience (Asiyanbi 2015).

Ultimately, the contested existence of REDD+ relies on a complex assemblage of people, things, practices, and knowledge that sometimes transcends human or institutional masterminds. For instance, the interactions of weather, landscape features, forests, and human actions which increasingly precipitate extreme fires have recently devastated REDD+ forests from Indonesia (2015) to the Brazilian Amazon (2016, 2019). The surprise foisted on the REDD+ policy landscape by these extreme fire events demands explanations that take seriously the efficacy of nonhumans, while not underplaying the ubiquitous, historical human agency and power of socio-natures. These and other recent wildfire experiences across the globe show the limit of human capacity to pre-determine and control the timing, intensity, extent and duration of fires, which will be increasingly shaped by human-induced climate change. This is true whether the immediate cause of forest fire is anthropogenic, or lightning. What is important is the way in which forest fires shape the nature of the REDD+ assemblage partly by forcing human responses and shaping (ostensibly pure) human politics. For instance, the El Niño-linked 2016 Amazon fires temporarily cast a shadow on REDD+ optimism, and the politically-charged 2019 Amazon fires have seen donor countries like Germany and Norway become resolute in pulling REDD+ funding from Brazil. While highly uncertain, as we are literally in uncharted territory, predictions are that the overall stability of many forest ecosystems across the planet will deteriorate as global warming progresses, thus confounding and circumscribing the notion that these ecosystems can be relied on as stable carbon stocks in proposed climate

change 'solutions' (Aragão *et al.* 2018; Iglesias and Whitlock 2020). The instability of forest carbon due to global warming itself thus constitutes a fundamental limit to the search for a global forest-based climate fix.

Knowledge politics

REDD+ is sustained through particular forms of knowledge asymmetries. The unequal relations of technical-discursive power in REDD+ is manifest not only in the North-South flow of REDD+ standards, safeguards, guidelines, verification protocols and consultancies, but also in the pattern of scholarly knowledge production around REDD+. As such, who speaks for REDD+, what is said and what remains unsaid all matter greatly in understanding how REDD+ is being made to endure. The geographies of REDD+ knowledge is revealing of a scheme, which is being implemented mainly in the global South but whose knowledge economy reflects an overwhelming dominance of the global North. About 56% of the around 3,000 REDD+ academic articles indexed in Scopus between 2005 and 2019 were published by scholars based in Europe, Canada and the US. Africa, Latin America and Asia, which host almost all REDD+ projects account for only 7%, 10% and 20% of publications respectively.¹³ This uneven geography of REDD+ knowledge production reflects and reproduces, rather than upsets, the North-South asymmetries at the heart of international development.

Furthermore, more specific logics are also at play relating to the circulation and validation of particular kinds of knowledge about REDD+ within epistemic communities, the boundaries of which are vigorously policed. For instance, funders' preference for consultants in designing and evaluating REDD+ projects (Bastakoti and Davidsen 2016; Lund *et al.* 2017) and the revolving door between research and consultancy (Bulkan 2016) have resulted in the foregrounding of accounts that tend to be favorable to REDD+ funders and proponents. For instance, accounts of forced relocations remained invisible in official evaluations of the Tanzanian REDD+ process (NIRAS 2015), though they are well documented by researchers (Lord 2018; Vatn *et al.* 2017). These accounts of REDD+ have been particularly important in spawning ignorance of REDD+ failures and thereby extending the life of REDD+. Yet, these carefully curated accounts of REDD+ sometimes get disrupted by critical accounts from academics, generating spectacular debates in public spaces.¹⁴

Within the wider knowledge economy of REDD+, specific dynamics of circulation and validation of knowledge appear to contribute to the persistence of REDD+. For instance, a recent global review of REDD+ efforts by researchers from the Center for International Forestry Research (CIFOR), concluded that:

There is far too little carbon outcome measurement to understand REDD+ effectiveness; yet what little there is so far paints a moderately encouraging picture (...)
Measurements of well-being outcomes, (...) do not yet yield an adequate evaluation of REDD+ performance. Welfare effects appear to be small, with mixed signs — but more likely to be positive when incentive components are included. (Duchelle *et al.* 2018)

This conclusion gives the impression that we know very little, yet that the little we know is encouraging. This stands in stark contrast to another recent review finding a high incidence of social conflict and tension due to REDD+, and ongoing forest clearance in target areas¹⁵ (Milne *et al.* 2019). The two reviews paint starkly differing pictures of REDD+ outcomes, one slightly optimistic, another rather bleak. The discrepancy is partly attributable to different inclusion criteria¹⁶, but also reflects epistemological commitments, with Duchelle *et al.*

¹³ We searched Scopus for all publications between the period 2005 and 2019 with 'REDD+' present in the abstract or title or keywords. We then used the 'Country/Territory' filter function in Scopus to group all publications into country of origin. The results presented here is the aggregated value for each continent. These figures already take co-authorship into consideration (i.e. it reflects country of institution of all authors on each paper). However, it captures only the location of scholars' institutional affiliation and not their nationality. Analysis was conducted in May, 2019.

¹⁴ Such as the heated debate in Norway about whether REDD+ constitutes climate colonialism, spearheaded by Hanne Svarstad and Tor Benjaminsen. Available at: <https://tidsskriftet-ip.no/index.php/intpol/article/view/654/2497>

¹⁵ These was found in more than 90% of studies that covered both these issues.

¹⁶ For one, Duchelle *et al.* (2018) only covered peer-reviewed articles published from 2015-2017, whereas Milne *et al.* (2019) covered a longer period and included both peer-reviewed articles and book chapters. Secondly, Milne *et al.* (2019)

seeing statistical research designs as a key criterion. In the review by Duchelle *et al.* (2018) 'heterogeneity' in REDD+ implementation, implies that we cannot assess how 'it' would work. Yet, this misses the fact that REDD+, while not conforming to such a narrow definition, is fully operational in the sense of having a range of discursive and material effects or in term of what Milne *et al.* (2019) called "actually existing REDD+." Ultimately, this discounting of evidence of what happens in the name of REDD+, while awaiting evidence of a purified form of it, functions to deflect criticism of the scheme.

What REDD+ does in practice versus its ideal form remains a central contention among scholars. This, we argue, reflects a number of issues. **First**, REDD+ has remained (deliberately) vaguely defined, a situation that is aided by its de-centered architecture. The different understandings of what 'counts as evidence of REDD+' impedes a genuine debate about what REDD+ does – as an articulation of discourses and practices on the ground. **Second**, REDD+ is riddled with contradictions particularly in its market-based form. A central paradox is the notion that REDD+ can be cost-effective, and thereby lucrative for private finance and investment, all the while adhering to social safeguards, affirming social justice, and purportedly delivering multiple co-benefits. This paradox is apparent in the ambiguity with which the authors of the book *Why forests, why now?* (Seymour and Busch 2014) both affirm social safeguards as key to ensure that non-carbon values are respected by carbon finance, and denounce them as 'cumbersome', as demonstrated in a perceptive review of the book (McDermott 2017). Indeed, the existence of trade-offs between efficiency and equity in market-based environmental policy is widely agreed upon and well documented (Karsenty *et al.* 2014). **Third**, the contention reflects different positionalities within academia. The slightly optimistic portrayal of REDD+ in Duchelle *et al.* (2018), for instance, reflects epistemological commitments (that favor positivist statistical modes of analysis) and a practice-oriented allegiance to REDD+ that emphasizes a 'future positive' orientation characteristic of neoliberal conservation and development more broadly (Büschler 2013; Mosse 2004). Maintaining such an orientation allows for the continued enrolment of actors and serves an important stabilization function, which in turn serves the interests of key institutions that benefit from the persistence of REDD+ and its emergent iterations under the broad umbrella of 'Natural Climate Solutions' (see also Asiyanbi and Massarella 2020).

4. A look into the crystal ball

We have examined REDD+ as an example of a policy idea that has persisted, lending stability to the wider notion of forest-based climate mitigation despite internal contradictions and a dismal track-record. We posit that greater understanding of policy persistence can be gained by being attentive to the unstable arrangements of things within the field of counteracting forces of stabilization and contestation. We have argued that the strands of political ecological literature on critical policy studies, assemblage studies, and political economy train our attention to different aspects of these forces, and that an understanding of stability can therefore be usefully approached through an enquiry that builds on their unique and complementary contributions. By doing so, we see that ideas and policies that thrive at the discursive level inevitably have to 'land' somewhere, which opens up possibilities for negotiation, contestation, and resistance, as ideas are re-embedded within particular socio-ecological contexts. Stability hinges crucially on the articulation between policy as ideal, and the often-incomplete attempt to manage an assemblage of knowledge, actors, and things that may support or undermine the ideal, including broader political economies and notions of what is true and right.

Gathering momentum at a time of lethargic global climate action following COP15 in Copenhagen 2009, REDD+ policy development brimmed with optimism. In line with the future-optimism of international development, REDD+ seemed to erase any memory of decades of successive iterations of tropical forest governance policies that had failed to arrest deforestation. Quickly the idea evolved into a scheme that promised much – from climate change mitigation to improved forest governance; from green development to rural livelihoods; from market environmentalism to green aid. Consequently, the scheme has retained a certain malleability, which means that its form and essence continue to be negotiated among an ever-wider constituency

emphasized ethnographic or qualitative methods, whereas Duchelle *et al.*'s inclusion criteria read "clear aims; clear and repeatable methods; outcomes measured accurately and reliably; consistency among methods applied, empirical data, and findings." (2018). A comparison of the studies included show that only 8 out of 23 peer-review articles included in Milne *et al.* were reported by Duchelle *et al.* although published within the period covered by the latter.

from the global to the local level. This has allowed REDD+ to fit remarkably well with dominant ideas of neoliberal environmental governance, green growth, and cost-effectiveness, while also continuously extending a hand to groups concerned with the rights of indigenous and forest dependent peoples and other social justice issues. The core constituency of REDD+, however, has been the international development community that has seen a steady flow of resources for conservation and development projects and programmes in the name of REDD+ implementation. This constituency is now joined by private corporations for which REDD+ and forest-based carbon sequestration offers ostensible relief from current and anticipated consumer and regulatory pressures to reduce emissions. And in relation to the wider capitalist mode of production, REDD+ variously offers a spatiotemporal socio-ecological fix that effectively defers immediate mitigation action for wealthy corporations and nations alike. As such, the persistence of REDD+ must be understood in part in terms of its flexibility and adaptability to a range of purposes.

Yet, being malleable and ambiguous – attributes that reflect the co-existence of forces of stabilization and contestation – means that REDD+ can be held up as both a specific market-oriented policy model and as a token of a much broader ambition to reduce emissions from forests, irrespective of how this is achieved (and funded). This flexibility has been key to some of the major conceptual debates in which both proponents and critics have stressed different aspects of the scheme. This polymorphism of REDD+, as an object of scholarly engagement, has also contributed to its persistence by deflecting criticism.

There are those whose livelihoods as researchers appear to be closely bound up with the continued existence of REDD+ and forest-based offsetting specifically. The incentives to be on board the REDD+ train are obvious, particularly now as growing numbers of wealthy and powerful actors are turning to REDD+ and other Natural Climate Solutions. Yet, the ambiguity with which scholarly proponents of REDD+ simultaneously celebrate and disavow REDD+ indicates there is more to the story. To us, this ambiguity is revealing of deep epistemological and axiological rifts across different academic communities, translating into research ostensibly seeking to examine the same object – REDD+ outcomes – and arriving at widely different conclusions. Yet, maybe the reductionist lens with which some researchers view REDD+ (e.g. does it have a particular predefined impact in the specific project site relative to a control site?) obscures the analytical point that one would derive from viewing REDD+ as part of an assemblage that various actors are seeking to stabilize and contest with intended and unintended consequences? This also implies a call for continued awareness amongst political ecology scholars about the need to reflect and act upon their own embeddedness within assemblages over whose effects they have limited control.

We suggest that the persistence of REDD+ should also be understood in relation to broader ideas concerning the potential of forest-based emissions reductions and natural climate solutions broadly. It might first appear counter-intuitive to be critical of the 'simple idea' that we curb deforestation and forest degradation in the global South. However, the important question remains how such proposals and associated emissions reductions – present and future – actually play out and how they tie into broader visions of emissions pathways and societal transformations in the face of a runaway climate crisis. In this context, the eagerness with which actors whose business models appear to run counter to an idea of rapid decarbonization are promoting carbon forestry raises a flag. To understand the role of REDD+ and the broader visions in which it becomes embedded requires continuous attention of scholars to both the actual operationalization of REDD+ and its continued durability at various scales. This Special Section is a contribution to this important effort.

The durability of REDD+ is also enabled in large part through renewal and integration at various levels. As we have earlier noted, the overall appearance of stability must be understood as a product of dynamism among the constituents of the assemblage. For instance, REDD+ was initially, discursively anchored firmly to the broader notion of Payments for Environmental Services, and its implementation in many places is linked to existing participatory forestry policies (e.g. Balooni and Lund 2014). Today, REDD+ draws support from and itself lends support to broader notions of forest-based climate mitigation, including Natural Climate Solutions or bioenergy with carbon capture and storage (BECCS). This latter configuration seeks to pool the 'virtue' of forest-based climate action and the supposedly limitless potential of technological innovation and upscaling as solutions to climate change. Such a configuration, the proponents imagine, makes for a more expansive and thus more formidable carbon sequestration system, for instance, allowing a defense of continued fossil fuel production and combustion (Carton 2019). A notable example is Shell's celebrated Sky Scenario, which relies heavily on BECCS

and fossil Carbon Capture and Storage to generate massive negative emissions at the global level. This allows Shell to imagine a future with a continued role for fossil fuels stretching to the end of this century, thus effectively keeping Shell 'in business.' Other examples of such newer configurations that couple the logics of forest-based climate action with other carbon-reducing strategies include emerging climate-oriented agroforestry and carbon stock approaches to industrial biofuel plantations.

Also important here is the optimism around the deployment of a range of new technologies in REDD+. For instance, blockchain is being touted to facilitate carbon markets for REDD+ credits. Not only are the "benefits" of such energy-intensive technologies "ambiguous" as Howson *et al.* (2019 : 1) suggest in their analysis of "cryptocarbon", but blockchain will further deepen the abstraction of emission reduction units from actual forests, fostering financial capital speculation and accumulation, and bogus carbon offsetting that bears no positive impact on actual deforestation trajectories. While surveillance technologies have been used in forest and biodiversity protection for REDD+ (Cavanagh *et al.* 2015), analysts now point to their potential to contribute to local REDD+ forest inventory and baseline determination (Skutsch *et al.* 2017). Collins (2019) suggests that drone technology might, in fact, be mobilized by communities to challenge outside claims and associated governing rationalities. These new technological developments, which are still marginal, not only infuse the future of REDD+ and forest-based carbon economy with renewed optimism, but they also impact on processes of stabilization and unravelling of specific REDD+ projects – impacts which must be understood empirically.

Further, new alliances are emerging as old promises around forest-based climate action are being rehashed with new *panache*. Natural Climate Solutions have become a new rallying point for global actors. The promise of global carbon removal under this new label has received lots of attention among major conservation NGOs, in the media, and by business interests. Indeed, a new coalition called [Nature4Climate](#) realigns old proponents of forest-based climate action including the World Business Council for Sustainable Development, UN-REDD, The Nature Conservancy, Conservation International, and other conservation NGOs – to push for the mobilization of financial capital by developing a business case for investments in Natural Climate Solutions.¹⁷ Oil majors also populate these renewed spaces for forest-based climate action including the Norwegian oil company Equinor, and Italian oil major, Eni.¹⁸ The International Consortium of Airline Organizations aims to cap greenhouse-gas emissions from international flights at 2020 levels (at least, before the Covid-19 pandemic grounded flights worldwide) from the year 2021 onward, partly using forest-based offsets. This is in addition to individual airline initiatives, some of which already include REDD+ in their emission offset portfolio. Major food companies are also joining the fray. Danone, the food-manufacturing multinational, finances offsetting projects on forest restoration, efficient cookstoves, and similar activities in India as part of its bid to become carbon neutral by 2050.

Ultimately, this ongoing renewal of REDD+ and other so-called Natural Climate Solutions means the renewal of the promise of a global-scale socio-ecological fix for a capitalist system in crisis (Carton 2019). Yet, the messy reality of REDD+ shows that such strategies offer no guarantee of perpetually withstanding or neutralizing contestations and resistance (cf. McCarthy 2015). Indeed, we see an expanding and increasingly nimble alliance of actors bringing the dark underbelly of REDD+ to light and challenging the often exaggerated (if not empty) promises of REDD+ and Natural Climate Solutions along with the injustices they often legitimize. The consistency and increasing efficacy of resistance – whether through critical expert witnesses, protest letters, or mobilizations of Indigenous people and forest communities – testify to expanding global-local solidarity across critical platforms including REDD-Monitor, globally dispersed NGOs, political ecologists and other critical scholars, activists, and Indigenous people. Added to these is the 'unruliness' of weather and tropical socio-

¹⁷ *Global companies step up to scale investment in natural climate solutions*, World Business Council for Sustainable Development. 12 September 2018. Available at: <https://www.wbcsd.org/Programs/Climate-and-Energy/Climate/Natural-Climate-Solutions/News/Global-companies-step-up-to-scale-investment-in-natural-climate-solutions>

¹⁸ *'Norwegian oil giant Equinor's plans to burn the planet and buy REDD offsets praised by UNFCCC executive secretary Patricia Espinosa.'* REDD-Monitor. 21 November 2018. Available at: <https://redd-monitor.org/2018/11/21/norwegian-oil-giant-equinors-plans-to-burn-the-planet-and-buy-redd-offsets-praised-by-unfccc-executive-secretary-patricia-espinosa/>

ecologies, which challenge the promise of Natural Climate Solutions. Together these emergent formations will continue to shape the dynamics of stabilization and contestation of REDD+ and forest-based climate action.

5. Conclusion

We hope that this collection will further stimulate debates around REDD+ and the wider mobilization of forests in climate action. Indeed, for political ecology, a relentless questioning of the persistence of redundant (perhaps even pernicious) climate and environmental policies is as timely as ever. Significant hopes for addressing climate change across both the regulatory UNFCCC landscape and the vast arena of voluntary climate action currently rest on so-called Natural Climate Solutions that embody many of the same characteristics that made REDD+ persist, despite failing spectacularly. Thus, the race to avert catastrophic impacts of climate change rests on shaky ground indeed. And the longer these ostensibly common-sense climate solutions are allowed to persist, the less likely it is that more effective solutions can be mobilized in time and at scale. For this reason, we call for intensified scrutiny of forest-based climate mitigation in its new guises, and of the multiple ways in which they are made to persist.

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