

Practical critique: Bridging the gap between critical and practice-oriented REDD+ research communities

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Abstract: *Reducing Emissions from Deforestation and Forest Degradation (REDD+) is an ambitious global programme oriented towards improving forest carbon management. It aims to attract new sources of 'green' capital to fund emissions reductions from avoided deforestation and sustainable forest management. REDD+ is transforming forest conservation, as a diverse array of new stakeholders become involved. Not surprisingly, REDD+ has proved divisive, as critics concern themselves with issues of power, justice, and commodification, while practice-oriented researchers tackle similar issues from different perspectives, focusing on benefit sharing, safeguards, additionality, measuring and verification. In this paper we explore the different roles of critical and practical research, and argue that there is a need for greater sharing of knowledge across current divides. We draw on our own experiences of conducting a research project on REDD+ in Indonesia that involved critical and practice-oriented researchers. We argue that critical research disconnected from practical matters can have perverse outcomes for practitioners who are ultimately working towards similar goals; while uncritical practice-oriented research has the potential to lead to a dilution of core values of environmental justice and conservation. In contrast, forms of practical critique provide ways of researching REDD+ that have practical value while maintaining critical insights.*

Keywords: *Indonesia, political ecology, critique, practice, REDD*

Introduction

What is the role of critical academic research and how can it contribute to meaningful social-ecological change? We explore this question in the context of the Reducing Emissions from Deforestation and Forest Degradation (REDD+) programme in Indonesia. REDD+ is a controversial global programme that is transforming forest governance by financially rewarding countries that measurably improve their forest carbon management. For some, REDD+ is the latest expression of neoliberal exploitation as market logics dominate and distort local agency, alienating local people and leading to accusations of 'green grabbing', eco-colonialism and a dilution of Northern responsibility for emission reductions. For others, REDD+ represents the

latest, and possibly last, hope for the world's forests, being an imperfect but innovative attempt to counter some of the economic drivers of global deforestation. This paper explores the contrasting roles of critical academics and practice-focused researchers within these debates, by reflecting on our experiences as a multidisciplinary team working on a three-year research project exploring REDD+ in Indonesia. We outline practical forms of critique, exploring how critical research can actively engage practice-oriented research themes and processes.

The paper draws on recent debates questioning the role of critical research, and concerns that critique has become distanced from effective change. Hardt (2011: 19) maintains that 'contemporary modes of critique are ...

insufficient as political methods insofar as they lack capacity both to transform the existing structures of power and to create alternative social arrangements'. The subsequent discomfort, or 'melancholy', associated with an awareness that exposing injustice is not the same as overcoming injustice, is inspiring new ways of thinking about critique. Latour (2004: 247–248) asks, 'What would critique do if it could be associated with *more*, not with *less*, with *multiplication*, not *subtraction*?' Ferguson (2009: 167) similarly challenges critical researchers to move away from outlining 'what are we against' to a more creative and progressive stance identifying and pursuing 'what do we want?' Gibson-Graham advocates performative critical work, where 'weak theory' is used not to further reify relations of 'domination and oppression', but instead to 'see openings, to provide a space of freedom and opportunity' (Gibson-Graham, 2008: 619). A reshuffle is taking place as more critical researchers adopt 'affirmative modes of critique' (Woodyer and Geoghegan, 2012: 206) that critically and creatively pursue what is right, in addition to identifying inherent wrongs.

We adopt this approach in responding to Blaikie's (2012: 232) call for a more 'useful' political ecology that actively pursues environmental justice, in which 'a focus on instrumental means of engagement outside the academy becomes essential'. It is our contention that the interaction between critical academics and practice-oriented researchers that such an approach warrants, is often (though not always) limited, leading to misunderstandings and potentially perverse outcomes for the pursuit of shared goals. For the purposes of this paper, we define critical research as predominantly (but not exclusively) academic research focused on issues of power, marginalisation and social justice. In contrast, practice-oriented research derives from a wider array of academic and non-academic institutions, and focuses on developing, testing and implementing policy and processes. Practice-oriented research incorporates the work of practitioners in designing methodologies, consulting with communities, and developing and reporting on projects, as well as those researchers who work closely with practitioners on design, quality, strategy and best practice. Perhaps this critical academic/

practice-oriented research dualism is somewhat overstated, as many researchers do engage both camps, and it is probably best to consider critical research and practice-oriented research as two ideal-typical poles between which researchers position themselves. Nevertheless, it is clear from our experiences of conducting joint research involving critical academics and practice-oriented researchers that orientation towards either of these poles means that researchers become embedded in, and attention is drawn to, particular issues and concerns that are constructed in quite different ways. Furthermore, existing connections between these research communities are rarely made explicit, inhibiting the development of better dialogue and strategies for effective change. We argue that critical research that has no connection with practical matters can have unintended and frustrating outcomes for practitioners; while uncritical practice-oriented approaches have the potential to escalate and consolidate injustices.

Our aim then is to explore practical critique – ways in which critical and practice-oriented research can be brought closer together in productive and enabling ways. We have pursued this through the structure of our broader team which involves critical researchers trained in political ecology, human geography and anthropology; more practice-oriented researchers from environmental economics and natural resource management; a professional REDD+ developer; and three PhD students with professional experiences in England, New Zealand/Aotearoa and Indonesia. We argue that such an endeavour requires knowledge of and respect for the different approaches of each community, as well as flexibility and creativity in pursuing field-based strategies. As such, the paper is organised to first provide a brief introduction to REDD+ and its growing influence in forest governance. The subsequent section outlines how critical researchers are approaching REDD+ and other market-based forms of environmental governance. The third section outlines how some practice-oriented researchers are responding to critique, and the different themes informing their research. The fourth section draws on case study research in Central Kalimantan, to describe some of the strategies team members adopted to direct critical approaches towards practice-oriented outcomes. The final section

offers some general conclusions about the value of practical critique.

REDD+

REDD+ is a financing framework designed to support the conservation of forest carbon in developing countries. It is being developed simultaneously within the United Nations Framework Convention on Climate Change (UNFCCC) negotiations and in the context of the voluntary carbon markets. At the core of this framework is a results-based payment for ecosystem services (PES) model, whereby environmental outcomes are delivered, measured, reported, verified and registered as carbon credits. The emergence of REDD+ is creating new political economies of rural development in rainforest nations. The goal is to displace activities that lead to deforestation and forest degradation, but not necessarily to displace all of the actors involved in these activities. For example, where local communities derive economic benefit from deforestation or forest degradation, REDD+ (in principle, and when appropriately implemented) presents a potential opportunity for such actors to benefit economically from a different style of resource management than 'business as usual'. Entities that have logging and forest conversion concessions have the opportunity to sell such concessions to a forest protection proponent, and in the process recover all or a portion of the equivalent net profit expected under logging. Jurisdictions that otherwise have benefited from economic development associated with deforestation and forest degradation (e.g. from the timber and agriculture industries) similarly stand to benefit from REDD+ activities through both the income and associated multipliers and taxes generated from donor investments and carbon credit sales. Of course, not everyone will benefit from REDD+, as the opportunity costs associated with a change in resource management activity will displace some actors who are not connected to the REDD+ sector. The point of REDD+, however, is to enable a shift towards environmental protection as a mainstream economic activity, by enabling forest protection to provide tangible economic development, thereby 'creating the possibility of economic winners from decarbonisation' (Newell and Paterson, 2010: 10).

REDD+ was initially seen as a cost-effective way of addressing one of the leading sources of greenhouse gas emissions (Stern, 2007). It has proved a 'remarkably successful idea' (Angelsen and McNeill, 2012: 32), with UN-REDD listing 53 partner countries, 18 of which have developed National Programmes, while the World Bank supports 44 countries through its Forest Carbon Partnership Facility. Yet enthusiasm has waned somewhat for a variety of reasons. REDD+ credits are not recognised under the Kyoto framework and are therefore only tradable in voluntary markets, where large-scale private finance has been reluctant to engage in what many see as risky investments (Dixon and Challies, forthcoming). In addition, the technical challenges of building capacity to accurately measure and reward improved forest carbon management have proved much more difficult than anticipated. And finally the politics of REDD+ have been contentious, with some critical academics, non-governmental organisations (NGOs), and indigenous and forest communities vocal in their opposition (McGregor, 2010). Clearly, there are considerable hurdles to be overcome if REDD+ is to succeed in slowing deforestation and creating new forest carbon economies. As such, REDD+ is at an interesting juncture in which critical and practice-oriented research can play an important role in shaping whether the programme loses momentum and falters, or is re-energised in productive ways.

How, then, should we approach REDD+? Understanding the themes of critical and practice-oriented research is an important first step in overcoming disciplinary divides. Below we outline core themes in two sets of contrasting approaches. The first, from critical academic researchers, is primarily concerned with the potential dangers associated with the programme. The subsequent section outlines how practice-oriented researchers are responding, and the measures they are putting in place to maximise the likelihood of benefits.

Themes within critical academic research

Within critical academic research, REDD+ is seen as a new form of market environmentalism. Here, we briefly summarise core concerns emerging from four bodies of critical research

exploring market environmentalism and REDD+: neoliberalisation of nature, green governmentality, environmental justice, and conservation and development.

Neoliberalisation of nature

Proponents of neoliberal approaches maintain that pricing nature and its services allows markets to internalise environmental externalities. Furthermore, market-based approaches can assist in clarifying private property rights and mobilising private sector resources and expertise for conservation. Ostensibly, markets for environmental goods (and bads) and services should drive 'green growth' in a 'green economy' (e.g. UNEP, 2011). Flow-on benefits may include empowering local people to negotiate and profit from conservation agreements, and a 'greening' of businesses and consumers. However, critical researchers – including many concerned with REDD+ – contend that such commodification has a host of undesirable impacts. Of particular concern is the increasing tendency towards privatisation, financialisation and marketisation in environmental management (e.g. Castree, 2010a,b).

Critics argue that pricing and privatising nature allow public goods and services to be traded, accumulated and controlled in the private sector. The commodification of forests, forest carbon and a range of associated environmental services in the context of REDD+ may have adverse effects for access and usage, as investors engage in speculative profit-seeking behaviour (Pearse, 2012). In this way, market rationales tend to become privileged in REDD+ decision-making. Despite the application of social and ecological 'safeguards', which should hold forest carbon projects to principles of social equity and environmental sustainability, many REDD+ projects continue to be governed primarily according to market imperatives and principles of 'flexibility', and (economic) efficiency and risk avoidance (Dixon and Challies, forthcoming). In the process, non-market values and knowledges of nature are likely to be neglected as local community members are positioned as rational utility maximisers, and social and cultural ties and obligations are divorced from economic decision-making processes (Büscher *et al.*, 2012). Marketisation

is seen as thereby facilitating enclosure and dispossession as a form of primitive accumulation, alienating customary owners and communities from their lands and resources, and facilitating the penetration of capitalist social relations into rural and remote forest areas (Hall, 2012).

Market logics are argued to favour the wealthy and powerful, so that big business and Northern governments are seen as the main beneficiaries of neoliberalising forest carbon governance (Okereke and Dooley, 2010). Forest users, and the communities and developing countries that host REDD+ projects, are likely to be relatively marginalised from the successes of neoliberal conservation, disproportionately burdened with costs and excluded from decision-making (Hiraldo and Tanner, 2011). Where particular 'high value' spaces are targeted for investment, they tend to become 'transnationalised spaces' whose value becomes subject primarily to outside interests and rationalities (Igoe and Brockington, 2007: 441). Furthermore, ambiguity and uncertainty surrounding the likely impacts of climate change (and the viability of strategies like REDD+ that seek to address it) create an unclear future for natural resources and ecosystem services, producing real vulnerabilities for market-based mechanisms in environmental governance – even where local people are temporarily benefiting (Redford and Adams, 2009).

Green governmentality

The green governmentality literature draws on Foucauldian insights to explore the mechanisms through which human and non-human populations are governed (Foucault, 2007; Rutherford, 2007). Researchers are interested in how particular knowledges, practices and power relationships become normalised and the consequences of this for human–environment relationships. A key theme is the potential depoliticising effects of particular governmental strategies. Seemingly mundane governmental technologies, such as organising participatory meetings to discuss forest issues, can render political struggles technical and resolvable through expert diagnosis (Li, 2007). Opportunities to resist or contest REDD+ are restricted as a result, and can be manipulated to suit

neoliberal objectives in a subtle 'disciplining of dissent' (Büscher *et al.*, 2012).

A second theme explores the technologies through which human–climate relationships become known, measured and governed (see Stripple and Bulkeley, 2014). For example, researchers have explored the technologies employed to measure, calculate and trade carbon (Lovell, 2014). Analysis of such technologies implicated in climate governance underpins critique of reductionist environmental management and casts doubt on the viability and scalability of market-based governance mechanisms (Gupta *et al.*, 2012). In a similar way, researchers have focused on the technologies through which people come to self-govern their behaviours, analysing how some environmental norms and behaviours become commonplace, while others are marginalised or absent. In the context of REDD+, a major concern is that the programme produces profit-oriented conservation subjectivities rather than subjectivities based on more powerful moral orientations (Büscher *et al.*, 2012; Corbera, 2012; Gupta *et al.*, 2012).

Environmental justice

Research on environmental justice examines the distribution of environmental 'goods' and 'bads', underlying causes of maldistribution, and fairness of process in environmental matters (see Schlosberg, 2007). Of particular interest has been the growth of climate justice literature that explores the assumptions underpinning carbon trading, a key mechanism for REDD+ (Lohmann, 2008; Spash, 2010). Commentators have charged that carbon trading legitimises ongoing extraction and burning of fossil fuels (at an enhanced cost) rather than addressing, for example, the drivers of fossil fuel consumption (Lohmann, 2008; Bridge, 2011). The 'spatial fix' that carbon markets provide by enabling 'efficient' net emissions reductions through offsets is seen as unfairly redirecting the responsibility for mitigating climate change to developing nations, while not requiring 'real' emission reductions by advanced industrial nations. On the other hand, REDD+ is seen as potentially rewarding developing countries that have the poorest environmental records and the highest rates of

deforestation, thereby penalising countries with good forest management practices.

Environmental justice research is also concerned that private sector investment in REDD+ may heighten the risk of 'green grabbing' and encourage fortress conservation, whereby local land claims are overridden in the course of large forest carbon deals (Fairhead *et al.*, 2012; McCarthy *et al.*, 2012). Local-level injustices arise if communities are excluded from their lands or restricted in their access to resources, and thereby face significant threats to lifestyles and livelihoods. Even in the absence of outright green grabbing, the profit-making imperatives introduced via REDD+ project development may also serve to marginalise local people in decision-making.

Conservation and development

The critical conservation and development literature is concerned that the difficulties in implementing a range of conservation projects, including variants of co-management, community-based conservation and sustainable use projects (K. Brown, 2002), will be replicated by REDD+ (Blom *et al.*, 2010). A common concern has been in the oversimplification of the concept of community among project developers who often assume homogenous social structures and shared interests and norms. An understanding of community politics is seen as vital, as conservationist norms may not be easily introduced or 'translated'; economic benefits may be considered secondary to recognition of resource rights and decision-making power; and local elites may capture the majority of benefits (Agrawal and Gibson, 1999, 2001; Kellert *et al.*, 2000; Li, 2002). In some cases, incorporation of Indigenous knowledges has been reduced to tokenism without appreciation of the complex social and cultural relations embedded within these knowledges (Nadasdy, 1999), and ongoing Indigenous land rights issues have been avoided, undermining project implementation and sustainability over the long term (Haalboom and Campbell, 2012). Frequently, these shortcomings have been linked to the politics and practices of large Northern NGOs, which have been accused of lacking accountability; unwillingness to recognise or advocate for Indigenous land rights; con-

sorting with corporations that compromise their integrity and positioning in relation to environmental protection and community interests; and cooptation of local NGOs (Chapin, 2004).

Given these concerns, critical researchers have been sceptical of the boosterish language and the circulation of 'spectacles' of pro-REDD+ lobbies. Instead of seeing REDD+ as an innovative programme that will improve carbon management and slow deforestation, critical researchers are concerned that it will dilute the meanings and values attached to forests, privilege powerful interests in the global North while creating new risks and responsibilities for already marginalised forest dependent communities in the South, do nothing to address the root causes of greenhouse gas emissions, and fail to address the shortcomings of earlier conservation and development projects. In this view, REDD+ will ultimately achieve little in mitigating climate change, while leading to a depoliticisation of forest politics as market logics increasingly govern forest decision-making. As a consequence, some critical researchers actively oppose REDD+ while others engage, but typically direct their research towards identifying weaknesses rather than building upon strengths.

Practice-oriented responses to critical concerns

The types of concerns mentioned above, alongside more technical ones around measuring and accounting for carbon, have made the practice of REDD+ subject to ongoing criticism. This has complicated the task of implementing REDD+, with practice-oriented researchers needing to plot pathways that balance the concerns of critics with the opportunities REDD+ presents for financing forest and carbon conservation. Here we outline practice-oriented responses to three types of concerns: (i) conceptual opposition; (ii) carbon accounting integrity; and (iii) social and environmental safeguards. We based these perspectives on the viewpoints of team members who are actively involved in designing and advising on REDD+ projects, alongside practice-oriented publications, particularly those from the Center for International Forestry Research (CIFOR), one of the leading REDD+ research and policy organisations.

Conceptual opposition

As described above, some of the most influential conceptual arguments against REDD+ derive from concerns about the commodification of nature. While many practice-oriented researchers do not engage in this debate, others share concerns about the increasing influence of market rationales (e.g. Brown, 2013). However, practice-oriented researchers also stress the positive elements of carbon commodification, comparing it to the more destructive forms of commodification occurring through timber harvesting and agricultural extension. REDD+, through the sale of carbon credits, produces a different type of commodity, which is seen to have a much less harmful impact on forests and forest-dependent communities. The commodities being produced are units representing the carbon (and related) benefits provided by forest protection, in which people relinquish the right to cut timber and make a living from the timber industry and/or industries based on forest conversion, in exchange for the right to create and sell carbon assets arising from forest protection. So a change in how human–nature relationships are commodified is occurring, with REDD+ signalling a shift towards more benign environmental outcomes.

This shift in the commodification of nature has many practical advantages. There has been a long-standing challenge for environmental protection professionals and volunteers to secure funding for their efforts and to address the opportunity costs of stopping a form of economic activity (e.g. logging). This has led to continual grant applications, sponsorship deals, compensation payments, and countless failures and sometimes successes. Grant applications are filled with promises, and funding reports commonly contain myriad excuses for not having delivered on the promises written into grant contracts. Indeed, over-promising and under-delivering have plagued the environmental finance sector for decades, and have contributed to a lack of confidence among many potential sources of finance that rightly perceive an unfavourable risk profile due to relatively low levels of quality control and quality assurance compared with other investment opportunities. This lack of confidence has translated

into a lack of funds flowing in the direction of environmental protection – particularly from the private sector.

In contrast, REDD+ offers a ‘fresh approach’ by adopting the PES principle, according to which REDD+ commodities in the form of carbon credits are produced, to bridge this financing gap (Angelsen and McNeill, 2012). It provides a quality control and quality assurance infrastructure capable of reducing risk to finance stakeholders irrespective of whether those stakeholders seek a financial return on their investment. The PES market model shifts delivery risk onto the seller, which is important to strengthen investor confidence, and to enable an increase in the frequency and volume of funds flowing into forest conservation. However, this shifting of risk towards suppliers of ecosystem services is of concern for those coming from an environmental justice perspective. After all, as discussed above, why should some of the world’s most marginalised communities bear the risks created by carbon trading markets? A practical answer to this is that donors and funders (including public and private sector entities) will simply not unlock large volumes of new money for rainforest protection based on promises of future action. Furthermore, it is rare for forest communities to pursue REDD+ economies without large start-up (readiness) investments from donors. Hence, Northern donors, in most cases, have tended to absorb the initial start-up costs and associated risks, with Northern buyers purchasing the credits once they have been produced (Streck and Parker, 2012).

Practice-oriented research seeks to minimise these risks for investors and participating communities when connecting them to grant and market finance (see Dutschke and Angelsen, 2008). Hence, practitioners advise on risk management, such as: seeking seed-funding grants to lower investment risk; engaging buyers in forward purchase agreements in exchange for up-front start-up finance; and ensuring adherence to standards, quality control and quality assurance systems to guarantee the value of the commodity. While market rationales and commodification may not appeal to traditional forest defenders, they do provide a language with which to entice powerful private sector investors to the unfamiliar arena of forest protection.

From the forest conservation perspective, then, the source of finance for forest protection is less important than forest protection itself. Practitioners draw on the financing tools available. Carbon credits are used as a proxy for the range of values contained in forests (including carbon value and non-market value to Indigenous peoples), sufficient to secure the necessary finance to provide compensatory payments to those who will relinquish the right to pursue more extractive uses. The carbon benefits delivered in the process of producing the credits are still real, measurable, additional and verified, only there will be a range of other benefits delivered by the project that are not turned into tradable units and are either protected for free or help command a premium on the value of the carbon credits. For project proponents, it is rather unimportant whether funding is sourced from the public sector in the form of grants, or from the private sector in the form of market transactions.

Carbon accounting integrity

Much practice-oriented research responds to concerns about the feasibility of accurately measuring avoided carbon emissions, and difficulties in proving that REDD+ projects represent carbon gains additional to business-as-usual. To this end, millions of dollars of donor money are being invested in the development of systems to monitor forest carbon, while a growing practice research community has developed a new technical vocabulary incorporating terms like leakage, permanence and additionality, to articulate the best approaches for doing so. Key research themes explore methods to establish deforestation baselines and reference levels (Estrada and Joseph, 2012; Herold *et al.*, 2012), ways to ensure permanence of carbon benefits (Dutschke and Angelsen, 2008), methods of preventing carbon leakage where forest protection in one place leads to destruction elsewhere (Wunder, 2008), and processes to measure, report and verify (MRV) carbon emission reductions (Wertz-Kanounnikoff *et al.*, 2008; Herold and Skutsch, 2009). These concerns have since been incorporated into the compulsory elements of international REDD+ financing instruments, including international forest carbon standards

and the quality control and quality assurance dimensions of REDD+ implementation (e.g. Penman *et al.*, 2003; Baker *et al.*, 2010).

Practice-oriented researchers approach such issues as technical challenges and are aware of the inevitable inaccuracies in calculating carbon emission reductions from estimations of future deforestation. Herold and Skutsch (2009: 90) recognise, for example, that setting reference levels will involve 'political decisions', yet still see an important role for science in estimating patterns of deforestation that would have occurred under 'business as usual' conditions (thus, informing additionality assessments). Similarly, Wertz-Kanounnikoff *et al.* (2008) acknowledge the imperfect nature of MRV when discussing how best to approach the trade-off between costs and accuracy of different measurement systems, advocating for better international guidelines on what level of accuracy should be deemed acceptable. A critical researcher might choose to dismiss REDD+ for these reasons, seeing these inaccuracies as a failed attempt to accurately govern or finance carbon-related forest management, potentially permitting injustices while depoliticising forest governance. In contrast, practice-oriented researchers usually define measures to manage data quality and undertake assessments of uncertainty and its potential impact on carbon-related assertions. This is a common feature of carbon standards, such as the Intergovernmental Panel on Climate Change guidance on national greenhouse gas inventories (IPCC, 2006), the Verified Carbon Standard (VCS, 2011), the Plan Vivo Standard (Plan Vivo, 2013) and the ISO14064-2 Standard (ISO, 2006). The science-based management of REDD+ MRV systems functions on probabilities and levels of confidence in data quality rather than certainty. Researchers work towards minimising uncertainty where possible, in order to realise broader social and environmental gains.

Social and environmental safeguards

A third body of research focuses on the social and ecological dimensions of REDD+, responding to critical concerns that REDD+ may have unjust outcomes for human and non-human forest communities. While initially opposed by some parties to the UNFCCC (see den Besten

et al., 2014: 5), social and environmental safeguards have since been developed as a practical way of incorporating these concerns. The UNFCCC-defined REDD+ safeguards developed at COP-16 in Cancun in 2010 recommend respect for the knowledge and rights of Indigenous peoples, full and effective participation of relevant stakeholders (particularly Indigenous and local communities), and conservation of natural forests and biodiversity (UNFCCC, 2011). Such safeguards are designed to ensure that 'co-benefits' beyond carbon gains are realised. While such recommendations are currently non-binding, they have been translated into national REDD+ policies through principles such as Free Prior and Informed Consent (FPIC), whereby affected communities must be fully informed about REDD+ proposals and then freely choose whether to participate. A range of social and environmental safeguards for REDD+ have been developed by multilateral actors such as the World Bank and UN-REDD, and are embedded in most voluntary sector standards.

As a consequence, practice-oriented researchers argue that the technical, social, financial and governance systems and frameworks developed for REDD+ are the most comprehensive and transparent that the forest sector has ever seen. In sharp contrast to the critical academic literature, REDD+ is seen by practice-oriented researchers as an opportunity to harness public and private sector capital to create new socially and environmentally sustainable economies and futures. It involves risks, and has weaknesses, particularly with regard to equitably engaging affected communities (M. Brown, 2013). However, most in the practice research space would concur with Seymour and Angelsen (2012: 333), who argue that 'a bigger risk would be for REDD+ as a vision to fail to compete with business as usual'. Nevertheless, practitioners, like critical academics, recognise that there is a large gap between the processes and principles embedded in policy frameworks and what happens when REDD+ is implemented on the ground (M. Brown, 2013).

Critical engagements

Despite a shared interest in protecting forests, it is clear from the above discussion that critical

researchers and practice-oriented researchers approach REDD+ in very different ways. Critical researchers are concerned about the unintended negative impacts of REDD+, particularly as they relate to human–nature relationships in terms of values, meanings, power and justice. The actual carbon gains of the project often appear to be of secondary importance. Conversely, practice-oriented researchers are much more interested in what REDD+ can pragmatically achieve for forests, climate and societies under conditions of considerable urgency, given rates of deforestation and forest degradation. They are more likely to be optimistic, seeking to set up mechanisms and programmes that will increase the likelihood of positive outcomes. We found incorporating both perspectives in one research team simultaneously challenging and valuable.

There is clearly a role for critical research and practice-oriented work. We do need to know the unintended and often less visible effects of global environmental programmes, and we also need to get the technical details right if programmes are to have the best chance of success. Despite this recognition, the different outlooks of critical and practice-oriented communities can lead to knowledge silos, as researchers interact with those that share similar outlooks. To some extent, these divisions can be institutionalised, with critical academic work being well received in disciplines like geography, anthropology and political ecology, while more technical papers find receptive audiences in disciplines like environmental economics, environmental science, and among policy and practitioner communities. Different disciplinary interests, epistemologies, influences, concepts, methodologies, writing styles, languages and publications all act to divide the types of knowledge that are produced. Nevertheless, it is important to recognise that both research communities share common interests in slowing deforestation in fair and equitable ways, and there is potentially much to be gained through greater dialogue and interaction. We provide examples of this potential in the following section.

Research examples

Our project explores traditional critical political ecology research themes, focusing on shifting

governance structures, power relationships and marginalities resulting from REDD+ projects (see McGregor *et al.*, forthcoming). However, rather than limit ourselves to academic critique, we are interested in the practical ramifications of our findings and how they can influence the research processes initiated by REDD+ proponents in Indonesia. Our case studies are drawn from Central Kalimantan, the government's first official REDD+ pilot province, exploring how REDD+ is affecting Dayak and ethnic Malay smallholders, many of whom have experienced long histories of injustice as their land has been appropriated by successive central and local governments for timber concessions, pulp plantations, and rubber and oil-palm estates. There are a variety of REDD+ projects in Central Kalimantan, including the Rimba Raya project, which is the first, and currently only, Indonesian project to progress to the stage of selling carbon credits. Other projects have been slow to develop, or have faltered. The Australian Aid Agency (AusAID), for example, recently withdrew from its high profile but controversial AUD\$50 million Kalimantan Forest Carbon Partnership (KFCP). This decision emphasises the fragility of REDD+ in Indonesia, and the potentially important role of research in effecting outcomes.

Our first example is based on four months of research in Palangkaraya, the capital of Central Kalimantan, and Gunung Mas District. The research was conducted by one of the co-authors as part of her PhD project exploring REDD+ governmentality. A component of this project involved interviews with government officials, NGOs, community members and private sector representatives to explore the formation of a new authoritative land use map that is required for REDD+ projects to take place. Currently national, provincial and district governments use different maps, each with different forest cover, to grant land-use licences. This has created confusion and conflict with the Indonesian environmental NGO Walhi (2012), suggesting that 78% of the province's 15.35 million hectares of land have been allocated through 352 concessions, of which only 86 are legal. Interviews supported this, with a government official estimating that of 1400 villages, 800 are engaged in some sort of tenure conflict. The need for clear tenure rights as a means of

attracting REDD+ investment has made this confusion more visible and problematic, contributing to efforts to produce a single authoritative map, known as one-map.

While our critical attention was directed towards the risks embedded in this process, we were also drawn to the progressive possibilities one-map may enable. The Indigenous People's Alliance of the Archipelago (AMAN), for example, was engaging with the mapping processes as a strategy to strengthen Indigenous tenure rights in a context traditionally favouring state and private sector companies. Clarifying tenure rights, while ostensibly linked in this case to a form of market environmentalism, is contributing to a sense of security for the community by defining new spatial arrangements beyond the administrative boundaries previously specified by the state. Moreover, the map renders the community visible and becomes the community's weapon to demand recognition and acknowledgement from district, provincial and national governments (for mapping as advocacy technology, see Peluso, 1995; Blomley and Sommers, 1999; Crampton, 2003). This strategy of critical engagement is being orchestrated by AMAN and other NGOs around the country, leading to a partial 'Indigenising' of the architecture of REDD+ policies and institutions. Indigenous mapping is now included among 10 imperative actions the REDD+ Agency must deliver by 2016. Indigenous voices are also involved in national decision-making structures through the REDD+ Agency's multi-stakeholder committee, heightening the visibility and influence of critical concerns about Indigenous rights and environmental justice.

Despite these strategies and the new political possibilities opened up by the recent Constitutional Court ruling on customary forest,¹ there is considerable resistance from stakeholders who have an interest in retaining the existing messiness of forest spatial governance, particularly at the district level. As a team, we were interested in how we could heighten the profile of what we felt were critically appropriate strategies, such as AMAN's indigenous mapping approach, within practice-oriented research. We are doing this through academic writing; however, we have also sought to more directly influence practice-oriented research processes in Indonesia. It was with this interest IN MIND

that the PhD researcher exploring this case study undertook a consultancy for the REDD+ Agency, the key government agency researching and designing REDD+ in Indonesia (see Astuti and McGregor, forthcoming). The consultancy involved conducting research with district-level governments to develop lists of imperative REDD+ actions for districts to implement from 2014 to 2016. She used these dialogues to heighten awareness of the importance of Indigenous mapping as a participatory mechanism to clarify tenure conflicts, and the need to engage with NGOs and community organisations in decision-making. Knowledge of the practice-oriented literature on REDD+ safeguards that relate to FPIC, participatory practices and community rights helped communicate these concerns to practice-oriented audiences, including those officials responsible for authorising REDD+ projects. As the report was coming from a government-funded REDD+ consultancy, ostensibly in the practice-oriented research space, it was more likely to be well received than if it came from critical research 'outside' government processes. We found that engaging in formal mechanisms and adopting new positionalities, such as consultants, provided means to traverse insider/outsider dualisms, and form channels through which critical concerns can find new practice-oriented audiences. Other formal strategies included attending and engaging in REDD+ workshops and events, and forming our own project workshops specifically aimed at bringing together practice-oriented researchers and critical academics.

A second example derives from the research of another co-author of this paper whose PhD project is focused on critical issues of access and agency in the REDD+ project areas of Sungai Lamandau and Rimba Raya (see Howson and Kindon, forthcoming). The PhD research involved nine months of fieldwork in 2013/2014 visiting villages and sub-villages located along the boundaries of these two projects. In each location, the administrative head (*Kepala Desa*), the leaders and members of local farmers' cooperatives and women's groups, and a sample of 20–40 individual households were interviewed over periods of up to five days. The researcher developed strong links with communities and REDD+ practitioners, allowing him to have some influence on project development.

As an example, he helped facilitate practice-oriented research processes, such as community meetings on REDD+ where issues of FPIC and benefit sharing were discussed, and critical issues of power, access and influence could be observed. At one meeting, to decide specifics of the Sungai Lamandau project design documents, he presented some initial findings of his PhD, which highlighted concerns about marginalisation of certain actors, such as women's groups, across the district. Based on these observations, he made suggestions for mitigating exclusionary practices couched in the themes and concerns of practice-oriented researchers. These included recommendations about landless labourers who were not participating due to exclusions from specific incentives. These hidden exclusions were not easily visible, as landless labourers were not excluded in principle; instead, they were welcomed to join a farmers' cooperative (upon payment of a joining fee) and receive theoretical future REDD+ payments. However, due to their limited access to short-term incentives, which were exclusively for landowners (savings and loans, communal enterprises, etc.), they were very unlikely to invest time and energy in participation. These observations, derived from critical ethnographic research, but very relevant to the benefit-sharing issues concerning practice-oriented researchers, were eventually incorporated within the project design documents. By positioning himself as an actor within the project development process, he was able to communicate critical research findings in a variety of small ways that have heightened the likelihood of more equitable and inclusionary outcomes.

A final, less direct, means through which these two researchers sought to integrate critical and practice-based concerns was through the less formal advisory roles both adopted during and after their fieldwork. The friendships they developed in each area continue and they are called upon for advice by communities about how best to engage with REDD+ and other initiatives. In the Rimba Raya village of Baung, for example, a level of trust was developed between the PhD researcher and some informal gold miners who were expelled from the project site by forest police in a REDD+ project-funded operation. Their feelings of injustice were mag-

nified by rumours that the Rimba Raya project was attracting USD\$1 billion from the Norwegian government, and this money was being unfairly intercepted by the project's community consultation contractor, World Education. In this case, the researcher sought to dispel these rumours and instead discussed the forms of community action being adopted in other parts of Indonesia, and potential risks and opportunities in seeking compensation and benefits from the project. In spreading awareness about the possibilities and problems of REDD+, the researcher became involved in efforts to increase knowledge so that communities are better positioned to choose between resisting and engaging in the practice-oriented research processes promoted by project developers. Similarly, the researcher who focused on Gunung Mas district still advises some of the communities involved about the opportunities and risks they face by engaging in REDD+. While not directly influencing practice-oriented research, she cautions community groups about how best to engage with practitioners researching and designing REDD+ and other land use projects.

Conclusions

In this paper, we have sought to overcome some of the divisions between critical and practice-oriented research by promoting the idea of practical critique. To this end, we developed a diverse team, broadened our understanding of critical and practice-oriented research themes, and adopted active formal, informal and advisory roles in the case study areas. These diverse knowledges, strategies and positionalities enhanced our ability to develop practical critiques, while maintaining the integrity of our original research agenda. Other critical researchers are involved in similar efforts, yet such engagements are rarely made explicit. As such, strategies to constructively engage practice-oriented researchers are often invisible or underdeveloped in the critical literature (although see Blaikie, 2012). We use this conclusion to address this gap by considering some of the benefits of pursuing strategies that develop better links between critical academics and practice-oriented researchers.

First, such engagement lessens the chance of perverse outcomes from research. If we take as given that those working on REDD+ share a collective interest in reducing deforestation, then care must be taken that detached critique does not detract from these shared goals by creating unacceptable risks for well-designed projects. Simply critiquing REDD+, and thereby lessening its appeal, without considering the broader context of deforestation and marginalisation, may have unintended adverse outcomes for those interested in social and environmental justice. Seymour and Angelsen (2012: 333) comment that:

[i]t would be ironic, and tragic, if relatively benign land uses arising from REDD+ (from the perspective of social and environmental impacts) were to lose out to the wholesale conversion of forests – and often, dispossession of communities – associated with commercial-scale agribusiness and mining because REDD+ was seen as too risky.

In reconciling action and critique, more rigorous research projects can be developed and the impacts of critical research can be steered towards more constructive outcomes. Critical researchers increasingly 'dare to intervene' in search of progressive possibilities (Gibson-Graham, 2005; McGregor, 2009); rather than detaching and dismissing, critique can be redirected 'not away but toward' shared matters of concern (Latour, 2004: 246 emphasis in the original).

A related benefit is a broadened perspective. The critical academics in our group focused their attention on issues of power, marginalisation and justice with regard to REDD+; all worthy subjects of ongoing analysis. Practice-oriented researchers were interested in similar issues, although framed in different ways – constructed in terms of benefit sharing and safeguards. Improved knowledge of each other's work provides opportunities for more refined and practical critique, and enhanced possibilities for constructive change. Hence, the practice-oriented researchers were quick to point out that while the social and environmental practices of REDD+ will always have weaknesses, they are far more advanced than the safeguards embedded in extractive industries. The degree of diligence, transparency, disci-

pline, measurement, evidence, reporting, verification, and all manner of quality control and quality assurance action required to secure finance for REDD+ is much higher than what is required of logging companies, palm oil producers and developers. Broadened perspectives encourage comparative forms of critical research in which the goal is to compare different types of human–forest relationships and to engage in ways that strengthen, rather than weaken, the most socially and environmentally just ones. For example, critical academics concerned with REDD+ can ask whether the potential collapse of the KFCP project in Central Kalimantan, mentioned earlier, is a better or worse result than the successful sale of carbon credits associated with the Rimba Raya project. Which outcome provides more possibilities for the realisation of critical goals around social and environmental justice? And crucially, how can critical academic work be steered towards the realisation of those goals?

A third advantage relates to relevance. Different types of research have different roles, with only some having the capacity to directly influence decision-makers dealing with contemporary social–ecological issues. Research engaging with practical critique has no guarantee of making a difference, but it does potentially heighten the relevance of the research for decision-makers and it encourages the use and development of experimental channels, like those described above, to influence practice and policy communities. In seeking to influence practice-oriented research, critical researchers must tread a pathway between lofty ideals and lived realities (see Blaikie, 2012). This does not mean compromising on ideals, but instead pursuing practical ways of working towards them. For O'Brien (2012), it is not enough for critical researchers to simply point out the devastation being wreaked on people and the planet, the challenge is to find creative ways of pursuing change. Forging greater collaborations and understanding between critical academics and practice-oriented research communities may be one small step towards addressing this challenge.

As such, we conclude by encouraging greater collaboration between critical research and practice-oriented research communities, not just in relation to REDD+ but in a wide range of

sectors. Through bridging critical/practice divides by forming genuine partnerships of differently positioned researchers, critical and practical interests can be raised and pursued, and perverse or unintended impacts of research avoided. This is not to merge different approaches into one, but instead to draw upon the different strengths of each to pursue progressive outcomes in theory and practice. It is this approach that underpins the strategy of the research project from which this paper arises. It has not always been easy, but there can be no doubt it has been beneficial in terms of research quality, understanding and impacts.

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Note

- 1 In May 2013, the Constitutional Court of Indonesia accepted the Judicial Review of Basic Forestry Law brought forward by Indigenous People's Alliance of the Archipelago (AMAN) and two indigenous communities. The judicial review has resulted in *hutan adat* (customary forests) being categorised as *hutan hak* (proprietary forests) rather than *hutan negara* (State forests).

References

- Agrawal, A. and C. Gibson (1999) Enchantment and disenchantment: The role of community in natural resource conservation, *World Development* 27(4): 629–649.
- Agrawal, A. and C. Gibson (eds.) (2001) *Communities and the environment: Ethnicity, gender, and the state in community-based conservation*. Piscataway, New Jersey: Rutgers University Press.
- Angelsen, A. and D. McNeill (2012) The evolution of REDD+, in A. Angelsen, M. Brockhaus, W.D. Sunderlin and L.V. Verchot (eds.), *Analysing REDD+: Challenges and choices*, pp. 31–49. Bogor: Center for International Forestry Research (CIFOR).
- Astuti, R. and A. McGregor (forthcoming) REDD+ governmentality in Indonesia: Governing forest carbon through the REDD+ Task Force, *Asia Pacific Viewpoint* 56(1).
- Baker, D.J., G. Richards, A. Grainger *et al.* (2010) Achieving forest carbon information with higher certainty: A five-part plan, *Environmental Science and Policy* 13(3): 249–260.
- Blaikie, P. (2012) Should some political ecology be useful? The Inaugural Lecture for the Cultural and Political Ecology Specialty Group, Annual Meeting of the Association of American Geographers, April 2010, Geoforum, *Journal of Physical, Human, and Regional Geosciences* 43(2): 231–239.
- Blom, B., T. Sunderland and D. Murdiyarso (2010) Getting REDD to work locally: Lessons learned from integrated conservation and development projects, *Environmental Science and Policy* 13(2): 164–172.
- Blomley, N. and J. Sommers (1999) Mapping urban space: Governmentality and cartographic struggles in inner city Vancouver, in R.C. Smandych (ed.), *Governable places: Readings on governmentality and crime control*, pp. 261–286. Aldershot: Dartmouth Publishing Co.
- Bridge, G. (2011) Resource geographies 1: Making carbon economies, old and new, *Progress in Human Geography* 35(6): 820–834.
- Brown, K. (2002) Innovations for conservation and development, *Geographical Journal* 168(1): 6–17.
- Brown, M. (2013) *Redeeming REDD: Policies, incentives and social feasibility for avoided deforestation*. Abingdon: Routledge.
- Büscher, B., S. Sullivan, K. Neves, J. Igoe and D. Brockington (2012) Towards a synthesized critique of neoliberal biodiversity conservation, *Capitalism Nature Socialism* 23(2): 4–30.
- Castree, N. (2010a) Neoliberalism and the biophysical environment 1: What 'neoliberalism' is, and what difference nature makes to it, *Geography Compass* 4(12): 1725–1733.
- Castree, N. (2010b) Neoliberalism and the biophysical environment 2: Theorising the neoliberalisation of nature, *Geography Compass* 4(12): 1734–1746.
- Chapin, M. (2004). A challenge to conservationists. *Worldwatch Magazine*, Nov.–Dec., 17–31.
- Corbera, E. (2012) Problematizing REDD+ as an experiment in payments for ecosystem services, *Current Opinion in Environmental Sustainability* 4(6): 612–619.
- Crampton, J. (2003) *The political mapping of cyberspace*. Chicago, Illinois: University of Chicago Press.
- den Besten, J.W., B. Arts and P. Verkooijen (2014) The evolution of REDD+: An analysis of discursive-institutional dynamics, *Environmental Science & Policy* 35: 40–48.
- Dixon, R. and E. Challies (forthcoming) Making REDD+ pay: Shifting rationales and tactics of private finance and the governance of avoided deforestation in Indonesia, *Asia Pacific Viewpoint* 56(1).
- Dutschke, M. and A. Angelsen (2008) How do we ensure permanence and assign liability?, in A. Angelsen (ed.), *Moving ahead with REDD: Issues, options and implications*, pp. 77–86. Bogor: Center for International Forestry Research (CIFOR).
- Estrada, M. and S. Joseph (2012) Baselines and monitoring in local REDD+ projects, in A. Angelsen, M.

- Brockhaus, W.D. Sunderlin and L.V. Verchot (eds.), *Analysing REDD+: Challenges and Choices*, pp. 247–260. Bogor: Center for International Forestry Research.
- Fairhead, J., M. Leach and I. Scoones (2012) Green grabbing: A new appropriation of nature?, *Journal of Peasant Studies* 39(2): 237–261.
- Ferguson, J. (2009) The uses of neoliberalism, *Antipode* 41: 166–184.
- Foucault, M. (2007) *Security, territory, population: Lectures at the college de France*, G. Burchell, Trans, pp. 1977–1978. New York: Palgrave MacMillan.
- Gibson-Graham, J.K. (2005) Surplus possibilities: Postdevelopment and community economies, *Singapore Journal of Tropical Geography* 26(1): 4–26.
- Gibson-Graham, J.K. (2008) Diverse economies: Performative practices for 'other worlds', *Progress in Human Geography* 32(5): 613–632.
- Gupta, A., E. Löwbrand, E. Turnhout and M.J. Vijge (2012) In pursuit of carbon accountability: The politics of REDD+ measuring, reporting and verification systems, *Current Opinion in Environmental Sustainability* 4(6): 726–731.
- Haalboom, B.J. and L.M. Campbell (2012) Scale, networks, and information strategies: Exploring indigenous peoples' refusal of a protected area in Suriname, *Global Networks* 12(3): 375–394.
- Hall, D. (2012) Rethinking Primitive Accumulation: Theoretical Tensions and Rural Southeast Asian Complexities, *Antipode* 44(4): 1188–1208.
- Hardt, M. (2011) The militancy of theory, *South Atlantic Quarterly* 110(1): 19–35.
- Herold, M., A. Angelsen, L.V. Verchot, A. Wijaya and J. Ainembabazi (2012) A stepwise framework for developing REDD+ reference levels, in A. Angelsen, M. Brockhaus, W.D. Sunderlin and L.V. Verchot (eds.), *Analysing REDD+: Challenges and choices*, Bogor: Center for International Forestry Research.
- Herold, M. and M. Skutsch (2009) *Measurement, reporting and verification for REDD+: Objectives, capacities and institutions realising REDD+: National Strategy and policy options*, Bogor: Center for International Forestry Research.
- Hiraldo, R. and T. Tanner (2011) Forest voices: Competing narratives over REDD, *IDS Bulletin* 42(3): 42–51.
- Howson, P. and S. Kindon (forthcoming) Analysing local powers of access to REDD+ benefits in Sungai Lamandau, Central Kalimantan, Indonesia, *Asia Pacific Viewpoint* 56(1).
- Igoe, J. and D. Brockington (2007) Neoliberal conservation: A brief introduction, *Conservation and Society* 5(4): 432–449.
- IPCC (2006) *IPCC guidelines for national greenhouse gas inventories: Volume 4 – Agriculture, forestry and other land use*. Kanagawa: Intergovernmental Panel on Climate Change (IPCC), National Greenhouse Gas Inventories Programme.
- ISO (2006) *14064-2:2006 Greenhouse Gases – Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements. First Edition 2006-03-01*. Geneva: International Organization for Standardization (ISO).
- Kellert, S.R., J.N. Mehta, S.A. Ebbin and L.L. Lichtenfeld (2000) Community natural resource management: Promise, rhetoric, and reality, *Society & Natural Resources* 13(8): 705–715.
- Latour, B. (2004) Why has critique run out of steam? From matters of fact to matters of concern, *Critical Inquiry* 30(2): 225–248.
- Li, T.M. (2002) Engaging simplifications: Community-based resource management, market processes and state agendas in upland Southeast Asia, *World Development* 30(2): 265–283.
- Li, T.M. (2007) *The will to improve: Governmentality, development, and the practice of politics*. Durham: Duke University Press.
- Lohmann, L. (2008) Carbon trading, climate justice and the production of ignorance: Ten examples, *Development (Cambridge, England)* 51: 359–365.
- Lovell, H. (2014) Measuring forest carbon, in J. Stripling and H. Bulkeley (eds.), *Governing the climate: New approaches to rationality, power and politics*, pp. 175–196. New York: Cambridge University Press.
- McCarthy, J.F., J.A.C. Vel and S. Afiff (2012) Trajectories of land acquisition and enclosure: Development schemes, virtual land grabs, and green acquisitions in Indonesia's Outer Islands, *The Journal of Peasant Studies* 39(2): 521–549.
- McGregor, A. (2009) New Possibilities? Shifts in Post-Development Theory and Practice, *Geography Compass* 3(5): 1688–1702.
- McGregor, A. (2010) Green and REDD: Towards a political ecology of deforestation in Aceh, Indonesia, *Human Geography* 3(2): 21–34.
- McGregor, A., E. Challies, P. Howson et al. (forthcoming) Beyond carbon, more than forest?: REDD+ governmentality in Indonesia? REDD+ governmentality in Indonesia, *Environment and Planning A*. In press.
- Nadasdy, P. (1999) The politics of TEK: Power and the 'integration' of knowledge, *Arctic Anthropology* 36(1–2): 1–18.
- Newell, P. and M. Paterson (2010) *Climate capitalism: Global warming and the transformation of the global economy*. Cambridge; New York: Cambridge University Press.
- O'Brien, K. (2012) Global environmental change III: Closing the gap between knowledge and action, *Progress in Human Geography* 37(4): 587–596.
- Okereke, C. and K. Dooley (2010) Principles of justice in proposals and policy approaches to avoided deforestation: Towards a post-kyoto climate agreement, *Global Environmental Change* 20(1): 82–95.
- Pearse, R. (2012) Mapping REDD in the Asia-Pacific: Governance, marketisation and contention, *Ephemera: Theory & politics in organization* 12(1–2): 181–205.
- Peluso, N.L. (1995) Whose woods are these? Counter-mapping forest territories in Kalimantan, Indonesia, *Antipode* 27(4): 383–406.
- Penman, J.M., M. Gytarsky, T. Hiraishi et al. (2003) *Good Practice guidance for land use, land use change and forestry. IPCC national greenhouse gas inventories*

- programme. Hayama: Institute for Global Environmental Strategies for the IPCC.
- Plan Vivo (2013) *The Plan Vivo Standard for community payment for ecosystem services programmes. Version 2013*. Edinburgh: Plan Vivo.
- Redford, K.H. and W.M. Adams (2009) Payment for ecosystem services and the challenge of saving nature, *Conservation Biology* 23(4): 785–787.
- Rutherford, S. (2007) Green governmentality: Insights and opportunities in the study of nature's rule, *Progress in Human Geography* 31(3): 291–307.
- Schlosberg, D. (2007) *Defining environmental justice: Theories, movements, and nature*, Oxford: Oxford University Press.
- Seymour, F. and A. Angelsen (2012) Summary and conclusions: REDD without regrets, in A. Angelsen, M. Brockhaus, W.D. Sunderlin and L.V. Verchot (eds.), *Analysing REDD+: Challenges and choices*, pp. 317–334. Bogor: Center for International Forestry Research (CIFOR).
- Spash, C.L. (2010) The brave new world of carbon trading, *New Political Economy* 15(2): 169–195.
- Stern, N.H. (2007) *The economics of climate change: The stern review*. Cambridge: Cambridge University Press.
- Streck, C. and C. Parker (2012) Financing REDD+, in A. Angelsen, M. Brockhaus, W.D. Sunderlin and L.V. Verchot (eds.), *Analysing REDD+: Challenges and choices*, pp. 111–127. Bogor: Center for International Forestry Research (CIFOR).
- Stripple, J. and H. Bulkeley (eds.) (2014) *Governing the climate: New approaches to rationality, power and politics*. New York: Cambridge University Press.
- UNEP (2011) *Towards a green economy: Pathways to sustainable development and poverty eradication*, Nairobi: United Nations Environment Programme (UNEP).
- UNFCCC (2011) Decision 1/CP.16. *Outcome of the work of the Ad Hoc Working Group on long-term Cooperative Action under the Convention. Paragraph 70. FCCC/CP/2010/7/Add.1. 15 March 2011*. New York: United Nations Framework Convention on Climate Change (UNFCCC).
- VCS (2011) *VCS Standard. VCS Version 3 Requirements Document, 8 March 2011, v3.0*. Washington.
- Walhi. (2012) *Antara Harapan dan Kenyataan: Melihat Implementasi Inpres Moratorium di Kalimantan Tengah. Lingkaran Belajar Keadilan Iklim Walhi Kalimantan Tengah*. Bogor: Lingkaran Belajar Keadilan Iklim Walhi Kalimantan Tengah.
- Wertz-Kanounnikoff, S., M. Kongphan-Apirak and S. Wunder (2008) *Reducing forest emissions in the Amazon Basin: A review of drivers of land-use change and how payments for environmental services (PES) schemes can affect them*. Bogor: Center for International Forestry Research (CIFOR).
- Woodyer, T. and H. Geoghegan (2012) (Re)enchanted geography? The nature of being critical and the character of critique in human geography, *Progress in Human Geography* 37(2): 195–214.
- Wunder, S. (2008) How do we deal with leakage?, in A. Angelsen (ed.), *Moving ahead with REDD: Issues, options and implications*, pp. 65–77. Bogor: Center for International Forestry Research.