

Goldsmiths Research Online

*Goldsmiths Research Online (GRO)
is the institutional research repository for
Goldsmiths, University of London*

Citation

Ehrenstein, Vera. 2018. Carbon sink geopolitics. *Economy and Society*, 47(1), pp. 162-186. ISSN 0308-5147 [Article]

Persistent URL

<https://research.gold.ac.uk/id/eprint/23443/>

Versions

The version presented here may differ from the published, performed or presented work. Please go to the persistent GRO record above for more information.

If you believe that any material held in the repository infringes copyright law, please contact the Repository Team at Goldsmiths, University of London via the following email address: gro@gold.ac.uk.

The item will be removed from the repository while any claim is being investigated. For more information, please contact the GRO team: gro@gold.ac.uk

Carbon sink geopolitics

Véra Ehrenstein, Sociology, Goldsmiths College

v.ehrenstein@gold.ac.uk

Published in *Economy and Society*, 2018, vol. 47, issue 1, pp. 162-186

Abstract

This paper offers an example of global politics in action by attending to the modalities and outcomes of United Nations negotiations on global warming. More precisely, the paper ethnographically traces how the capacity of tropical forests to be carbon sinks is turned into a matter of global concern. The focus is on a negotiated policy called Reducing Emissions from Deforestation and forest Degradation (REDD+) and its anchoring in the Democratic Republic of the Congo whose territory contains the second largest area of rainforest after Brazil. The paper proposes to discuss the importance of the promissory in climate actions, the multivalence of what is at stake and the porosity and resilience of national demarcation. To do so, it identifies three moments and sites of geopolitical re-composition: the formulation of international consensus, the work of preparatory agents, and the quest for metrological inclusiveness. These moments and sites point to the theatricality and semi-secrecy of United Nations negotiations, the mobilizing activity of expatriate consultants hired with overseas aid funding, and the unstable evidential grounds on which emission reduction efforts are based. The paper suggests that through this series of processes, the carbon stored by tropical forests becomes a matter of global exigency.

Keywords: geopolitics; global exigency; negotiations; climate change; tropical deforestation; carbon markets.

Global warming due to human-induced greenhouse gas emissions is a central problem of our age. As we start bearing witness to rising sea levels, species loss and extreme weather patterns, these harmful consequences are only set to intensify (Pachauri *et al.*, 2014). Networks of meteorological stations, models running on supercomputers, and the Intergovernmental Panel on Climate Change (IPCC) have all been crucial in establishing this new matter of concern; and in the social sciences, a large body of work has been dedicated to the production and contestation of climate facts (e.g., Van der Sluijs *et al.*, 1998; Demeritt, 2006; Edwards, 2010; Wynne, 2010; Oreskes, 2011; O'Reilly *et al.*, 2012). International action deployed in response to this evidence-base has, however, tended to elude empirical attention. From a distance, United Nations negotiations on global warming look cumbersome and useless when contrasted with the sense of urgency found in IPCC assessments. Yet, year after year, delegates gather in conference centres, fight over words, and celebrate consensus. In this paper I thus propose to get closer to what is at stake in these tergiversations precipitated by the evidential practices of climatologists.

Meetings of the Conference of the Parties, the assembly of all nation-states having ratified the 1992 United Nations Framework Convention on Climate Change (UNFCCC), are not entirely reducible to endless discussion about long-term targets.

Debate can also aim to devise interventions on specific problems. ‘REDD+’ - an acronym standing for ‘policy approaches and positive incentives on issues relating to Reducing Emissions from Deforestation and forest Degradation [REDD]; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries [+]

 - is such an intervention and the topic of the paper. Neither a legislative body, nor a series of diplomatic rendezvous, the Conference of the Parties is a negotiation platform whose authority is, however, quite precarious (Yamin & Depledge, 2004); it has effect only if an agreement reached by a few individuals standing for sovereign nations survives beyond a piece of paper, an uncertain process illustrated here by the tentative emergence of REDD+.ⁱ

From the start, the UN process has assigned roles and obligations in the collective action to address global warming. When the foundational principle of ‘common but differentiated responsibilities’ initially tasked so-called developed nations with preventing further accumulation of atmospheric CO₂ (United Nations, 1992), the involvement in emission reduction efforts of so-called developing nations has gradually become a preeminent and sensitive theme (Bodansky, 2010). REDD+, or the negotiation around tropical forests as carbon sinks, was the first attempt to move in this direction. Simply put, trees are made of carbon they absorb while growing. In this light, tropical forests become valuable stocks of carbon whose existence in the future should be maintained, even enhanced. Since discussion on REDD+ begun in 2005, negotiators have not contested that forests are critical to our climate.ⁱⁱ Their disputes have rather revolved around how to act accordingly. How are reductions in deforestation and CO₂ emissions to be achieved and calculated? Who ought to participate in policy-making? What sort of incentives would be provided, by whom, to whom, according to what conditions? While none of these questions has received clear-cut answers, interventions in the name of REDD+ have been popping up across the world in the early 2010s, including in the Democratic Republic of the Congo (DRC) - where this paper will take us.

But before turning to the empirical narrative, I propose first to discuss further some characteristics of this global politics. Despite what social scientists seem to expect, especially those facing climate denial in the United States (Oreskes, 2011), agreeing with scientific evidence published by the IPCC does not put an end to debate regarding global warming. Addressing the problem also implies the disputed negotiation of new international relations. To describe this process, I will pursue the move made by Barry (2001, 2013a) when he explores the making of political assemblages, like European standards of air quality or transnational energy infrastructures, with a focus on the devices, skills, and materiality involved. In particular, Barry’s work considers the ways in which things (chemical molecules, construction materials, etc.) are turned into ‘objects of international dispute’, things whose ‘material existence can itself become a political matter’ (2013b, p. 421). The CO₂ absorbed by trees is precisely such an object of international confrontation. In this kind of disagreement mediated by scientific facts and technical instruments, ‘political experts’ and their specific know-how play an important part (Barry, 2013b, p. 423); and to understand the power of evidential practices, these must be considered in relation to the art of political speech, the staging of unity or contention, and the organization of deliberation. In the case of climate action, the IPCC does provide authoritative numbers (e.g., carbon emissions due to tropical deforestation), but the global evidence is only a starting point for a slow, messy, and distributed negotiation process that mobilizes measurements and calculations in instrumental manners.ⁱⁱⁱ

It follows that the main protagonists in this paper are not scientists and their models, but civil servants, consultants, and activists skilled in and committed to advocacy, the decision-making style of the United Nations, and the set-up of overseas aid programmes.^{iv} I suggest that exploring what these actors do can foreground three key aspects of REDD+ politics: the importance of the promissory, the multivalence of what is at stake, and the porosity and resilience of national demarcation.

With a negotiated policy anticipating the linkage of financial incentives to evidence of emission reductions, standing trees could bring substantial revenues to poor nations, or so it seems. In her work on oil in Sao Tomé e Príncipe, Weszkalnys (2011) shows how the mere prospect of the natural resource stimulates what she calls ‘an economy of expectations’ (p. 349). This economy is fed by overseas aid interventions trying to establish the legal and institutional conditions for the proper management of the potential forthcoming income. The status of forests as carbon sinks generates, we will see, comparable preparatory actions and promises of reward based on fragile evidential grounds. Promissory actions have thus been identified in extractive industries (Tsing, 2005; Weszkalnys, 2011, 2015) and macroeconomic policies (Guyer, 2007). Here they are witnessed in the case of an environmental concern (deforestation and emissions) turned into an economic opportunity, a process comparable to addressing biodiversity loss by ‘enterprising nature’ as examined in Dempsey (2016). The overseas aid consultants I observed working in Kinshasa do not deny the dark predictions of a warming climate laid out by the IPCC. But when they enrol sponsors and envision interventions, they conjure up bright, economized futures that would be brought about by Congolese forests becoming valuable carbon sinks - with an optimism even they acknowledge to be slightly unrealistic. While DRC is usually known as the top rank in poverty, corruption, and violence indexes, REDD+ seems to promise to change its ‘place-in-the-world’ (cf. Ferguson, 2006). This optimistic unrealism, its pledges and the expectations they create, aim to start off a mobilization; whether such a motivational technique can prime profound changes is then another question.^v

Politics here is of a rather traditional sort, with people speaking on behalf of nations, voicing unsubstantiated claims about things to come, and defending universal causes. The paper only counts few instances of what Marres (2007) would call ‘object-oriented politics’, wherein things (e.g., the shape of a plantation) and daily routines (e.g., the consumption of charcoal) become the locus of political engagement for the climate. The tergiversations around REDD+ seem actually less preoccupied with achieving tangible transformations than promising to encompass a vast range of aims, actors and interests. Global exigency in relation to climate action implies a requirement for being worldwide and comprehensive. To this effect, the negotiation process organizes ‘spaces of multi-valent action’, to use Marres’ terms again (2011, p. 520; see also Callon, 2009). Attending to REDD+ inside and outside conference centres shows that the carbon stored in tropical forests has been associated in different ways with diverse concerns (e.g., national sovereignty, development, forest dwellers’ rights). Multivalence, we will see, is the outcome of a certain art of ambiguity in the iterative search for consensus; it is a way to acknowledge the complexity of such problems as deforestation and global warming, but it also tends to put the need to limit CO₂ emissions at risk of being superseded by other priorities.

Drawing from an ethnographic engagement with UN-based decision-making and efforts to reduce forest-related CO₂ emissions in DRC, this paper seeks to locate the global, trace connections and attend to friction. The approach is inspired by Tsing (2005) and her stories of Borneo’s forests drawn into environmental campaigns and

timber trade that highlight the contingent making of fragile links, ‘across distance and difference’, through which universals like prosperity or freedom travel, change, and anchor themselves in particular places. The ‘global connections’ Tsing describes cross, blur, assert geographical and institutional boundaries; they point, I suggest, to the porosity and resilience of national demarcation in processes of globalization. Similarly, with the case of REDD+, this paper will show that, if sovereign nations endure as the public-facing entities in negotiation, alternative arrangements are woven around the capacity of trees in the tropics to absorb carbon. Relations emerge that are inter-national, in that they develop between nations partly by means of an attracting force which is distinct from national sovereignty, a (timid) multivalent concern for earthly things.^{vi} Talking of geopolitics is how I propose to capture the carving of interstices in which a disputed, future-oriented togetherness takes shape around tropical forests and their carbon. These geopolitical re-compositions occur at specific moments and in specific sites that I will now explore: namely, the formulation of international consensus; the work of preparatory agents; and the quest for metrological inclusiveness.

The formulation of international consensus

Meetings of the Conference of the Parties to the UNFCCC are the best place to start analysing the emergence of REDD+ and talk about geopolitical re-composition.^{vii} Negotiations also happen in the meantime, during intermediate gatherings and maybe *via* diplomatic bargains unrelated to CO₂. But annual sessions are when international agreements are settled. Initiated in the mid-1990s, they have become routinized gatherings, attended by thousands of individuals travelling from across the world and commented on by the media. Year after year, these events assert a collective willingness to consider the problem of global warming despite divergences on how this must be done, as we will see here in the case of carbon emissions from tropical forests.

United Nations politics entails a form of theatricality through which internationality is enacted. A meeting of the Conference of the Parties always begins with plenaries convened in a conference centre, be it in Kyoto, Marrakech, or Paris. A few individuals from each of the 194 delegations sit for hours behind their ‘flag’, a sign on which the nation they personify is inscribed and that they wave to be allowed to speak in one of the six UN official languages. The succession of messages, some evoking threats and damages associated with a changing climate, embodies the assembly of all Parties that agreed on the treaty designating global warming as ‘a common concern of humankind’ (United Nations, 1992, p. 1). The ritual opens the negotiation. The assembly is gathered again at the end of the session to take decisions on behalf of the Conference of the Parties. Texts are usually brought to the final plenary if general assent has been secured first, and the closing moment ought to be a formality. Yet, in 2010, Bolivian delegates and the country’s President used the occasion to loudly reject what would become the Cancun Agreements. Relayed in the media (at least in British newspapers, see Randerson *et al.*, 2010; Vidal, 2010), the protest was a proper happening in spite of which the Mexican minister of foreign affairs who was chairing this annual negotiation session banged her gavel to declare consensus.^{viii} The diplomatic drama is interesting for us because it was partly triggered by REDD+.

In the UNFCCC archive, the REDD+ paper trail starts in 2005 with a proposal by Papua New Guinea and Costa Rica on behalf of half a dozen of other nations, including DRC.^{ix} At the centre of the initiative were two research and policy organizations, one American, the other Brazilian, and an eloquent New-York-based lawyer representing Papua New Guinea who quickly became a public figure of the negotiation.^x The text suggested dedicating a negotiation track to tropical deforestation, as the phenomenon had been found responsible in the 1990s for 10 to 25 per cent of global anthropogenic emissions, according to the IPCC (UNFCCC, 2005, p. 3). Developing nations had never before publicly acknowledged that their own CO₂ could be a problem. Deforestation, the proposal went on, was due to ‘the absence of revenues streams from standing forests’ (UNFCCC, 2005, p. 4), and a solution could be to enable governments to calculate reductions in deforestation rates and emission levels and sell them as offsets to developed nations committed by the Kyoto Protocol to limit their emissions.

Delegating emission reduction efforts to tropical forests was not, however, a totally new idea. Negotiators have talked about it as early as 1992 (Grubb *et al.*, 1993). The 1995 IPCC assessment construed forestry activities in low income regions as simple and cheap offsetting means (conserving a piece of forest at risk of being logged could compensate for the CO₂ of a coal plant at a lower cost than reducing the emission source), and pilots were implemented in Central America (Moura-Costa & Stuart, 1998). At the negotiation session in 1997, developed nations agreed to comply with emission limits in a new treaty, the Kyoto Protocol, which envisioned several trading schemes to facilitate their task (Grubb *et al.*, 1999). In particular, the Clean Development Mechanism was established to allow emission reductions from clean activities carried out in developing nations to partially compensate for CO₂ liberated by industrial processes in developed nations. The Conference of the Parties thus endorsed the practice of offsetting, but tropical forests were given a marginal role. Several delegations, Brazil notably, had relentlessly argued that the use of forests for development purpose is a sovereign matter, that trees’ capacity to absorb carbon is not permanent because they die, and that conservation activities displace rather than avoid deforestation (Fry, 2002). Eventually, only plantations were authorized in the emerging offset market. This dispute shaped REDD+; in the proposal mentioned above that seemed to promise the end of tropical forest loss, the national territory instead of small-scale areas was to be the unit for measuring results and distributing rewards, serving to reassert national demarcations in a global politics.

RED (for ‘reducing emissions from deforestation’) was put on the negotiation agenda in 2007, later replaced by REDD (a second ‘D’ for ‘and forest degradation’) and REDD+ (‘+’ for ‘and conservation, sustainable management of forests and enhancement of forest carbon stocks’). Gradually the topic was endowed with various aims and requirements. The Conference of the Parties invited nations willing to benefit from monetary rewards to compute baselines of deforestation and emission levels and equip themselves with monitoring and reporting systems in order to assess changes in forest cover and carbon stocks. It also emphasized that in domestic actions to reduce forest loss, local communities should be consulted with, indigenous rights respected, and biological diversity protected. As negotiators speaking on behalf of poor nations requested that resources were quickly made available, it became clear that a preparatory phase financed by wealthy donor governments was necessary before the carbon stored in tropical forests could be routinely accounted for. REDD+ progressively turned into a multivalent matter, enmeshed with overseas aid, the defense of human rights, and the protection of nature.^{xi}

Over time, one aspect of REDD+ persisted: securing the future of tropical forests would entail financial flows from developed to developing nations, only the modalities of these incentivizing transfers were debated.^{xii} The offsetting option initially suggested did not disappear, neither was it positively endorsed. In Cancun in 2010, the point was surrounded by vagueness because delegations were polarized. Some supported international carbon trading, like the Coalition for Rainforest Nations formed around the 2005 proposal and counting a fluctuating membership of 20 to 50 nation-states five years later.^{xiii} Others fiercely opposed it, like Brazil and the Bolivarian Alliance for the Peoples of our America, arguing that offsets would divert developed economies from bearing their historical responsibility for global warming. The Cancun Agreements eventually tasked negotiators ‘to explore financing options’ (UNFCCC, 2014, p. 9). Bolivian negotiators publicly opposed the text at the closing plenary because they disagreed with the latent possibility of the promised incentives being linked to market transactions, while their former allies seemed content with the noncommittal wording.

The development of REDD+ presented so far already suggests that science remains very much in the background at UN meetings. IPCC’s numbers did help to establish the carbon emitted by tropical deforestation as a new concern, but the latter really intensified once brought into the negotiation process. And when the American lawyer-negotiator for Papua New Guinea would speak on behalf of the Coalition for Rainforest Nations, his word weighed heavily in part because he potentially stood for more than four hundred million hectares of forests - principally in DRC and Indonesia and as quantified by remote sensing techniques - but also because he had mastered United Nations decision-making style. In climate international gatherings, debates are not about scientific evidence. Rather, their focus is on future financial transfers and how tropical forests ought to be enrolled in such promissory transactions.

Meetings of the Conference of the Parties have actually engendered a specific field of know-how: the negotiation itself. Negotiators must master the history of a negotiated item, the format of UNFCCC decisions (numbered paragraphs introduced with action verbs like urge, request, invite, etc.) and the art of what they call ‘constructive ambiguity’.^{xiv} Ambiguous wording is crafted during the ‘informals’ taking place between the opening and closing plenaries. Informals bring together an *ad hoc* group of delegates specialized in an item, for example REDD+, and concerned by its topic, tropical forests as carbon sinks. Debates, now only in English, are orchestrated at the discretion of a chairwoman, who momentarily abandons her national affiliation to work with UN staff on building consensus. For the Filipino delegate who skillfully chaired the informals on REDD-plus financing in 2011, the *ad hoc* assembly of the 50 or so political professionals formed a ‘big family’. Informals provide a physical and temporal space wherein acquainted delegates unknown to the general public acquire some freedom from the countries they represent to engage in alliances and compromises beyond national differences. The dismissal of Bolivia’s objection in 2010 had actually seemed justified by the aggressiveness and isolation of its representatives.

Besides its theatricality, United Nations politics is also quite opaque. Informals are not *a priori* accessible to the media and accredited non-state observers, with security guards carefully enforcing the rule based on the colour of participants’ badges. The Conference of the Parties openly operates in secrecy; or rather semi-secrecy, as members of advocacy organizations can infiltrate national delegations. For example, an activist in charge of Greenpeace’s forest campaign in the Congo Basin attended the Durban meeting in 2011 as a Belgian representative. The undercover

environmentalist speaking on behalf of the world's forests did not directly negotiate. She only updated Greenpeace members and other observers stayed outside the negotiation room who could pester and pressure delegates. The reference in REDD+ to biological diversity and indigenous rights is attributed to this active interference. In Durban, based on its insider's information, Greenpeace thus convened a press conference to denounce the behaviour of Colombian delegates in the informals on REDD+ financing. A satirical cartoon was distributed showing them as greedy ducks defending carbon trading for personal enrichment purposes. But this time, negotiators unanimously condemned the act. The shaming tactic, classic in activist politics^{xv}, could further polarize the debate and jeopardize the possibility of an agreement. The governmental-nongovernmental boundary could be partially blurred as long as a form of confidentiality was ensured.

Before it is publicly voiced, the word of the United Nations is disputed term by term. Proposals are put forward, paragraphs and words introduced, deleted, or placed in brackets if contentious (cf. Riles, 2001). Distinct options take shape, ephemeral coalitions form behind them, and a few individuals end up writing for the whole world. In 2011, French representatives had a mandate: given the public debt crisis, REDD+ funding should be private and authorize offsets. But because the European Union negotiates as one body, this view had to be nuanced. Other European delegates, more critical of carbon offsetting, wanted to support the 'non-market mechanism' just proposed by Bolivia, which eventually joined the possibility of markets in what became the 'European option'. During the whole meeting, Bolivian negotiators received special attention because, in the negotiations' spirit of inclusiveness, nobody wanted a repeat of the public protest that happened the year before in Cancun. At some point, the informals became a bilateral negotiation between the spokesperson of the Coalition for Rainforest Nations supporting the European option and the Brazilian delegation whose alternative option, backed by Bolivia, defended the non-market mechanism and rejected offsets. The night before the end of the session, a consensual one-page text was finally obtained and celebrated with hugs, tears and beers by the dozen negotiators most actively engaged in building consensus. Endorsed at the final plenary, the document agreed that both market and non-market approaches could be developed (UNFCCC, 2014, p. 15). If the decision seems not to say much, delegates accustomed to deciphering UN wording read the 'language on markets' as 'weak' because no actionable mechanism was in sight, although offsetting had not been excluded either, and REDD+ still remained a promise.

International consensus, as this section has shown, is a matter of iteration which relies on both theatricality, to stage an international assembly, and discretion, to craft agreements across national demarcations. The results of these moments of geopolitical re-composition are minimal and ambiguous decisions. No coercive action has been taken with REDD+, such as a global ban on specific deforestation practices. Rather, we encounter a transactional and promissory politics, framed in terms of incentive, support, and actions to occur in an indeterminate future. Meetings of the Conference of the Parties aimed, it seems, to create a collective that disagrees on many things but shares a concern, here for tropical forests and their carbon, and a commitment to the possibility of deliberation. As it enacts such a requirement for being global, the formulation of international consensus leads to vague, multivalent prescriptions. How these move outside conference centres is what will now be examined.

The work of preparatory agents

A different site of geopolitical re-composition comes into focus here: Kinshasa, the capital city of a nation, DRC, whose territory contains vast areas of rainforest (the second largest after Brazil), about which, however, little scientific knowledge has been produced. Since 2007, when CO₂ emissions from deforestation officially became a problem, the Conference of the Parties repeatedly requested developed nations to orient overseas aid towards REDD+. International transfers of financial and technical resources should now consider tropical forests as carbon sinks. REDD+ and its promissory politics thus have also been taking shape beyond conference centres, in particular through so-called readiness processes.

In 2011, REDD-plus was a major topic of conversation in Congolese ministerial circles. The interest was sustained by the work of a few expatriates belonging to 'the REDD National Coordination'. Set up in 2009, this technical secretariat was composed of a dozen members, referred to as national (Congolese) and international (foreign) consultants. The physical existence of offices, computers and Wi-Fi in a rented building, staff hired on an annual basis with salaries by far exceeding the meagre unreliable wages of the public sector, all depended on fixed-term foreign funding in the form of readiness grants. The grants were provided by two multilateral programmes, one managed by the World Bank and the other by UN agencies.^{xvi} Though their governance was independent from the UNFCCC process, the funding schemes proposed to help nations preparing themselves for REDD+ as its requirements would be decided by the Conference of the Parties. With 145 million hectares of forests affected in the early 2000s by a roughly estimated deforestation rate of 0.25 per cent (MECNT, 2010, p. 11), DRC, one of the poorest countries in the world, deserved readiness support. Relying on these external resources, the Coordination nevertheless acted on behalf of the nation, under the oversight of the ministry of environment, in the person of its director for sustainable development. This individual was also one of the main negotiators for DRC, who in 2005 made the country part of the emerging Coalition of Rainforest Nations which contributed to the birth of REDD+.

Overseas aid is everywhere in DRC (Trefon, 2011). In the administrative centre of Kinshasa, this international presence materializes in the blue and white compounds of the UN peacekeeping mission, jeeps from the many agencies intervening in the country, and white people living in gated residencies owned by Lebanese families with Chinese businessmen as neighbours. This was the cosmopolitan living environment of the few young expatriates of the Coordination, whose personal trajectories had also crossed national borders. One previously worked on a banking reform in Madagascar; another discovered REDD+ during a research internship in environmental policy in Panama; a third one used to be a World Wide Fund staff member in Uganda and later in DRC's Kivu region. After three or four years in Kinshasa, they all moved on, replaced by new consultants. In the meantime, they worked as preparatory agents for REDD+. Whereas they had no scientific expertise in ecology or satellite imagery, they had become acquainted with Congolese ministerial life and were skilled in mobilizing around the emerging issue.^{xvii}

International overseas aid consultants usually have an acute sense of their temporary passage. This is particularly true here given the elusive purpose of the readiness process: to make the country ready for something (REDD+) that was itself not ready.^{xviii} The Coordination mainly sought to 'graft' a concern for the importance

of tropical forests and their carbon onto other interventions which would outlast its preparatory work. A successful graft was the inclusion of climate change mitigation as a pillar of DRC's 2011-2015 poverty alleviation strategy. The consultants were also trying to encourage a large-scale agricultural development project that included the rehabilitation of a road network to account for its impact on forest cover. But securing strong commitments to such a vague thing as REDD+ in a fragile state like DRC was not easy. With aid support, the civil servants in the forestry administration were busy enforcing a moratorium on new logging rights and digitizing concession coordinates;^{xix} in this respect, REDD+ seemed of little help. The Congolese Institute for Nature Conservation was not involved in the readiness process either, too concerned with counting its workforce and addressing security issues in national parks. And despite the desire of the environment minister to use REDD+ to financially support sustainable forest management, even the union of timber companies quickly lost interest in a hypothetical policy unable to solve mundane problems like the lack of equipment to unload logs in Kinshasa's port. We see here examples of territorial processes (agriculture, roads, logging, etc.) that would need to be deeply transformed to secure forests as carbon sinks. But at the time, REDD+ was mainly a political will with little operational capacity.

As preparatory agents, the consultants were promoting the idea of forests being carbon sinks in all sorts of meetings, from informal conversations to gatherings of a hundred people, most of them in the capital city.^{xx} A recurring message was: REDD+ means substantial revenues. The message travelled well and created expectations along the way, making a provincial politician from Mbandaka, a city on the Congo River 600 kilometres from Kinshasa, wonder 'where is the REDD money?' Discussion about money was continual within the Coordination, whether it was the US\$10 *per diem* distributed to participants in a meeting or hundreds of million dollars expected from a future programme.^{xxi} Here I want to emphasize the mobilizing purpose of this focus on money that epitomizes the promissory dimension of REDD+. Conjuring up revenues aimed to create a shared interest beyond immediate struggles and distinct, possibly contradictory, concerns. It pointed to a vague vision of a future of plenty whose temporality remained indeterminate. The consultants talked of 'pitching' and 'announcement effects' to describe this part of their work, the transformative power of which on DRC's economic situation was very, very limited. At times they seemed to briefly let themselves believe in the possibility of great improvement through REDD+, while experienced civil servants reminded them of past attempts to establish international forest policy that ended up being pure gesture.^{xxii}

For bits of this promised money to arrive in DRC, the Coordination was involved in fund raising. Consultants wrote applications to other funding schemes in the hope to deploy REDD+ outside Kinshasa (Gray, 2017). They also wanted to engage directly with donor representatives, especially from Norway, famous in the REDD+ milieu for its result-based bilateral agreements with Brazil and Indonesia. The English-speaking white men sought to represent DRC at its best in what they considered as an international competition for funding. In 2010, wondering whether it might consider a special relationship with DRC and its forests, the Norwegian aid agency ordered an assessment of corruption risks by PricewaterhouseCoopers. In response, the Coordination tried to demonstrate its willingness to address the concern. The main evidence put forward to argue that DRC could be an honourable partner was a new legal text and its online registry. The device sought to regulate how forested land could be accessed by CO₂ offsetting projects to avoid having 'carbon

cowboys' bribing local politicians with no intention to subject their activity to metrological requirements.^{xxiii} In light of the PricewaterhouseCoopers verdict that corruption is a pervasive feature of Congolese society, the Norwegians would have needed stronger reassurance. The legal intervention reveals how unrealistic the readiness process could be. It also shows how, in trying to attract both public aid (non-market approach) and private offsetting (market approach), the Coordination made use of the constructive ambiguity cultivated within UN negotiations.

In DRC, REDD+ navigated ministerial hopes for the future of logging, donors' preoccupation with governance, and demands expressed by civil society organizations. Participatory obligations are a well-established feature of overseas aid and a REDD+ requirement. The Coordination regularly held 'workshops' to keep informed Kinshasa-based activists speaking on behalf of local communities, especially in regard to future funding.^{xxiv} For these professionalized spokespersons, REDD+ had become a new lever to defend old causes. The adoption of community-based forest concessions envisioned in the Congolese forest code was one of them. By reframing the battle for customary property as a possible REDD+ action, civil society representatives wanted the readiness process to pressure the minister to endorse the legal text they had drafted. The activists, who knew how to lobby with well-oiled narratives of local communities being respectful forest dwellers, were eventually successful. In particular, they were able to activate their connection to environmental and indigenous rights organizations based in Europe, like Greenpeace's Parisian office, whose capacity to generate bad publicity was feared by the Coordination as it was by negotiators.^{xxv}

A last facet of the work of preparatory agents I want to evoke here takes us back precisely to the Conference of the Parties. The consultants were members of the Congolese delegation, but had no interest in wording disputes. In their view, UNFCCC decisions had little authority over actual REDD+ funding arrangements. At the 2011 session, instead of attending the informals, they were organizing side events for the ministry of environment to display its achievements. Side events are mini conferences convened by delegations or non-state observers in parallel to negotiations (Schroeder & Lovell, 2012). Their audience varies, depending on current interests. In Durban, more than 60 people (delegates, environmental and human rights activists, scientists, and aid experts) came over to hear about REDD+ in DRC. The high attendance can be attributed to the consultants' mobilizing work. Yet, during the event, they remained backstage and only Congolese citizens spoke, including from civil society organizations critical of the Coordination. The preparatory agents were not meant to be public figures. When in Kinshasa the readiness process constantly blurred the Congolese-foreign divide, for a performance taking part in UN theatricality, a national identity was demarcated and staged.

The geopolitics through which tropical forests become stocks of carbon, as this section has shown, is also located in the ministerial offices of a country like DRC, with consultants trying to enrol support for a negotiated policy yet-to-come. These cosmopolitan figures knew how to navigate the worlds of overseas aid and Congolese politics. To re-compose international relations around the carbon stored in DRC's forests, they worked as preparatory agents and spent most of their time holding meetings, applying for financial resources, and claiming that REDD+ could bring about bright futures. Such promises helped turn a vague global exigency into local conversations about development, forest policy and law; REDD+ seemed to promise the eradication of poverty, corruption and the oppression of forest dwellers. But the preparatory intervention had little purchase on the vast national territory and its

forests. As we shall see now, acting to durably transform landscapes requires more than talks, and notably the deployment of metrological practices.

The quest for metrological inclusiveness

In Kinshasa, the forest was too abstract an entity, while the financial struggles of both urban dwellers and the state could be encountered on a daily basis: hence the focus on money in the readiness process. Yet, it would be a mistake to conclude that REDD+ geopolitics is reducible to vague wording and economized promises. Through a back-and-forth movement between textual battles in conference centres and the implementation of CO₂ emission reduction efforts, the promissory could translate into (limited) concrete actions. Even in DRC, activities were being developed that involved tangible trees and measurement and calculation tools. By tracing these interventions, we can observe how international consensus and the work of preparatory agents combine with a quest for metrological inclusiveness.

The expatriate consultants working for the Congolese ministry of environment were trying to obtain financial resources to launch actions in forested areas. In particular, they choose to make plantations and the sustainable production of charcoal the focus of an application to a REDD+-related fund (Climate Investment Fund, 2016; Gray, 2017). Their idea was to encourage the replication of a flagship project. Initiated in the mid-2000s about 150 kilometres northeast from Kinshasa, the afforestation project was an offsetting activity that was part of the Clean Development Mechanism. A Belgian-Congolese entrepreneur, whose family had customary rights over the area, was managing what was the first intervention in DRC explicitly related to UNFCCC climate action, a plantation of acacia trees. The chosen Australian variety had been used in the region since the 1980s in a nearby plantation financed by overseas aid and supplying Kinshasa with sustainable charcoal. The new afforestation activity ought to similarly commercialize the energy source in addition to carbon offsets. To start planting trees, a loan from Belgian investors had been secured based on the signature of two forward sales of the expected offsets whose actual exchange was meant to happen later, in 2017. One buyer was a French bank that resold the forthcoming emission reductions to a multinational agribusiness compensating for its CO₂ to meet environmental responsibility requirements. Another buyer was a fund managed by the World Bank in Washington DC, where the organization had developed internal expertise to support projects and purchase offsets for governments committed to limit their emissions through the Kyoto Protocol. This set-up, which locates climate action in an entrepreneurial project connecting distant, mostly private, entities across national borders, epitomizes what negotiators call a market approach.

To become an economically productive carbon sink, trees must be enriched with metrological evidence.^{xxvi} The registration of a project and the issuance of offsets by UNFCCC secretariat in Bonn rely on paperwork complying with carbon accounting rules decided by the Conference of the Parties and audited by a third party. An afforestation activity includes regular inventory: sampling plots, measuring the circumference of trunks, applying equations to convert this measure into biomass, and multipliers to translate biomass into carbon stock.^{xxvii} What counts then is not scientific rigour. The multiplier and the equation used to compute the carbon stored by the acacias in the Congolese savannah were quite generic: the former was a default value found in IPCC good practices and guidance which provide calculative tools to foster participation in emission reduction efforts; the latter came from a scientific

article published in the 1990s by the French overseas cooperation agency about the same acacias variety planted and studied in the Republic of Congo. Inclusiveness guides UN politics, allowing for such approximate estimates. Here measurements and calculations do not generate facts but establish rough equivalences so that offsets can circulate from DRC to a distant source of emissions.

The Clean Development Mechanism was not as multivalent a UN policy as REDD+; it was very much oriented towards the calculation and promise of tradable quantities of carbon. Emission reductions would be computed by comparing the CO₂ stored by the registered project with a baseline (what would happen if the activity is not carried out, see Ehrenstein & Muniesa, 2013), and they could be anticipated in forward contracts by using generic values of trees' growth rates from the IPCC. But when in 2011 the owner of the Congolese plantation began to inventory the carbon accumulated so far, initial results indicated that the neat rows of acacias hardly distinguishable amid the tall grass of the savannah were storing less than expected by the projections based on which the future sale had been agreed. Various reasons were invoked (bushfires, high mortality rates, delays, etc.); in a nutshell, the behaviour of the plantation did not match expectations. The transaction became uncertain along with the possibility of repaying the invested capital, placing the entrepreneur in a difficult situation. While his project had not triggered local disputes over land use, it encountered living things unsettling the promissory predictions.

Regardless of the difficulty to ensure the offsetting capacity of planted trees, the consultants driving DRC's readiness process decided to put afforestation centre stage when applying for additional REDD+ funds. Plantations, they thought, might decrease the reliance on fuel wood collected in standing forests. The assumption was slightly speculative. Tasked by the Coordination to study the causes of deforestation, researchers based in Belgium could not assert whether the practice was responsible for much forest loss. Their investigational method combined historic satellite images with geo-localized information and the collection of fuel wood had no easily traceable proxy besides demographic data and visual patterns of forest fragmentation visible on high-resolution images (MECNT, 2012). To the consultants, the fuel wood economy nevertheless formed a tangible domain of intervention; there was practical know-how (existing plantations); charcoal bags could be seen everywhere along the roads leading to Kinshasa; agronomists from a French research centre had measured that the value of the charcoal market in the capital city exceeded national timber exports (Schure *et al.*, 2011); and compared to slash-and-burn agriculture, another deforestation driver, it was a topic much less engaged by civil society organizations defending forest dwellers.

Several points can be noted here that might relate to the porosity and resilience of national demarcation in REDD+. First, from French agronomists to Belgian remote sensing experts, the readiness process depended entirely on foreign technical expertise. Both the metrological instruments and the skills needed to study Congolese forests were located abroad. The implication of this scientific outsourcing was, however, less clear than a loss of sovereignty given that, secondly, the evidential material was used in an instrumental manner.^{xxviii} Interventions in the name of REDD+ tended to move away from a focus on CO₂ and to develop on fragile evidential grounds, which left room for manoeuvre. There was no plan to retrospectively verify the claim that plantations help decreasing forest loss. Finally, the deforestation cause targeted by the programme was domestic. DRC's forests may not be as affected by global trade as Indonesia's and Brazil's. But making deforestation a national matter related to household habits can also be attributed to a

failed attempt to discuss globalized drivers (e.g. palm oil consumption or timber exports) within UN negotiations.^{xxix}

Before a secured grant translates into growing trees and new supply chains, many details must be clarified first. It is only at the time of writing this paper that the programme evoked above enters into operation. What we see at the planning stage is the involvement of metrological montages able to depict the large-scale phenomena to be transformed. The consultants could delimit the programme areas, three zones of deforestation frontier around major urban centres, thanks to a visualization of the Congolese territory superposing forest cover in 2010 and deforestation events between 2000, 2005 and 2010.^{xxx} Published by a mapping initiative from American universities, the visual tool was another external resource enrolled by the preparatory agents. Interestingly, the map reveals intensive forest loss in the eastern part of the territory known for its wildlife, but also for a state of continual violence because of which the consultants did not select the ‘hot spot’ evidenced by satellite images. More pacified zones were privileged in order to reassure donors.^{xxxi}

In the case of REDD+, at least in terms of how it was treated within UN negotiations, it was expected that vast surfaces covered with tropical forests would be closely monitored. In Brazil for example, the forestry administration has been equipped for quite some time with a sophisticated remote sensing system, combining data from different satellites and linked to law enforcement procedures. There is nothing comparable in DRC, too disconnected from Earth observation infrastructures. An agreement between governments from the Congo Basin and the European space agency was passed in 2011 that gave the former free access to satellite images. But telecommunication networks in Kinshasa’s administrative buildings could simply not handle such heavy data. Negotiators acknowledged these unequal metrological capacities (Rominj *et al.*, 2012). It was a source of worry because in the logic of REDD+, places deprived of calculative devices are seen as having no interest in caring for the carbon of their forests. In response, the remote sensing community has mobilized to develop more user-friendly measurement methods (Lovell, 2013). DRC even became a sort of textbook case for imagining inclusive rules, and, at a side event in Durban, one could hear European scientists discuss how best to use NASA’s free-of-charge coarse images of Congolese forests to compute deforestation rates and carbon losses.

REDD+ actually expanded the metrological inclusiveness characteristic of UN climate policies and already identifiable in the Clean Development Mechanism. For example, negotiators agreed that baselines should build on ‘historic data’, but at the request of African nations, a decision added the possibility to ‘adjust for national circumstances’ (UNFCCC, 2014, p. 7). The Congo Basin being less damaged than the Amazon, the argumentation went, development prospects would legitimately increase deforestation and make historic records unfair baselines. In DRC, the case for adjustment was made in a glossy report written by the consulting firm McKinsey at high cost as part of the readiness process. Assessing the CO₂ reduction potential of various interventions, the analysis projected a very optimistic baseline for industrial logging so that a reduction could be claimed even with a deforestation rate higher than in the past (MECNT, 2009). In online publications and with flyers distributed at UNFCCC meetings, Greenpeace fiercely criticized the modelling exercise for its poor data and the vested interests behind the assumptions (Greenpeace, 2011). Undesirable from an environmental perspective, a sudden growth of the moribund timber industry was also unrealistic. The report amounted to a motivational exercise expressing the developmentalist hopes of the environment minister and some of his advisers

(including from bilateral donor agencies). With baseline adjustment, a right to develop was incorporated in the multivalent policy at the risk of undermining its initial aim to decrease deforestation.

Over time, the evidential demands of REDD+ have remained fairly lax. In 2013, after eight years of discussion, the Conference of the Parties finalized a ‘framework’ providing guidelines and an independent assessment process to national governments willing to report deforestation and emission reduction efforts; no obligation was attached and ambiguity persisted. Negotiators, for example, authorized ‘subnational monitoring and reporting as an interim measure’ without clarifying what ‘interim’ meant (UNFCCC, 2014, p. 9). Since then, voluntary offsetting standards have been certifying small-scale biodiversity conservation activities named ‘REDD projects’ (including in DRC). Discussions have been taking place in California on the possibility of linking its cap-and-trade system to medium-scale REDD+ actions in Brazil and Mexico. And the World Bank is pursuing sub-national interventions with a new result-based scheme following up on its readiness funding (including in DRC). It is often unclear to what extent such loudly announced initiatives are implemented to transform forested landscapes.^{xxxii} What is clear though, is that REDD+ keeps being diffracted into manifold, multivalent actions.

As we examine activities more directly affecting the existence of tangible trees and vast forested areas, we encounter metrological practices instrumental in translating REDD+ geopolitics into concrete emission reduction efforts. This section showed that, with a lack of scientific infrastructure and a use of evidential material to convey political aspirations, DRC is a good location to witness the quest for inclusiveness that characterizes international climate policies. It also showed that REDD+ has not become an operational UN mechanism with strict carbon accounting rules. Rather, what its multivalent and promissory nature has led to is a variety of engagements with trees, of limited spatial deployment and whose realization must be interrogated. It seems that the negotiators we met in the first section of this paper spent a great deal of energy on wording the balance between ‘market’ and ‘non-market’ approaches only to accommodate divergences and ensure that a vague but global exigency, tropical forests as carbon sinks, endures.

Conclusion

A complex evidential infrastructure has made global warming a matter of concern. This has now been well documented. But restricting our attention to climate models and the IPCC does not tell us much about the responses being devised and how global warming can become a matter of global concern in an unequal world. To explore this point, the paper followed the negotiation of ‘policy approaches and positive incentives on issues relating to 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’ (REDD+) inside conference centers and beyond, notably in the Democratic Republic of the Congo.

When compared with Europe and the United States, Central Africa is clearly not a place that is responsible for global warming. My interest in the forests of the Congo Basin does not imply that I think acting on the globalized oil economy (see Mitchell, 2011) should not be the priority to address carbon emissions, which is sometimes a motive to justify carbon offsetting. But regardless of historical responsibilities, the future of the global climate depends on tropical forests, including

those in DRC - probably more than we think. Scientists recently have pointed to the existence of a vast peat land along the Congo River (Dargie *et al.*, 2017). The decomposed organic matter could store as much carbon as the trees standing above it, the equivalent potentially of 20 times current annual fossil fuels emissions from the United States. As the new fact makes the Congo Basin a very consequential component of climatic evolution, this paper sought to give a glimpse of the political challenges posed by maintaining the existence of this carbon sink.

To do so, I examined three interrelated processes: the formulation of international consensus, the work of preparatory agents, and the quest for metrological inclusiveness. We saw that the ambiguous wording of decisions endorsed by the United Nations aimed to accommodate divergences and maintain a forum for debate. We followed preparatory agents trying to mobilize around the vague policy, whose work suggested the extent of the difficulties entailed in the transformation of forested landscapes. And finally, we looked at inclusive measurement and calculation tools (IPCC default values, deforestation maps, etc.) through which the promissory commitment to reduce emissions from tropical deforestation might translate into modest concrete interventions and bring tangible trees into politics (cf. Latour, 2004). Metrological inclusiveness means producing global evidence (of forest cover across the world) and globalizing access to the capacity to produce evidence. Compared to how ecologists understand the biosphere, the new political existence of tropical forests as carbon sinks is, then, a rude simplification. In place of demonstrating a scientific fact, the quest for metrological inclusiveness, together with the formulation of international consensus and the work of preparatory agents, contributes to the assertion of a global exigency: by means of the activity described in this paper, the carbon of tropical forests demands worldwide and comprehensive attention, discussion, and action.^{xxxiii}

The tergiversations around REDD+ provided an example of global politics in action, or rather a new form of geopolitics: a timid multivalent concern for earthly things. This concern has emerged through relations developing between nations, by means of an attracting force distinct from national sovereignty - as in the semi-secrecy of informals crafting compromises, the movements of expatriates acting on behalf of Congolese authorities and metrological montages stretching across national borders. These processes were able to bring a new issue into being and shape it in such a way as to enrol as many supporters as possible, even if it meant nurturing ambiguity, making assertions on unstable evidential grounds, and voicing promises that might not materialize. In this respect, REDD+ bears strong resemblance to the move within biodiversity conservation towards 'enterprising nature' (Dempsey, 2016), a 'socioecological-economic utopia whose realization is always *just around the corner*' (Dempsey, 2016, p. 3), which is also sustained by diplomatic meetings, calculative practices and cosmopolitan actors. In such environmental, economized, elusive-yet-enduring interventions, we witness a kind of optimistic unrealism that leaks out of the air-conditioned atmosphere of conference centers but barely intervenes in the complicated processes causing deforestation, CO₂ emissions or biodiversity loss. To conclude, then, I would like to suggest that it might now be time for the carbon sink geopolitics examined here to come down to Earth.

References

- Barry, A.** (2001). *Political machines: Governing a technological society*. London: The Athlone Press.
- Barry, A.** (2013a). *Material politics: Disputes along the pipeline*. Oxford: Wiley Blackwell.
- Barry, A.** (2013b). The translation zone: Between actor-network theory and international relations. *Millennium* 41(3), 413-429.
- Barthe, Y.** (2006). *Le pouvoir d'indécision: La mise en politique des déchets nucléaires*. Paris: Economica.
- Best, J.** (2012). Bureaucratic ambiguity. *Economy and Society* 41(1), 84-106.
- Blok, A.** (2011). Clash of the eco-sciences: Carbon marketization, environmental NGOs and performativity as politics. *Economy and Society* 40(3), 451-476.
- Bodanky, D.** (2010). The Copenhagen Climate Change Conference: A postmortem. *American Journal of International Law* 104 (2), 230-240.
- Callon, M.** (2009). Civilizing markets: Carbon trading between in vitro and in vivo experiments. *Accounting, Organizations and Society* 34(3-4), 535-548.
- Climate Investment Fund (CIF)** (2011, June). *Investment Plan: Democratic Republic of Congo*. Agenda item 5, FIP/SC.6/4, Cape Town. Retrieved from: https://www-cif.climateinvestmentfunds.org/sites/default/files/FIP%204%20DCR%20IP_0.pdf, last access 04/01/2016.
- Dargie, G.C., Lewis, S.L., Lawson, I.T., Mitchard, E.T., Page, S.E., Bocko, Y.E. & Ifo, S.A.** (2017). Age, extent and carbon storage of the central Congo Basin peatland complex. *Nature* 542(7639), 86-90.
- Debroux, L., Hart, T., Kaimowitz, D., Karsenty, A. & Topa, G.** (2007). *Forests in post- conflict Democratic Republic of Congo: Analysis of a priority agenda*. Jakarta: Center for International Forestry Research.
- Demeritt, D.** (2006). Science studies, climate change and the prospects for constructivist critique. *Economy and Society* 35(3), 453-479.
- Dempsey, J.** (2016). *Enterprising nature: Economics, markets, and finance in global biodiversity politics*. New Jersey, NY: Wiley-Blackwell.
- Edwards, P.N.** (2010). *A vast machine: Computer models, climate data, and the politics of global warming*. Cambridge, MA: The MIT Press.
- Ehrenstein, V. & Muniesa, F.** (2013). The conditional sink: Counterfactual display in the valuation of a carbon offsetting reforestation project. *Valuation Studies* 1(2), 161-188.

Ehrenstein, V. & Laurent, B. (2016). State experiments with public participation: French nanotechnology, Congolese deforestation, and the search for national publics. In J. Chilvers & M. Kearnes (Eds.), *Remaking participation: Science, environment, and emergent publics* (pp. 123-143). London: Routledge.

Ferguson, J. (1994). *The anti-politics machine: 'Development', depoliticization and bureaucratic power in Lesotho*. Minneapolis, MN: University of Minnesota Press (new edition).

Ferguson, J. (2006). *Global shadows: Africa in the neoliberal world order*. Durham, NC: Duke University Press.

Fry, I. (2002). Twists and turns on the Jungle: Exploring the evolution of land use, land-use change and forestry decisions within the Kyoto Protocol. *Review of European Community and International Environmental Law* 11(2), 159-168.

Gray, I. (2017). Marketization as political technology: Unintended consequences of climate finance in the Democratic Republic of Congo. *Economy and Society* 46(3-4), 545-575.

Greenpeace (2011, April). *Bad influence: How McKinsey-inspired plan leads to rainforest destruction*. Amsterdam: Greenpeace International.
Retrieved from: <http://www.greenpeace.org/international/en/publications/reports/Bad-Influence/>, last access 4/04/2017

Grubb, M., Koch, M., Thomson, K., Munson, A. & Sullivan, F. (1993). *The Earth Summit agreements: A guide and assessment. An analysis of the Rio 92 UN Conference on Environment and Development*. London: Royal Institute of International Affairs and Earthscan Publications..

Grubb, M., Vrolijk, C., & Brack, D. (1999). *The Kyoto Protocol: A guide and assessment*. London: Royal Institute of International Affairs and Earthscan Publications.

Guyer, J.I. (2007). Prophecy and the near future: Thoughts on macroeconomic, evangelical, and punctuated time. *American Ethnologist* 34(3), 409-421.

Keck, M.E. & Sikkink, K. (1998). *Activists beyond borders: Advocacy networks in international politics*. Ithaca, NY: Cornell University Press.

La Viña, A.G.M. & de Leon, A. (2014). Two global challenges, one solution: International Cooperation to Combat Climate Change and Tropical Deforestation. CGD Working Paper 388, Washington DC: Center for Global Development.
Retrieved from: <https://www.cgdev.org/publication/two-global-challenges-one-solution-international-cooperation-combat-climate-change-and>, last access 4/04/2017

Lahsen, M. (2009). A science–policy interface in the global south: The politics of carbon sinks and science in Brazil. *Climatic Change* 97(3-4), 339.

Latour, B. (2004). *Politics of nature: How to bring sciences into democracy*. Cambridge MA: Harvard University Press.

Latour, B. (2015). *Face à Gaïa: Huit conférences sur le nouveau régime climatique*. Paris: La Découverte.

Li, T.M. (2007). *The will to improve: Governmentality, development, and the practice of politics*. Durham, NC: Duke University Press.

Lovell, H. (2013). Measuring forest carbon. In J. Strippel & H. Bulkeley (Eds.), *Governing the climate: New approaches to rationality, power and politics* (pp. 175-196). Cambridge: Cambridge University Press.

Lovell, H. & MacKenzie, D. (2015). Allometric equations and timber markets: An important forerunner of REDD+? In B. Stephen & R. Lane (Eds.), *The politics of carbon markets* (pp. 69-90). London: Routledge.

MacKenzie, D. (2009). Making things the same: Gases, emission rights and the politics of carbon markets. *Accounting, Organizations and Society* 34(3-4), 440-455.

Marres, N. (2007). The issues deserve more credit: Pragmatist contributions to the study of public involvement in controversy. *Social Studies of Science* 37(5), 759-780.

Marres, N. (2011). The costs of public involvement: Everyday devices of carbon accounting and the materialization of participation. *Economy and Society* 40(4), 510-533.

Mathews, A.S. (2013). Scandals, audits, and fictions: Linking climate change to Mexican forests. *Social Studies of Science* 44(1), 82-108.

Ministère de l'Environnement, de la Conservation de la Nature and du Tourisme de la République démocratique du Congo (MECNT) (2009, December). *Potentiel REDD+ de la RDC*.

Retrieved from:

http://redd.unfccc.int/uploads/2_198_rapport_final_exploration_potentiel_redd_071209.pdf, last access 4/04/2017

Ministère de l'Environnement, de la Conservation de la Nature and du Tourisme de la République démocratique du Congo (MECNT) (2010, July). *Readiness plan for REDD 2010-2012, R-PP final version*.

Retrieved from: <https://www.forestcarbonpartnership.org/democratic-republic-congo>, last access 04/01/2016.

Ministère de l'Environnement, de la Conservation de la Nature and du Tourisme de la République démocratique du Congo (MECNT) (2012, August). *Synthèse des études sur les causes de la déforestation et de la dégradation des forêts en République Démocratique du Congo*.

Retrieved from: <http://pfbc-cbfp.org/actualites/items/ONU-REDD-FR.html>, last access 10/03/2017.

- Mitchell, T.** (2011). *Carbon democracy: Political power in the age of oil*. London: Verso.
- Moura-Costa, P. & Stuart, M.D.** (1998). Forestry-based greenhouse gas mitigation: A story of market evolution. *The Commonwealth Forestry Review*, 77(3), 191-202.
- Myers, N.** (2016). Photosynthesis. *Cultural Anthropology - Lexicon for an Anthropocene Yet Unseen*.
Retrieved from: <https://culanth.org/fieldsights/790-photosynthesis>, last access 4/04/2017
- O'Reilly, J., Oreskes, N. & Oppenheimer, M.** (2012). The rapid disintegration of projections: The west Antarctic ice sheet and the Intergovernmental Panel on Climate Change. *Social Studies of Science*, 42(5), 709-731.
- Oreskes, N.** (2011). My facts are better than your facts: Spreading good news about global warming. In P. Howlett & M. S. Morgan (Eds.), *How well do facts travel? The dissemination of reliable knowledge* (pp. 136-166). Cambridge: Cambridge University Press.
- Pachauri, R.K., Allen, M.R., Barros, V.R., Broome, J., Cramer, W., Christ, R., ... van Ypersele, J.-P.** (2014). *Climate change 2014: Synthesis report*. Geneva: Intergovernmental Panel on Climate Change.
- Randerson, J., Carrington, D. & Vaughan, A.** (2010, December 10). Cancún climate change summit: The final day as it happened. *The Guardian*.
Retrieved from: <http://www.theguardian.com/environment/blog/2010/dec/10/cancun-climate-change-summit-final>, last access 04/01/2016.
- Riles, A.** (2001). *The network inside out*. Ann Arbor, MI: University of Michigan.
- Romijn, E., Herold, M., Kooistra, L., Murdiyarso, D. & Verchot, L.** (2012). Assessing capacities of non-Annex I countries for national forest monitoring in the context of REDD+. *Environmental Science & Policy*, 19-20, 33-48.
- Schlamadinger, B., Ciccarese, L., Dutschke, M., Fearnside, P.M., Brown, S. & Murdiyarso, D.** (2005). Should we include avoidance of deforestation in the international response to climate change? In P. Moutinho & S. Schwartzman (Eds.), *Tropical deforestation and climate change* (pp. 53-62). Belém: Instituto de Pesquisa Ambiental da Amazônia, Washington DC: Environmental Defense.
- Schroeder, H. & Lovell, H.** (2012). The role of non-nation-state actors and side events in the international climate negotiations. *Climate Policy* 12(1), 23-37.
- Schure, J., Ingram, V., Marien, J.-N., Nasi, R. & Dubiez, E.** (November, 2011). *Woodfuel for urban centres in the Democratic Republic of Congo*. CIFOR Brief.
Retrieved from: http://www.cifor.org/publications/pdf_files/infobrief/3678-brief.pdf, last access 4/04/2017

Tsing, A.L. (2005). *Friction: An ethnography of global connection*. Princeton, NJ: Princeton University Press.

Trefon, T. (2011). *Congo masquerade: The political culture of aid inefficiency and reform failure*. London: Zed Books.

United Nations (1992). United Nations Framework Convention on Climate Change. FCCC/INFORMAL/84.

United Nations Framework Convention on Climate Change (UNFCCC) (2005, November). Reducing emissions from deforestation in developing countries: Approaches to stimulate action: Submissions from Parties, FCCC/CP/2005/MISC.1. Bonn: UNFCCC Secretariat.

United Nations Framework Convention on Climate Change (UNFCCC) (2014, June). Key decisions relevant for reducing emissions from deforestation and forest degradation in developing countries (REDD+). Bonn: UNFCCC Secretariat.

Van der Sluijs, J., Van Eijndhoven, J., Shackley, S. & Wynne, B. (1998). Anchoring devices in science for policy: The case of consensus around climate sensitivity. *Social Studies of Science* 28(2), 291-323.

Vidal, J. (2010, December 2011). Bolivia's defiant leader sets radical tone at Cancun climate talks. *The Guardian*.

Retrieved from: <http://www.theguardian.com/environment/2010/dec/11/cancun-talks-evo-morales>, last access 04/01/2016.

Weszkalnys, G. (2011). Cursed resources, or articulations of economic theory in the Gulf of Guinea. *Economy and Society* 40(3), 345-372.

Weszkalnys, G. (2015). Geology, potentiality, speculation: On the indeterminacy of First Oil. *Cultural Anthropology* 30(4), 611-639.

Wynne, B. (2010). Strange weather, again: Climate science as political art. *Theory, Culture & Society* 27(2-3), 289-305.

Yamin, F. & Depledge, J. (2004). *The International Climate Change Regime: A guide to rules, institutions and procedures*. Cambridge: Cambridge University Press.

Acknowledgements: I would like to warmly thank Ann Kelly, Linsey McGoey and the three anonymous reviewers for their detailed comments and suggestions on earlier versions of this text. They have been so helpful in clarifying what the paper is about. The account builds on a doctoral research conducted from 2009 to 2014 at the Centre de sociologie de l'innovation, Ecole des mines de Paris, and the many discussions I have had there with, among others, Antoine Hennion, Brice Laurent, Fabian Muniesa and Guillaume Yon, have fed this paper. Drafts have been presented at various events,

the latest being the conference ‘Finance as a response to global environmental crisis?’ at Hamburg University in December 2017, and I would like to particularly thank Jessica Dempsey for her feedback. The paper has been written thanks to the European Research Council grant 313173 held by Daniel Neyland who has also provided me with very useful remarks on the text.

ⁱ The paper builds on multi-sited fieldwork done principally from 2010 to 2012, during which a heterogeneous corpus concerning REDD+ was constituted (UNFCCC decisions, grey literature, reports, press releases, blogs, etc.), many interviews and informal conversations were conducted, and ethnographic observations carried out (within the ministry of environment of the Democratic Republic of Congo in Kinshasa in spring 2011, during a field trip to a plantation in the Congolese savannah in April 2011, in a business fair dedicated to carbon markets in Barcelona in June 2011, and at the session of the Conference of the Parties in Durban in December 2011).

ⁱⁱ The contribution of tropical forests to the global carbon cycle is a debated issue among scientists, in particular whether these forests are a net absorber of carbon dioxide (see Lahsen, 2009). My use of the expression ‘carbon sink’ in the paper is then quite bold and aims to emphasise that forests store carbon.

ⁱⁱⁱ The potentially problematic link between evidential practices and politics in environmental policy is explored by Mathews (2013), who proposes to consider official statements of success about a national reforestation initiative in Mexico (high numbers of planted trees) as risky ‘knowledge performances’ that can be unmade by audits and trigger public outrage.

^{iv} Lovell (2013) shows that REDD+ has also engendered scientific activities around the measurement of forest cover and carbon stocks and suggests that these have supported ‘an optimistic “measure and manage” discourse’ within UN negotiation (Lovell, 2013, p. 181). To my knowledge and as this paper will argue, this discourse has remained an unfulfilled ideal.

^v In his reflection on the IPCC, Wynne (2010) suggests that a form of optimism might also be found in early climate models and the simulation of change as a continuous, gradual process.

^{vi} Rethinking political life in light of scientific practices and living things is one of Latour’s long-standing enterprise (Latour, 2004). His recent work engages with global warming and argues for re-arranging political representation: instead of an obsolete international division, ill-suited to capture the entangled processes and interests that have caused global warming and therefore ought to be transformed, the collectives in negotiation should be envisioned as territorial, humans-nonhumans polities (Latour, 2015).

^{vii} The case resonates with Riles (2001) who describes a Fijian non-governmental network involved in UN World Conferences on Women and shows the tension between procedural form and political substance.

^{viii} The Cancun Agreements re-established the legitimacy of the political forum after Copenhagen, when no consensus was achieved because a coalition (Tuvalu, Sudan and several South American nations including Bolivia) opposed the idea of CO₂ reduction efforts being distributed among developed and developing nations (Bodansky, 2010).

^{ix} The UNFCCC website provides access to all decisions and submissions: <http://unfccc.int/2860.php>.

^x In 2003, Environmental Defense and the Amazon Environmental Research Institute suggested to allow developing nations to issue tradable emission reductions from a decrease in deforestation (Schlamadinger *et al.*, 2005, p. 54).

^{xi} Despite the multivalence of REDD+ and its difficulties in translating into concrete actions, as we will see through the paper, the 2007 IPCC assessment and the high-profile Stern review reasserted that tropical forests were a cost-effective fix for the CO₂ problem (La Viña & de Leon, 2014).

^{xii} Resulting from the routinized calculation of national incomes, the developed-developing division used in REDD+ is based on the economic situation of the world in the early 1990s.

^{xiii} Online, the Coalition for Rainforest Nations claims 52 member-nations, but at the 2011 UNFCCC session I was told that only about 20 delegations were aligned behind its spokesperson. The Coalition website can be found here: <http://www.rainforestcoalition.org/nations.aspx>.

^{xiv} The constructive ambiguity of REDD+ decisions echoes what Barthe (2006) terms ‘zones of fuzziness’ in his analysis of the French legislation on nuclear waste; fuzzy wording does not reconcile divergences, but leaves open the possibility for contradictory views to evolve. According to Van der Sluijs *et al.* (1998), ambiguity understood as room for multiple and changing interpretation is also central in the ‘science for policy’ of the IPCC.

^{xv} The participation of nongovernmental organizations in international environmental and human rights policy is a well-researched topic (Keck & Sikkink, 1998). On scrutiny over governmental (and business) affairs and public performances see also Barry (2013a).

^{xvi} The programmes funding DRC’s readiness process are the World Bank’s Forest Carbon Partnership Facility readiness fund and the UN-REDD programme of the United Nations Development Programme, the United Nations Environment Programme and the Food and Agriculture Organization.

^{xvii} In his seminal work on development, Ferguson (1994) states that aid projects ‘depoliticize’ problems (e.g., poverty) by turning them into technical matters (e.g., agricultural yield). His definition of politics remains implicit; it equates either to electoral politics or questions of economic dependencies. Here I consider that the consultants working as preparatory agents for REDD+ were engaged in an issue-oriented politics (cf. Marres, 2007).

^{xviii} The funding schemes deliberately left open what a readiness process was supposed to achieve; they cultivated a kind of ‘intentional ambiguity’ in order to adapt to uncertain futures and diverse contexts like IMF’s and World Bank’s recent development policies (Best, 2011, p. 92).

^{xix} The Congolese forestry administration had been undergoing reforms since the mid-2000s (Debroux *et al.*, 2007).

^{xx} The consultants’ mobilising work was happening in French, the official language of the Congolese administration.

^{xxi} The importance of monetary promises and rewards in DRC might relate to the fact that its economy is a form of rentiership based on mineral resources (copper, cobalt, etc.).

^{xxii} Weszkalnys (2015) uses the term ‘gesture’ to describe samples of matter, contracts, and institutional arrangements that ‘signal things to come’ while the resource (in her case, oil) remains hypothetical.

^{xxiii} The device mitigating corruption risks in REDD+ resembles a community-based procedure meant to allocate development funding in Indonesia examined by Li (2007). In both cases, corruption is expected to disappear through the interplay between legitimate payment and publicity. On institutional design for good governance see also Weszkalnys (2011).

^{xxiv} Ehrenstein and Laurent (2016) and Gray (2017) provide more details on the participation of civil society organizations in REDD+ in DRC.

^{xxv} Traveling along advocacy networks, complaints from Congolese organizations can end up online, as the Internet is an important resource for the environmental contestation of carbon markets (cf. Blok, 2011).

^{xxvi} I borrow the idea of ‘informational enrichment’ from Barry’s analysis of a pipeline project and disputes about how its construction materials behave and ought to behave (2013a, p. 141).

^{xxvii} Lovell and MacKenzie (2015) describe how equations that estimate the carbon stock of trees are obtained. The purpose of such carbon accounting methods is to enable comparison across distant and different activities (cf. MacKenzie, 2009).

^{xxviii} On the internationalism of scientific research on tropical forests and the accusations of hegemony it can trigger see Lahsen (2009).

^{xxix} Deforestation drivers were put on the negotiation agenda but it led to noncommittal decision (UNFCCC, 2014, p. 41).

^{xxx} The mapping initiative ‘Monitoring the forests of Central Africa using remotely sensed data sets’ is accessible online: http://carpe.umd.edu/forest_monitoring/monitoring.php.

^{xxxi} The location of the afforestation activity in only a few selected areas across DRC echoes the ‘transnational networks that connect economically valued spaces dispersed around the world in a point-to-point fashion’ foregrounded by Ferguson (2006, p. 40).

^{xxxii} The offset scheme certifying ‘REDD projects’ that I refer to is called the Voluntary Carbon Standard and is described here: <http://www.v-c-s.org/>.

The World Bank’s result-based funding is called the Forest Carbon Partnership Facility carbon fund and is described here: <https://www.forestcarbonpartnership.org/carbon-fund-0>.

Finally, to access documents about the Californian cap-and-trade system and the possible inclusion of REDD+ offsets, see:

<https://www.arb.ca.gov/cc/capandtrade/sectorbasedoffsets/sectorbasedoffsets.htm>.

^{xxxiii} If the tergiversations around REDD+ have made the carbon absorbed by tropical forests a more visible issue, we are however quite a long way off to feel that as humans on Earth ‘we are of the plants’ as advocated by Myers (2016).