Land Use Policy 73 (2018) 259–268

Contents lists available at ScienceDirect

Land Use Policy

journal homepage: www.elsevier.com/locate/landusepol

Linking notions of justice and project outcomes in carbon offset forestry projects: Insights from a comparative study in Uganda

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ARTICLE INFO

Keywords:
Carbon forestry
Environmental justice
Empirical justice analysis
Project outcomes
Uganda

ABSTRACT

Over the last 20 years, Uganda has emerged as a testing ground for the various modes of carbon forestry used in Africa. Carbon forestry initiatives in Uganda raise questions of justice, given that people with comparatively negligible carbon footprints are affected by land use changes initiated by the desire of wealthy people, firms, and countries to reduce their more extensive carbon footprints. This paper examines the notions of justice local people express in relation to two contrasting carbon forestry projects in Uganda, the Mount Elgon Uganda Wildlife Authority – Forests Absorbing Carbon Emissions (UWA-FACE) project and Trees for Global Benefit (TFGB). UWA-FACE closed down its initial operations at Mount Elgon after 10 years as a result of deep controversies and negative international publicity, whereas TFGB is regarded by many as an exemplary design for smallholder carbon forestry in Africa. Our approach builds upon an emerging strand in the literature, of empirical analyses of local people's notions of justice related to environmental interventions. The main contribution of the paper is to examine how people's notions of justice have influenced divergent project outcomes in these cases. In particular, we highlight the relative success of TFGB in the way it meets people's primarily distributional concerns, apparently without significantly challenging prevalent expectations of recognition or procedural justice. In contrast, we illuminate how controversy across the range of justice dimensions in UWA-FACE at Mount Elgon ultimately led to the project's decline. This paper therefore explores how attention to notions of justice can contribute to a fuller understanding of the reactions of people to carbon forestry projects, as well as the pathways and ultimate outcomes of such interventions.

1. Introduction

Over the last 20 years, Uganda has emerged as a testing ground for the various modes of carbon forestry used in Africa. The extent of the country's entrance into this new domain of environmental governance is evidenced, for example, by Uganda being the origin of the fourth largest share of voluntary market forest carbon credits (Goldstein and Ruef, 2016), and hosting one of the world's earliest carbon offset projects (Cavanagh and Benjaminsen, 2014). In carbon forestry projects, landowners or land rights-holders are paid using carbon finance to grow trees to sequester carbon for climate change mitigation. In general, voluntary carbon market funds are derived from comparatively wealthy individuals, firms, or organizations in the global north seeking to 'offset' their emissions with sequestration of emissions undertaken elsewhere. The presence of mitigation projects in the so-called 'Global South' thus sets up interesting transnational dynamics that raise a number of challenging questions of environmental justice (Agarwal and Narain, 1991; Marino and Ribot, 2012; Leach and Scoones, 2015).

Analyses of impacts and outcomes of carbon forestry have demonstrated the diverse reactions of rural people to such interventions, and examined the interactions between these responses and project outcomes (Corbera and Brown, 2010; Mahanty et al., 2013; Paasgard and Chea, 2013). Two projects in Uganda exemplify the diverse reactions to and outcomes of carbon forestry in the Global South, namely: 'Trees for Global Benefit' (TFGB) in (former) Bushenyi District and the Uganda Wildlife Authority – Forests Absorbing Carbon Emissions (UWA-FACE) project at Mount Elgon National Park. The different paths of these projects illustrate important aspects of relative project 'success' and 'failure'[1] when studied comparatively. UWA-FACE at Mount Elgon largely closed down its initial operations after 10 years as a result of

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[1] We use these relative notions of project 'success' and 'failure' throughout the paper to characterise how these projects are presented by relevant actors and are commonly understood.

https://doi.org/10.1016/j.landusepol.2017.12.055
Received 27 July 2016; Received in revised form 21 September 2017; Accepted 20 December 2017

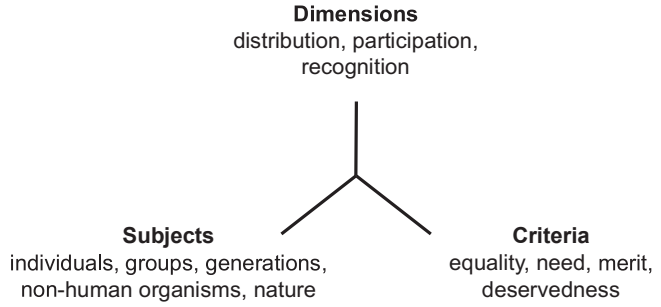

Fig. 1. A conceptual framework for characterizing notions of justice. Source: Sikor et al. (2014; 525).

controversies and negative international publicity (Lang and Byakola, 2006). In contrast, despite mixed – and, in some assessments, problematic – aspects (Fisher, 2012; Fisher, 2013), TFGB is often held up as an exemplary project design for smallholder carbon forestry in Africa, featuring in UNEP and The Economics of Ecosystems and Biodiversity (TEEB) study reports (TEEB, 2009; Solgaard et al., 2012). Moreover, the project was also fêted as the 2013 recipient of the SEED Award of UNEP/UNDP and IUCN.[2]

Existing explanations for carbon forestry project outcomes in Uganda have tended to focus upon comparing contemporary institutional arrangements (Jindal et al., 2008; Peskett et al., 2011; Reynolds, 2012; Tienhaara, 2012), and/or emphasising the historical and political-economic contexts upon which those arrangements are layered (Nel and Hill, 2013; Cavanagh and Benjaminsen, 2014; Lyons and Westoby, 2014). The latter have implicitly and explicitly highlighted issues of environmental justice. However, this paper contributes to these existing analyses by prioritising empirically derived notions of justice amongst local people affected by two strongly differing interventions. We build on this to examine how these notions of justice influence people's reactions to the projects and the eventual project outcomes. Through explicit attention to empirically derived notions of justice across two contrasting cases, this paper seeks to contribute to an emerging strand in the literature (e.g. Sikor, 2013; Martin et al., 2014; He and Sikor, 2015). Because this focus on empirical notions of justice is comparatively recent, it has thus far been relatively absent from studies of carbon forestry. It is the contention of this paper that attention to rural people's ideas about justice, and experiences of (in)justice, in conjunction with historical and institutional analyses, allows a fuller understanding of the reactions of local people to carbon forestry projects and the outcomes of these projects. Our comparative examination of the influence of local notions of justice on the outcomes of the TFGB and UWA-FACE carbon forestry projects broadly illuminates the ways in which UWA-FACE ran counter to local ideas about what is just, leading to various forms of resistance that culminated in the project's decline. In contrast, TFGB is broadly compatible with many prevailing local ideas about justice, contributing to the project's relative success. More broadly, this analysis highlights how affected people's notions of environmental justice can have material implications for the success or otherwise of environmental interventions.

First, this paper details our empirical approach to justice. Second, we describe our methodology, followed by a presentation of brief case histories and descriptions of the institutional arrangements of each project that outline external assessments of justice. Our results in Section 5 onwards then link empirical notions of justice to local reactions and project outcomes.

[2] http://www.seed.uno/awards/all/trees-for-global-benefit.html.

2. Applying an empirical justice lens to two cases of carbon forestry in Uganda

The empirical environmental justice approach taken in this paper builds upon that of Martinez-Alier (2002); Schlosberg (2007); Walker (2012) and Sikor (2013), who have shown how multiple notions of justice inform environmental practices and politics in the Global South. In contrast to other analyses (e.g. Corbera et al., 2007; Mathur et al., 2014), these 'empirical' approaches do not assert or apply universal justice principles, for instance by starting from a theoretical position such as Rawls' theory of justice as fairness. As such, empirical justice analyses do not provide a template for external evaluations of justice, instead seeking to reflect perspectives that are qualitatively and inductively understood. Empirical approaches seek to understand the notions of justice asserted by people, and how some notions gain support and come to be considered legitimate. Such an approach does not essentialise prevailing conceptions of justice in any given time and place, but rather remains attentive to the ways in which both subjectivities and perceptions of justice are shaped and re-shaped over time in different historical and geographical conjunctures. The approach therefore accepts the inherent difficulty of weighing the relative validity of competing notions in a purportedly 'objective' or context-independent manner. Emphasis is instead placed upon understanding the notions of environmental justice that are important to people, and analyzing how these affect people's demands, activities, and most pressingly their reactions or 'responses from below' (e.g. Hall et al. 2015). Accordingly, the paper discusses wide-ranging notions of justice that were inductively elicited, and that extend over interdependent scales between the individual, community, and the global.

We draw upon a framework developed by Sikor et al. (2014) to make sense of diverse notions of justice. This does not pre-specify characterizations or notions of justice, but seeks to deal instead with 'actual (empirical)' (Sikor et al., 2014; p. 525) and historically and geographically situated notions of justice. For the purposes of comparison, however, the framework does highlight dimensions, subjects and criteria of justice (see Fig. 1), in relation to which inductively elicited notions of justice can be post-hoc categorized, described and related. Similarly to assist with post-hoc analysis, the framework incorporates Schlosberg's (2004) dimensions of distribution, participation, and recognition. Here, distributive justice refers to the ability of different actors to, for instance, enjoy environmental or economic benefits related to resources, or avoid environmental harms. Participation, or procedural justice (as we refer to it in this paper), relates to how decisions about environmental management are made. This includes attention to decision-making in terms of people's roles and the rules governing the process. Finally, recognition involves acknowledging the individual and collective identities of people, as well as their values and histories in ways that demand respect of social and cultural differences, including different visions of the relationship between humans and the environment (Martin et al., 2016).

In our usage, 'subjects' are the kinds of stakeholders considered to possess rights or bear responsibilities, assert demands for recognition and/or a role in decision-making, be deserving of care, or to bear responsibilities for an environmental process or change. 'Subjects' in this sense might therefore include rights-holders and duty bearers in rights terminology. Common examples of subjects in environmental interventions are the local poor, entire local populations, indigenous peoples, global society, future generations, groups with globally high resource consumption, non-human organisms, and 'nature'.

Criteria are decision-making guidelines that organize the relationship between subjects with reference to particular dimensions of justice. For example, distribution of natural resources among humans can be equal, needs- or merit-based, or dependent on the existing distribution of rights.

One aspect of this empirical approach to justice is that it makes no a priori assumptions about whether claims of justice are equally

legitimate or influential (Walker, 2012; Sikor, 2013); rather it recognizes the influence of power relations, the political-economic context, and historical factors in how well received certain notions of justice become. Only some claims receive support in public discourse as being morally right, whereas others encounter substantial opposition. Claims are not equally influential, as some become more visible, while other perspectives may not gain traction in national or international decision-making processes. People assert notions of justice against a background of differences in wealth, power, and identity, and rarely operate on a level playing field when making claims. Notions of environmental justice that are considered legitimate and influential thus also reflect unequal power relations as well as the prevailing political economic context (He and Sikor, 2015; Schroeder et al., 2008).

We build on this empirical justice framework by examining what justice themes relate to carbon forestry and Payments for Ecosystem Services (PES) in the literature. Okereke and Dooley (2010) find carbon forestry proposals to be frequently underpinned by notions of market justice. Here, social inequalities tend to be accepted as the inevitable consequence of liberty and enterprise. Another tenet of market justice is the emphasis on property as the criterion of distribution (Okereke and Dooley, 2010), and this becomes important in our analysis. Offsetting approaches tend to cast subjects of justice to be within current generations in terms of the distribution of responsibilities and rights. Another principle underpinning offsetting relates to that of the global resource dividend (Pogge, 1998), by which those disproportionately affecting global commons are 'made to[3] compensate those who have been disadvantaged' (Okereke and Dooley, 2010; 84). However, vigorous debates concern the appropriateness of industrial nations, or individuals within them, effectively paying to absolve responsibility for emissions, particularly in light of massive historical emissions disparities (Smith, 2007).

Recent literature has furthered the empirical analysis of justice in PES projects (Martin et al., 2014; He and Sikor, 2015). Martin et al. (2014) examine local conceptions of justice related to a biodiversity PES in Rwanda, while He and Sikor (2015) examine local reactions to a state reforestation programme in China. Martin et al. (2014) compare empirically derived evaluations of justice to the globally referenced notions of justice embodied in PES. This illuminates local people's recurrent preference for an egalitarian distribution, differing distinctly from the opportunity cost based distribution tending to be favoured on fairness and efficiency grounds by some economists and other scholars of PES (e.g. Wunder, 2007; Jack et al., 2008). Meanwhile, He and Sikor (2015) show how people's overriding concern for distributive rather than procedural justice leads them to cooperate with the Sloping Lands Conservation Project (SLCP), despite its apparent top-down implementation. Here, empirical attention to notions of justice has helped to explain people's reactions to, and the ultimate outcomes of, environmental interventions. It is this link between people's notions of justice, their reactions to interventions, and the ultimate outcomes of interventions that we examine across two contrasting cases in the ensuing sections.

3. Methodology

Central to our research design is the selection of two cases, both of which arguably constitute paradigmatic cases (see discussion in Flyvbjerg, 2006), representing somewhat extreme manifestations of carbon forestry. The case comparison illuminates interesting differences between notions of justice in UWA-FACE, widely considered in public discourse to be problematic or unjust (Lang and Byakola, 2006; Cavanagh and Benjaminsen, 2014), and TFGB, which is conversely understood by some as exemplary. These cases were brought into comparison after their original execution. The approximate location of the two projects is displayed in Fig. 2.

The data collected in both case studies were broadly qualitative in character, and we sought to understand how processes and decisions associated with the projects were considered by local people in terms of justice, and how these notions informed people's reactions to the projects. In both cases, focus group and interview transcripts were analysed as texts containing explicit and implicit evaluations of justice. Aspects highlighted in the Sikor et al. (2014) framework were drawn out of the data in the two case studies, and the cases were compared in relation to these themes. We report the predominant, as well as less prevalent claims made about justice in both cases. The structure of the framework aided the comparability of these two diverse cases.

Data collection took place in three fieldwork events. Data collection at TFGB was led by the 1st author and drew primarily upon semi-structured interviews on the above themes with 81 participants (43% of total), randomly sampled from the 2008 participation register. 41 non-participants were also randomly spatially sampled. Supplementary data include interviews with project staff, and observations of farmer sensitisation meetings and monitoring. Further methodological information is documented in Fisher (2011).[4] Data were collected in 2008/9, meaning that results reflect the project at that time, rather than currently.

Field period 2 was led by the 2nd author in 2009 and 2011 and involved data collection through focus group discussions and interviews with plantation-adjacent communities, interaction with key respondents (53 SSIs, sampled purposively), and analysis of official or project-related documentation. Further methodological information is documented in Cavanagh and Benjaminsen (2014; 2015). In 2014, a short period of fieldwork (period 3) was undertaken in communities around Mount Elgon, led by the 1st and 4th authors, using interviews and focus groups. This followed up on the post-2011 developments and explored the representation of the issues at higher scales.

4. The Cases: Trees for Global Benefit and Uganda Wildlife Authority – Forests Absorbing Carbon Emissions

4.1. Trees for Global Benefit

TFGB is a smallholder carbon afforestation project in the former[5] Bushenyi District, administered by Ecotrust (an NGO), using the Plan Vivo standard[6]. TFGB commenced in 2002 under the Uganda forest sector reform, to pilot the feasibility of carbon finance as a mechanism for innovative financing in forestry (Owen, 2003). Bushenyi was perceived to be a conducive area with relatively high social cohesion and comparatively settled property rights. This may be a result of the colonial administration's attempts during the 1950s to individualize and formalize tenure, which Mamdani (1976) notes was most successful in the southwest of Uganda (see also Uganda Protectorate (1961)). The population density in Bushenyi District is currently 224/km^2. TFGB project activities are dispersed over a large area, with less than 1 per cent of the resident population participating. Ecotrust were present in the area previously, promoting Eucalyptus plantations and efficient stoves.

To participate in the project, prospective participants register at least one hectare of their private land (under customary recognition), stipulated to ensure the household has sufficient subsistence land (Plan Vivo, 2008). This also avoids the proportionately high transaction costs

[3] Although this is phrased in a compulsory manner, one curious element of voluntary carbon market activity is that the impetus for offsetting does not come from regulation, but from individual choices to seek to reduce net emissions.

[4] This is the word used by project staff to describe project information dissemination meetings.

[5] The former Bushenyi District has recently been subdivided into 5 new districts as part of the Ugandan Government's programme of democratic decentralization.

[6] For more information about Plan Vivo, see www.planvivo.org, including information on the standard at: http://www.planvivo.org/docs/Plan-Vivo-Standard.pdf.

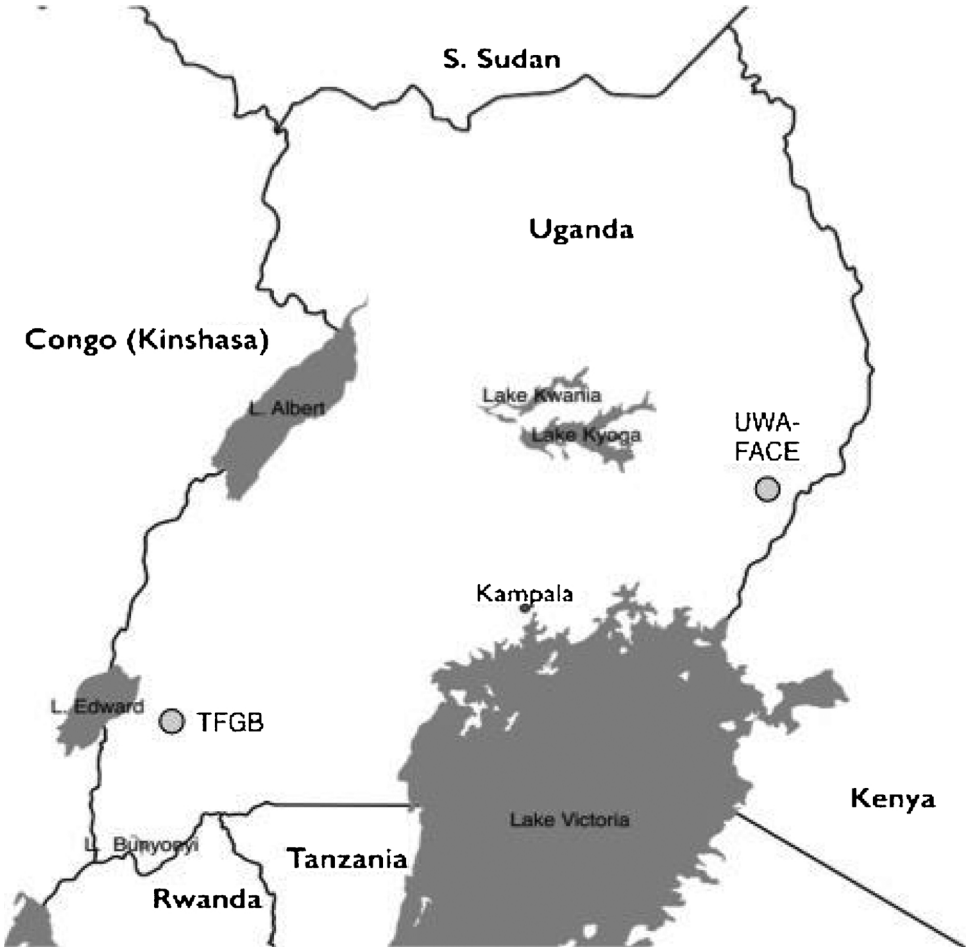

Fig. 2. Map of Uganda showing the approximate locations of the studied projects (TFGB and UWA-FACE).

of working with smallholders with little land (cf. Wunder, 2008). Participants are required to plant indigenous trees in woodlots or agroforestry systems and *Eucalyptus* species are excluded from Plan Vivo protocols. After planting, participants make a formal application and household members sign a contract with Ecotrust. The contract obliges participants to maintain their plantations for a period between 25 and 50 years (recent and initial contracts, respectively). In return they receive 60% of the carbon sales price (Ecotrust takes 40% for implementation (Ecotrust, 2009)), which is disbursed in five payments spread over the ten years following plantation establishment.

As has been found more widely in PES (Corbera et al., 2007), TFGB is characterized by a relative lack of scope for local people's participation in project design and implementation, crucial aspects of procedural justice (Fisher, 2013). Partly because carbon demand originates elsewhere, the terms of such interventions tend to be developed elsewhere, and limited scope therefore exists to govern them in a participatory manner. The result is that TFGB is offered to participants, to adopt or not, with little space for negotiation. Furthermore, the onerous monitoring demands of the carbon market forces implementers to be accountable to carbon buyers, rather than to participants, and relatively focused upon technical monitoring procedures rather than a participatory agenda (Fisher, 2013). Contract length also involves significant timescales, with attendant implications for households' land management and potentially, flexibility. That said, timber, if extractable and managed with sound silviculture, will be of significant economic value in the long term, although this precludes shorter-term cash cropping opportunities.

Considering further dimensions of justice, significant distributive considerations are pertinent in TFGB. Conditional interventions automatically seek those best able to secure an ecosystem service, in this case wealthier people, with surplus land and the capacity to engage with an unfamiliar type of intervention. This has led to a strongly inequitable distribution of contracts. Equitable access to the project is strongly limited by people's existing condition regarding land ownership and different aspects of wealth (Fisher, 2013). The project's access limitations are linked to a criterion of justice. Access is possible only for those who own and can enroll surplus land. The conception of justice in project design here is market justice, based on property allocation.

4.2. Uganda Wildlife Authority – Forest Absorbing Carbon Emissions (UWA-FACE)

Mount Elgon is an extinct volcano straddling the border between Uganda and Kenya. On the Ugandan side, Mount Elgon National Park (MENP) covers over 1000 km^2 and borders eight districts. The Uganda Wildlife Authority coordinates the governance of the park from their regional office in Mbale town and a number of boundary outposts. The Bagisu community, the main focus of this analysis, are Bantu agriculturalists primarily residing in the southern and western MENP-adjacent districts. The fertility of the volcanic soils and the wetter highland climate support lucrative crops such as carrots, onions, and valuable Arabica coffee (Petursson et al., 2011). Largely as a result, the region immediately adjacent to MENP is one of the most densely populated areas in rural Uganda, with population densities ranging up to 950 per km^2 in the south (see Table 1). Land scarcity and fragmentation via inheritance are therefore significant problems.

Mount Elgon has a chequered history of conservation governance since the imposition of an exclusionary protected area (PA) model by

Table 1
The projects in comparison.

	Trees for Global Benefit	UWA-FACE
Year commenced	2002	1994
Implementer	Ecotrust (Ugandan NGO)	Uganda Wildlife Authority (state agency), partnership with Dutch NGO, the 'FACE' Foundation
Land tenure of carbon tree plantation	Smallholders', customarily-, or formally-recognised	MENP officially state owned, but extent of boundary disputed in many areas.
Recipient of carbon payments	Smallholders	Uganda Wildlife Authority/FACE Foundation
Population density of relevant districts (people/km^2)	224.4[a]	Varies by district from 112 (Kween) to 950 (Mbale)[b]

[a] Mean population density of districts making up former Bushenyi District. Population Figures from UBOS (2014), combined with land sizes from Bushenyi District Local Government (2009).
[b] Figures from UBOS (2014) combined with district area statistics corroborated from various sources (http://www.citypopulation.de/php/uganda-admin.php?adm2id=026; Egunyu et al., 2013).

the British colonial state in the early twentieth century (Norgrove and Hulme, 2006). Political turmoil in the post-independence era led to mismanagement and poor governance (Eltringham and Malpas, 1993; Turyhabwe and Banana, 2008). Amin's 1975 Land Reform Decree encouraged rural populations to convert PAs to agriculture (Webster and Osmaston, 2003). Moreover, under Obote's second regime, forest conservation officials allegedly sold counterfeit titles to land within the reserve (Norgrove and Hulme, 2006; Cavanagh and Benjaminsen, 2015). Collectively, these factors precipitated the quasi-legal encroachment and deforestation of approximately 25,000 hectares of the reserve by the time Museveni's National Resistance Movement came to power in 1986 (Scott, 1998; White, 2002).

Supported by a range of bilateral and multilateral donors, Museveni's government upgraded Mount Elgon to national park status in 1992–3, as part of a campaign to repair the damage done to the PA estate during the Amin and Obote regimes. Throughout this process, large numbers of people were evicted from their homes within the newly established national park. Vangen (2009), for instance, estimates that the figure could exceed 100,000. The Ugandan government provided no compensation for the loss of land and livelihood, claiming that all had settled there illegally (Norgrove, 2002).

A pioneer forest carbon project in Africa, UWA-FACE was initiated in 1992 by a contract between the then Ugandan Ministry of Trade, Tourism, and Industry (MoTTI), and a Dutch NGO, the Forest Absorbing Carbon Emissions (FACE) Foundation.[7] The initial project contract (FACE Foundation, 1992) stipulated that the project should reforest the 25,000 hectares of MENP that had been degraded throughout the tumultuous post-independence period – the land from which communities would soon be dispossessed (Cavanagh and Benjaminsen, 2014). FACE agreed to bear reforestation costs, including labour and procurement. In return, Ugandan conservation authorities were required to relinquish the rights to market the carbon dioxide in the new plantations, and to guarantee their security for a period of 99 years.

In interviews (field period 2) and documents (e.g. UWA, 2010), UWA and the FACE Foundation (1992) initially claimed that the scheme would result in 'triple win' outcomes for climate change mitigation, biodiversity conservation, and local livelihoods. The latter would comprise employment in the reforestation of the 25,000 hectares of 'degraded' land and other income in exchange for the provision of tree seedlings (Cavanagh and Freeman, 2018). However, employment did not materialize to the extent promised and there was little else by way of distributive benefits for local people (IUCN, 2002; 21). Procedurally, local people were neither engaged with project design nor implementation to any significant extent.

In many respects, UWA-FACE at Mount Elgon largely collapsed merely ten years after its establishment. It only reforested 8000 of the planned 25,000 hectares before the cessation of activities in 2002 (Cavanagh and Benjaminsen, 2014). Furthermore, by 2002, nearly 44% of the project's compartments had been deforested in whole or in part (UWA, 2010). This failure was in large part attributable to local resistance related to historically-situated contestations around land, and the way this was exacerbated through the attempted reinforcement of the contentious PA boundary (Cavanagh and Benjaminsen, 2015; Cavanagh and Himmelfarb, 2015). UWA-FACE also became the subject of unprecedented national and international mobilisations. Lawsuits against UWA and the Ugandan Attorney General are being heard by the High Court in Mbale (Hurinet Uganda, 2011). These concern human rights abuses inflicted during the process of evictions, and surveying errors related to the position of the MENP boundary. As a result of these contestations, this pioneering carbon forestry project was rejected by many local people, pilloried by international civil society campaigns (e.g. Lang and Byakola, 2006), and quietly abandoned, although other UWA-FACE activities continued in Uganda.

4.3. The projects in comparison: the significance of history, context and institutional arrangements

The case descriptions demonstrate the quite different histories, project institutional arrangements, and trajectories of these two projects, summarized in Table 1. Most obviously, the projects differ significantly in the contextual situations as regards history and property rights, and in the distribution of benefits and costs amongst local people. The main planned direct benefit of UWA-FACE for local people was employment, whereas TFGB does provide payments to smallholders. As regards history, Bunker (1987) and Cavanagh and Himmelfarb (2015) put into historical context the legacy of problematic relations between the Bagisu and the state which later also underpinned problems in UWA-FACE. By contrast, the historical context in the former Bushenyi district has given rise to comparatively more settled recognition of land ownership (Mamdani, 1976). Furthermore, TFGB takes place on private lands, rather than a contested PA. TFGB institutions do not challenge property arrangements, but protect them through the planting of trees, possibly even enhancing people's claims to land ((interview data field period 1; Wanjiku and Place (2008)). In contrast, UWA-FACE was superimposed onto a region with a troubled history of contested property claims, which were exacerbated by the project's intended land use change (Cavanagh and Benjaminsen, 2014; Cavanagh and Himmelfarb, 2015; Cavanagh and Freeman, 2018).

As noted in the introduction, this paper recognises the significance of the outlined differences in history, context and project institutions. However, we also contribute to the existing literature by examining variable local reactions to these two cases, and especially through attention to the empirically identified notions of justice outlined in Section 5 onwards, which builds on the predominantly external assessments of justice in Section 4.

[7] The FACE Foundation is now known as 'Face the Future' (http://www.face-thefuture.com/en/).

5. Empirically derived notions of justice in carbon forestry cases in Uganda

5.1. Trees for Global Benefit

The empirical justice framework helps us to distinguish and understand notions of justice expressed by project participants and local people. One of the challenges of eliciting notions of justice in the TFGB case was that participants often did not have a clear understanding of the project rationale as an offsetting strategy to sequester carbon dioxide emissions produced elsewhere (Fisher, 2013). Much project management effort is directed towards monitoring, and comparatively little time is spent developing participants' understanding of the intervention. Ecotrust staff talked about the difficulties of trying to engage people with unfamiliar concepts around carbon offsetting. Hence, there is generally poor understanding of the project's rationale. Only a small proportion (7.4%) articulated a comprehensive understanding of the project, including its international dimensions and the transfer of responsibility for emissions. As noted elsewhere (Fisher, 2013), understanding of the global nature of climate change, and the transfer of responsibility for emissions with the offset is hindered by widespread confusion about what carbon is and why people pay for it if they do not want land or trees. Understanding is also hindered by an existing association between trees and local rainfall. As a result, and in line with the work of Winnebah and Leach, (2015) in Sierra Leone, the climatic element is often understood as local rainfall or 'fresh air', crucially not incorporating the scale and responsibility issues associated with offsetting. In TFGB, people often considered that they had caused the problem to which the carbon project was addressed. Our aim to study local notions of justice is affected by the extent to which the project is not well understood locally. The notions of justice we elicited should therefore be interpreted in light of the partial understandings people have of the project's rationale. Nonetheless, participants interpret the project in their own ways and it is important to examine the notions of justice they apply.

Perhaps linked to the challenges of understanding, and complexities of the carbon accounting, rarely were we aware of participants demanding to be more involved in developing project procedures, or to change the terms of the intervention. This lack of expectation around procedural concerns is manifest in people's responses about fairness, where almost universally people respond in terms of distributive considerations. Distributive concerns therefore dominate how people evaluate the justness of this project. Here, two aspects of distribution are important: equity in access (to project participation), and equity in distribution of costs and benefits along the value chain (Brown and Corbera, 2003).

Taking access to the project first, equitable access is strongly limited by people's socioeconomic status at project outset (Fisher, 2013). The importance of surplus land ownership as the criterion for access was not widely critiqued or considered unjust locally; rather, it seemed to fit with an existing expectation that wealthier people, or people with more diverse livelihoods and higher capacities would be 'early adopters' of unfamiliar interventions. That said, the inaccessibility of the project to people with less land had not escaped non-participants' attention, and a number commented that the project held little for them (non-participant interviews, field period 1). Perhaps because it was confined to a (mild) concern of non-participants, and because the benefits of participation were not perceived to be compelling enough to stimulate dissatisfaction, this inequitable distribution of project access did not seem to have compromised legitimacy.

Turning attention towards the second distributive aspect of costs and benefits, we enquired as to whether project participants regarded the payments to be fair. Negative comments about fairness tended to concentrate here – focused not on distribution of project access, but of costs and benefits. Participants often commented that the project should pay farmers more for their activities. It was particularly striking that this was the predominant view of those few respondents who demonstrated a full understanding of the intervention; they did not object to the rationale, but raised distributive concerns. This perspective is reflected in the following quote: (in response to a question about fairness[8]):

> [It would be fair]... *"if they pay us good money, but they are paying us little money and we are helping the whole world – it is global. We are helping the whole world, and they are paying little money and we have sacrificed our land to absorb CO_2..."* (interview, field period 1).

Interviews with Ecotrust corroborate this, as staff report they were regularly challenged on the price of carbon offered to participants.

We now characterise which actors local people see as being subjects of justice. Most participant respondents characterise the justice-relevant subjects in the intervention as being themselves and the project implementer. This affords little consideration for carbon buyers as subject to any obligations concerning justice, beyond a limited distributive claim that they should pay more. This might be one implication of the constrained understanding people have of this intervention. While participants tend to be vaguely aware that buyers of the carbon exist, they commonly lack understanding of their motivations, or much identification with their lifestyles.

The restricted perception of the subjects of justice is interesting because the lack of attribution of much obligation for carbon buyers in relation to justice stands in contrast to some prominent critiques of offsetting. Whereas a key critique is that offsetting absolves wealthy polluters of their emissions responsibilities, and this is highly controversial to some (see for instance, Bolivian government position on climate change (Okereke and Dooley, 2010)), this was not contested by TFGB participants.

To interpret further people's evaluation of the subjects of justice, it was evident that project participants tended to frame the purpose of their own activities as 'helping' some notion of a global community (see quote above, TFGB participant, Mar 2009); they did not frame this as a reciprocal relationship to which they applied justice criteria. This notion of 'helping' may have come from project staff: the project was commonly presented to participants as a generalised means for helping people overseas, with no mention of the disparity in consumption, emissions, or transfer of responsibility. For instance:

> *"You plant trees here, but you are helping people in the US, Europe, Kenya and Japan – all over the world..."* (Ecotrust staff member at sensitization meeting, field period 1).

To triangulate our findings about participant perspectives on the premises of offsetting, the role of buyers, and issues of responsibility for emissions, the first author asked project coordinators working with participants whether they had ever come across any related notion of unfairness. Their answer gave the impression they had never thought about the issue in those terms. Ecotrust staff from the main office also reported they were not aware of participants querying the rationale of offsetting. More broadly, when asked if they had ever come across controversy about Uganda being a sink for emissions, project staff answered:

> *"No, I don't think it is [controversial]. I haven't come across anything to make me think that it is..."* (Ecotrust staff member interview, field period 1).

Justice critiques of offsetting were also downplayed at sensitization meetings, e.g.:

> *"You are selling the absorption of CO_2 into your trees. The tree is yours, the timber is yours. A person is buying the air entering your trees. Nobody will come to take your tree. What is the problem with someone giving you*

[8] Specific question asked: Do you think the monitoring and payment process is fair? [participant's answer, followed by further probing on reasons for their assessment].

money for a tree which is yours?" (Ecotrust staff member at sensitization meeting, field period 1).

These quotes show that staff have not emphasised justice critiques of the project's rationale. That such critiques have been downplayed by project staff may go some way to explain the lack of contestation amongst people affected by the intervention.

5.2. Uganda Wildlife Authority – Forest Absorbing Carbon Emissions

Notions of justice at Mount Elgon are heavily influenced by the historical and institutional context, described above, which has seen a series of official efforts since the colonial era to dispossess people of their land and/or to constrain and reconfigure their access to natural resources (Bunker, 1987; Cavanagh and Himmelfarb, 2015). Perhaps the most salient grievances of the Bagisu community in particular relate to perceived social and environmental injustices arising as a consequence of these processes.

Both the threat and reality of dispossession at Mount Elgon have pushed claims concerning the recognition of property squarely to the fore. Landless people in Bugisu have few livelihood options, as frequently neither labouring on a more prosperous farmer's property nor migrating to a nearby town in search of work offer realistic prospects for a dependable income. For young adults, the inability to inherit a parent's land may also limit possibilities for marriage and thus for full social adulthood in one's clan or community. Consequently, the loss of land is often resisted with all available means (see Norgrove and Hulme, 2006; Cavanagh and Benjaminsen, 2015).

However, people's demands go beyond property rights to include recognition of cultural linkages with the land, the forest, and forest resources. Indeed, one of the most characteristic aspects of Bagisu society is the gathering of bamboo shoots (*malewa* in Lugisu) from the forest, which maintains a perceived connection with the ancestors and their management of the landscape (Scott, 1998; Lang and Byakola, 2006). Forest resources and wildlife are also used to create instruments and traditional costumes for use in birthing, circumcision (*imbalu*), marriage, and burial ceremonies, many of which take place within the forest itself. Not least, these cultural linkages are recognised in the mountain's 2009 designation as a UNESCO Man and Biosphere Reserve. The salience of these cultural dimensions also shed light on why certain communities have been so reluctant to participate in resettlement schemes such as those responding to the large-scale mudslides in Bududa district. Some resettled households have even subsequently returned at their own expense (Mafabi, 2010). Importantly, relocation entails lost access to Mount Elgon's fertile soils and abundant forest resources, but also – and perhaps more significantly – it also entails disconnection with a heritage of cultural practice.

Beyond these foundational issues of property rights and recognition, grievances arise in relation to concerns of procedural injustice and violence. Various MENP-adjacent communities have made allegations of assault, torture, rape, theft, and murder against UWA, police, and military staff during two major eviction events and further recurrent conflictual interactions (see Lang and Byakola, 2006; Okwaare and Hargreaves, 2009; Hurinet Uganda, 2011; focus group discussions, field periods 2 & 3). A procedural concern of communities relates to a perception that they are afforded no means of redress or appeal, because the police, army, and UWA personnel allegedly collude to protect one another from accountability. Communities therefore frequently express little desire or motivation to report their experiences. The civil-legal claims described above could thus perhaps also be seen as an attempt to circumvent the more proximate criminal justice authorities that are alleged to block communities' pursuit of justice.

Communities were also critical of the narrow scope of the distributive aspect of UWA-FACE in that it only sought to create limited employment opportunities. This narrow scope made it hard to understand people's broader notions of distributive justice in relation to carbon forestry. However, the presence of linked initiatives with a distributive element, such as MENP's benefit-sharing policy from PA revenues, give us a lens to understand local notions of distributive justice. For instance, the 2000 Uganda Wildlife Act recognises PA-adjacent communities as rights-bearing stakeholders, stipulating that PAs must redistribute 20 per cent of gate collection fees to local government. UWA's benefit sharing policy claims that the main purpose of these redistributions is to:

> "ensure that communities living adjacent to parks obtain benefits from the existence and management of the parks so as to contribute towards improving their welfare…" (UWA, 2000; 1)

Despite these and related provisions, respondents express considerable frustration about the meagre benefits received and high costs borne due to MENP-adjacent residence (see also Vedeld et al., 2016). Communities also express deep skepticism of benefit sharing efforts, which have been shown to be highly unequal in terms of their distribution around the park (Nakakaawa et al., 2015, see also Cavanagh and Freeman, 2018). Hence, benefit sharing is widely perceived as a means of rewarding compliance with conservation-related policies and regulations, rather than for universally alleviating the socioeconomic costs of conservation in the area. As one community member put it:

> *"[r]evenue [also known as benefit] sharing is a myth. We have not seen it. Instead, the conflict is benefitting UWA… it is a cycle revolving"* (focus group, field period 2).

The benefit-sharing arrangements, and people's response to them, highlight a number of issues demonstrating how distributive matters are intricately entangled with other dimensions of justice. Firstly, the benefit-sharing policy conceives benefits as generating marginal improvements in the livelihoods of local communities, for the instrumental purpose of minimising conflict with the PA. This leaves little provision for any redress for damages to livelihoods entailed by the actual process of PA institutionalization, which would constitute rectificatory justice. Foundational grievances related to the alienation of land and resources under colonial and post-colonial authoritarian rule for the establishment of PAs do not factor into this calculus of benefit sharing, and are not eligible for redress. The policy is also silent on recognition-based aspects of justice, and it is criticised locally as a result.

The MENP case also illustrates how distribution and procedural justice are deeply intertwined. The distribution of revenue sharing projects around MENP would suggest that finances are being systematically directed away from communities in open conflict with park authorities, and towards those that cooperate (Cavanagh and Benjaminsen, 2014; 2015; Nakakaawa et al., 2015; Vedeld et al., 2016; also stated in field period 3). As a result, numerous local residents perceive existing benefit sharing procedures as a means of penalizing or otherwise marginalizing those communities who are acting upon their grievances against the state and conservation authorities. Furthermore, the unwillingness of local authorities to consider historically much deeper grievances about compounding processes of centralizing state control over land and resources also raises issues of procedural justice, or the manner in which certain distributive issues come to be accepted (or not) as legitimate topics for debate.

Having considered dimensions of justice, we now examine the subjects of justice important in the UWA-FACE case. The material reported so far demonstrates the importance of the contested relations between local people and the state. While the subjects of justice considered locally are predominantly villagers (with some sense of collective identity) and the state (via its public conservation agencies), there are also some interesting justice-based claims made of carbon buyers and intermediaries. For example, the following quote indicates how local people frame the situation at MENP predominantly as a struggle between themselves and the state:

"When living on our piece of land, we kept the environment very well, we kept our trees, but when UWA took over, they are now doing charcoal burning and pit sawing. The park may not be forested in 10 years. But formerly, we were caring for trees. Now there is no good relationship between the community and UWA and there is no security for our environment" (focus group, field period 3).

The struggle against state agencies and their conservation approach is highlighted here by the respondent's questioning of who is the appropriate steward of the forest; the criticism of UWA is aimed at the heart of their conservation mandate. Moreover, a second quote highlights both the deleterious consequences and the extent of local mobilization in struggles against the state:

"We have brought the clans together to contest this. We were sick, there was no food, no settlement, the children were lacking education and sometimes the wives ran away when there was no food, so this provoked us to bring a case against the government. Hunger can kill, so if the government can kill us, the thought that we might die because of hunger brings us morale." (focus group, field period 3)

Perhaps because the struggles between people and the state predated UWA-FACE, the subjects of justice tend to be conceived predominantly by local people at a scale from the national downwards. That said, perhaps partly related to sustained engagements with international NGOs, journalists, researchers, and activists interested in the UWA-FACE conflict, local 'organic intellectuals' (Cavanagh and Benjaminsen, 2015) have cultivated a critique of the north/south climate justice aspects of carbon offsetting. As one community activist put it in an interview with a Dutch journalist:

"Let Holland come up with a solution. If industries may turn into a problem to the people of Holland, do not come and punish people here, that we must plant here trees to compensate for the pollution of air in Holland. That is colonialism. And we think here in Uganda, we are told that colonialism ended some time back." (cited in Zembla, 2013)

Another activist made a similar critique during a focus group meeting:

"These whites constructed industries, factories, but these people are now running to Africa. Who is the cause of this ozone layer [sic] problem? If the whites have created factories, these whites cannot plant trees in US, in UK and London, these natural forests cannot be grown there. If we mean to punish those people who have created this problem with the ozone layer [sic], then we should go to those whites." (focus group, field period 3).

Critiques such as these concerning the justice premises of offsetting bring international actors in the form of northern polluters into the frame much more prominently as subjects of justice.

Finally, we consider the criteria of justice that local people apply in this case. These are expressed in the resistance of people to dispossession and the perceived exacerbation of tenure insecurity associated with UWA-FACE. The key justice criterion applied is based on historical and ancestral possession and use of land and resources, and this is revealed in the assertion of a combination of indigenous-, ancestral-, human-, and property rights to the area. In a poignant statement, one community elder asserted all of the above during a focus group discussion:

"The park belongs to our ancestors, many of them are even buried here [ancestral claim] … In 1935, the British conserved the land, rangers were there, but we were allowed to cultivate because we are the indigenous people [indigenous claim] … Since 1993 and the national park, there are now too many boundaries, so they also take the land that we own [property rights claim] … Why should we go hungry on our fathers' land? [human rights/ancestral claim]" (in Cavanagh and Benjaminsen 2015: 738–9).

Having now considered dimensions, subjects and criteria of justice in both cases, we go on in the ensuing discussion section, to link these with project outcomes.

6. Discussion and conclusions: linking empirical notions of justice with project outcomes in carbon forestry

People express notably different claims about justice in these contrasting projects. There is a predominance of distributive concerns within local conceptions of the justness of TFGB, even amongst those who demonstrate understanding of the offsetting rationale. While justice scholars highlight recognition dimensions (e.g. Honneth, 2001; Schlosberg, 2004; Sikor, 2013), in this case, issues of recognition are very rarely raised. Furthermore, people infrequently raise matters of procedural justice in TFGB, for instance by demanding more of a role in project design or implementation. The lack of expectation to participate in project design may be a result of the widespread mystification about carbon that people experience; if participants do not understand clearly the rationale, this may foster a low expectation to be able to affect what appear to be unfathomable and rigid procedures. Regardless of what underpins people's appraisal of justice, however, the upshot is that distributive matters in relation to costs and benefits, rather than project access, often take precedence in people's minds. It therefore appears that dominant local notions of justice are not particularly challenged by project institutions. In particular, the market justice principles of the intervention, which prioritise property as the basis of participation appear to resonate with people's prevailing notions of justice around property. Whilst there is occasional critique of this from non-participants, it does not seem to have mobilised in a way that has created any problems of legitimacy for the project. The result is that local people tend to appear to perceive overall that the project is just, they receive the project well and cooperate, and the activities expand.

By contrast, the UWA-FACE project highlights complex interrelations between distributive, procedural, and recognition-based aspects of justice. Claims for recognition are grounded in both individual and communal property in ways that contest the state's eviction of people from disputed areas. Claims are also made for recognition of place-based cultural linkages with the mountain and its resources. Related to these fundamental matters of recognition are procedural issues concerning the ability of local people to contest the activities, and alleged collusion, of the state agencies and conservation actors. Furthermore, people exhibit strong skepticism of related benefit-sharing policies at MENP, contesting their premises as well as their distributive implications and the way they appear to have been used to reward compliance (Cavanagh and Benjaminsen, 2015; Nakakaawa et al., 2015). Consequently, people highlight how distributive justice at Mount Elgon is integrally associated with other dimensions of recognition and procedural justice.

Another significant aspect of the UWA-FACE case regards the perspectives of local stakeholders about who is a subject of justice. Generally, the state and (collectively conceived) local people are considered the primary subjects of justice; these are most prominent in the narratives people describe concerning rights and responsibilities. However, beyond these actors, there is also a discernable narrative that critiques the justice premises of forestry offsets. This brings international actors in the form of northern polluters into the frame much more prominently as subjects of justice, and this stands in contrast to the characterization of subjects of justice in TFGB.

Having summarised the main emphases within this comparative empirical analysis of justice, the following conclusions contrast the cases and focus on what they demonstrate, particularly for project outcomes. Whereas local responses to UWA-FACE have been characterised by a full suite of concerns related to recognition, procedure, and distribution, recognition and procedural justice do not commonly feature strongly in local people's assessment of TFGB. Rather, contestation surrounding TFGB is mainly confined to the realm of

distributive justice and the allocation of costs and benefits of participation. This contrast is perhaps the most striking finding of the application of the empirical justice framework to these two paradigmatic cases.

It seems, therefore, that the contestation of a wider range of dimensions of justice in UWA-FACE is linked to the outcome of this project, which was a dramatic failure of legitimacy, and ultimately decline (Cavanagh and Benjaminsen, 2014). Researchers have pointed to apparent challenges of justice in TFGB: for instance, participants are not actively involved in project design; there is a strongly unequal intracommunity distribution of contracts; and the project confers restrictions on future adaptability (Fisher, 2012; Fisher, 2013; Schreckenberg et al., 2013). However, in contrast to UWA-FACE, participants' concerns are concentrated upon issues of distribution, and not these more procedural aspects. The way in which TFGB targets payments to the household scale is very important in matching the distributive concerns of participants, and the project is widely perceived to be just. This analysis shows that attention to actors' notions of justice can help researchers understand the outcomes of carbon forestry projects.

A broader conclusion relates to this finding about the comparative importance of distributive versus other dimensions of justice. A number of scholars have highlighted that ecosystem services governance interventions tend to prioritise distributive considerations (Martin et al., 2013; Sikor, 2013); this is also apparent in the MENP benefit sharing policy described in Section 5. The comparative analysis appears to indicate that recognition and procedural justice are perceived as necessary preconditions for distributive justice. This is indicated in two ways. First, in UWA-FACE, it is manifest in the manner in which, despite grave distributive concerns, people sometimes tend to highlight procedural or recognition matters of justice as a priority. In TFGB, the converse is true: local people do not contest recognition or procedural issues, but do raise distributive issues about the appropriate level of payment. However, these concerns do not appear significant enough to compromise legitimacy and the project's functioning is largely unaffected. Hence, distributive emphases of ecosystem services interventions will sometimes be unproblematic for project implementation, when project institutions are otherwise broadly compatible with local notions of justice. This finding, enabled by the comparative study design, shows how affected people's notions of environmental justice have material implications for the success or otherwise of environmental interventions.

Overall, these findings demonstrate, in line with He and Sikor (2015), that getting carbon forestry, or PES more generally 'to work' is not simply about 'identifying the right level of payment or picking a profitable tree species' (p.215). Rather, our analysis of empirically elicited notions of justice and how these interact with project institutions underscores the need to take an explicit focus on notions of justice in substantive social and economic impact assessments prior to project implementation. The exceptional naivety of UWA-FACE's failure to do any rigorous or historically-informed social analysis of affected communities was noted in a formal audit of the project in 2001: "[s]ocial impact assessment is not adequate. Negative social impacts have not been identified and steps have not been taken to reduce those negative impacts" (SGS Agrocontrol, 2001; 55; see also Cavanagh and Benjaminsen, 2014). Arguably, this marked the start of the project's demise.

While we have so far focused conclusions on dimensions of justice, interesting differences in the comparison of subjects of justice between these cases also arise. In TFGB, local people characterise the justice-relevant subjects as themselves and the implementer; mystery shrouded the buyers, but this appeared to protect buyers from much scrutiny as regards the justice of their activities. The comparison with UWA-FACE is instructive here: this case became highly contested at multiple scales, and with this contestation, the subjects of justice were significantly expanded in people's appraisal. Locals speak of a struggle encompassing all justice dimensions. Perhaps because of the more grave injustices associated with this case, and their breadth across justice dimensions, there is a much stronger sense in which the carbon intermediaries and buyers come under scrutiny from locals as subjects of justice, or perpetrators of injustice. This suggests that when globalised environmental interventions become widely contested, scrutiny will be drawn to a more extensive network of subjects of justice.

The divergent outcomes of these two cases also highlight the material implications of local notions of environmental justice for the success or failure of conservation, climate change mitigation, and other sustainable development interventions. While a previous generation of scholarship has warned of the ways in which "fortress conservation" can simply be imposed despite local resistance (Brockington, 2004), the complexities of implementing carbon offset forestry projects suggest a number of potential qualifications to this. While it is true that states and law enforcement agencies may continue to violently suppress local resistance to environmental interventions, such violence may in fact precipitate 'triple loss' scenarios for communities, state finances, and the environment if carbon sequestration or other environmental objectives are actually compromised. Indeed, as the UWA-FACE case at Mount Elgon suggests in particular, state violence may be effective at suppressing resistance, but not in successfully achieving conservation objectives. Consequently, there is a need for more research on how local notions and experiences of (in)justice affect the implementation of projects on the ground; how claims about justice are made at and across different scales; and how site-specific struggles become known within international policy circles. Indeed, in the global context of a new suite of Sustainable Development Goals and related 'green economy' initiatives, such considerations are more important than ever for the design of conservation and environmental change mitigation projects that are sustainable as well as in conformity with local principles of environmental justice.

Acknowledgements

This research is part of the 'Rethinking Environment and Development in an Era of Global Norms: An Exploration of Forests and Water in Nepal, Sudan and Uganda' project supported by the UK Economic and Social Research Council (ESRC) and Department for International Development (DFID) (Grant Number: ES/K012460/1). We express gratitude to all the research respondents at fieldsites in eastern and western Uganda who gave generously of their time. We are also grateful to two anonymous reviewers, whose constructive and challenging comments have contributed to the development of this paper.

References

Agarwal, A., Narain, S., 1991. Global Warming in an Unequal World. Centre for Science and Environment, New Delhi.
Brockington, D., 2004. Community conservation, inequality and injustice: myths of power in protected area management. Conserv. Soc. 2 (2), 411–432.
Brown, K., Corbera, E., 2003. Exploring equity and sustainable development in the new carbon economy. Clim. Policy 3 (Supplement 1), 41–56.
Bunker, S., 1987. Peasants Against the State: the Politics of Market Control in Bugisu, Uganda, 1900-1983. University of Chicago Press, Chicago.
Cavanagh, C., Benjaminsen, T.A., 2014. Virtual nature, violent accumulation: the 'spectacular failure' of carbon offsetting at a Ugandan national park. Geoforum 56 (0), 55–65.
Cavanagh, C.J., Benjaminsen, T.A., 2015. Guerrilla agriculture? A biopolitical guide to illicit cultivation within an IUCN category II protected area. J. Peasant Stud. 42 (3-4), 725–745.
Cavanagh, C.J., Himmelfarb, D., 2015. Much in blood and money: necropolitical ecology on the margins of the Uganda protectorate. Antipode 47 (1), 55–73.
Cavanagh, C.J., Freeman, O., 2018. Paying for carbon at Mount Elgon: two contrasting approaches at a transboundary park in East Africa. In: Namirembe, S., Leimona, B., van Noordwijk, M., Minang, P. (Eds.), Co-investment in Ecosystem Services: Global Lessons from Payment and Incentive Schemes. World Agroforestry Centre (ICRAF), Nairobi.
Corbera, E., Brown, K., 2010. Offsetting benefits? analyzing access to forest carbon. Environ. Plann. A 42 (7), 1739–1761.
Corbera, E., Kosoy, N., Martinez, M., Tuna, 2007. Equity implications of marketing

ecosystem services in protected areas and rural communities: case studies from meso-America. Global Environ.Change 17 (3-4), 365–380.
Ecotrust, 2009. Annual Report - Trees for Global Benefit. . http://www.planvivo.org/?page_id=45.
Egunyu, M., Mbabazi, J., Mugalya, A., 2013. Local government councils' performance and public service delivery in Uganda: Mbale district council score-card report 2011/12. ACODE Public Service Delivery and Accountability Report Series No.6, 2013. ACODE, Kampala, Uganda.
Eltringham, S.K., Malpas, R.C., 1993. The conservation status of Uganda's game and forest reserves in 1982 and 1983. Afr. J. Ecol. 31, 91–105.
FACE Foundation, 1992. General Conditions of Contract for CO2 Offset. FACE Foundation, Rotterdam, Netherlands.
Fisher, J., 2011. Payments for Ecosystem Services in Forests: Analysing Innovations, Policy Debates and Practical Implementation. Doctoral Thesis. University of East Anglia.
Fisher, J., 2012. No pay, no care? A case study exploring motivations for participation in payments for ecosystem services in Uganda. Oryx 46 (01), 45–54.
Fisher, J.A., 2013. Justice implications of conditionality in payments for ecosystem services: a case study from Uganda. In: Sikor, T. (Ed.), The Justices and Injustices of Ecosystem Management. Earthscan, London.
Flyvbjerg, B., 2006. Five misunderstandings about case-study research. Qualitative Inquiry 12 (2), 219–245.
Goldstein, A., Ruef, F., 2016. View from the Understory: State of Forest Carbon Finance 2016. Forest Trends' Ecosystem Marketplace, Washington, DC.
Hall, R., Edelman, M., Borras, S.M., Scoones, I., White, B., Wolford, W., 2015. Resistance, acquiescence or incorporation? An introduction to land grabbing and political reactions 'from below. J. Peasant Stud. 42 (3–4), 467–488.
He, J., Sikor, T., 2015. Notions of justice in payments for ecosystem services: insights from China's sloping land conversion program in Yunnan province. Land Use Policy 43 (0), 207–216.
Honneth, A., 2001. Recognition or redistribution?: Changing perspectives on the moral order of society. Theory Cult. Soc. 18 (2-3), 43–55.
Hurinet Uganda, 2011. Resource based conflicts and human rights violations in Uganda. A Case Study of Selected Protected Areas. Kampala, Human Rights Network Uganda/Diakonia-Sweden.
IUCN, 2002. Carbon, forests, and people: towards the integrated management of carbon sequestration, the environment, and sustainable livelihoods. Gland, International Union for the Conservation of Nature.
Jack, B.K., Kousky, C., Sims, K.R.E., 2008. Designing payments for ecosystem services: lessons from previous experience with incentive-based mechanisms. Proc. Natl. Acad. Sci. 105 (28), 9465–9470.
Jindal, R., Swallow, B., Kerr, J., 2008. Forestry-based carbon sequestration projects in Africa: potential benefits and challenges. Nat. Resour. Forum 116–130.
Lang, C., Byakola, T., 2006. A Funny Place to Store Carbon": UWA-FACE Foundation's Tree Planting Project in Mount Elgon National Park. World Rainforest Movement, Uganda. Montevideo, Uruguay.
Leach, M., Scoones, I., 2015. Political ecologies of carbon in Africa. In: Leach, M., Scoones, I. (Eds.), Carbon Conflicts and Forest Landscapes in Africa. Routledge, Oxford.
Bushenyi District Local Government, 2009. Bushenyi District Five Year Development Plan: 2009-2014. Bushenyi District Local Government.
Lyons, K., Westoby, P., 2014. Carbon colonialism and the new land grab: plantation forestry in Uganda and its livelihood impacts. J. Rural Stud. 36, 13–21.
Mafabi, D., 2010. Uganda: Bududa Landslide Victims Oppose Relocation to Kiryandongo District. Daily Monitor (23 August 2010).
Mahanty, S., Suich, H., Tacconi, L., 2013. Access and benefits in payments for environmental services and implications for REDD++: lessons from seven PES schemes. Land Use Policy 31 (0), 38–47.
Mamdani, M., 1976. Politics and Class Formation in Uganda. Heinemann, London.
Marino, E., Ribot, J., 2012. Special issue introduction: adding insult to injury: climate change and the inequities of climate intervention. Global Environ. Change 22 (2), 323–328.
Martin, A., Akol, A., Phillips, J., 2013. Just conservation? On the fairness of sharing benefits. In: Sikor, T. (Ed.), The Justices and Injustices of Ecosystems Services. Earthscan, London.
Martin, A., Coolsaet, B., Corbera, E., Dawson, N.M., Fraser, J.A., Lehmann, I., Rodriguez, I., 2016. Justice and conservation: the need to incorporate recognition. Biol. Conserv. 197, 254–261.
Martin, A., Gross-Camp, N., Kebede, B., McGuire, S., Munyarukaza, J., 2014. Whose environmental justice? Exploring local and global perspectives in a payments for ecosystem services scheme in Rwanda. Geoforum 54 (0), 167–177.
Martinez-Alier, J., 2002. The Environmentalism of the Poor: A Report for UNRISD for the WSSD. UNRISD.
Mathur, V.N., Afionis, S., Paavola, J., Dougill, A.J., Stringer, L.C., 2014. Experiences of host communities with carbon market projects: towards multi-level climate justice. Climate Policy 14 (1), 42–62.
Nakakaawa, C., Moll, R., Vedeld, P., Sjaastad, E., Cavanagh, J., 2015. Collaborative resource management and rural livelihoods around protected areas: A case study of Mount Elgon National Park, Uganda. For. Policy Econ. 57, 1–11.
Nel, A., Hill, D., 2013. Constructing walls of carbon – the complexities of community, carbon sequestration and protected areas in Uganda. J. Contemp. Afr. Stud. 31 (3), 421–440.
Norgrove, L., 2002. Parking Resistance and Resisting the Park: The Theory and Practice of National Park Management, A Case Study of Mount Elgon National Park, Uganda. PhD Thesis. University of Manchester.
Norgrove, L., Hulme, D., 2006. Confronting conservation at Mount Elgon, Uganda. Dev. Change 37 (5), 1093–1116.
Okereke, C., Dooley, K., 2010. Principles of justice in proposals and policy approaches to avoided deforestation: towards a post-Kyoto climate agreement. Global Environ. Change 20 (1), 82–95.
Okwaare, S., Hargreaves, S., 2009. Mountains of trouble: the Benet community of Uganda. ActionAid Critical Stories of Change Series. ActionAid, Kampala.
Owen, M., 2003. Carbon Trading Pilot Project: A Socio-Economic Assessment for CARE Uganda. CARE Uganda.
Paasgard, M., Chea, L., 2013. Double inequity? The social dimensions of deforestation and forest protection in local communities in northern Cambodia. Austrian J. South East Asian Stud. 6 (2), 330–355.
Peskett, L., Schreckenberg, K., Brown, J., 2011. Institutional approaches for carbon financing in the forest sector: learning lessons for REDD++ from forest carbon projects in Uganda. Environ.Sci. Policy 14 (2), 216–229.
Petursson, J.G., Vedeld, P., Kaboggoza, J., 2011. Transboundary biodiversity management: institutions, local stakeholders, and protected areas: a case study from Mt. Elgon, Uganda and Kenya. Soc. Nat. Resour. 24 (12), 1304–1321.
Vivo, Plan, 2008. Plan Vivo Standards 2008 Edinburgh. Plan Vivo.
Pogge, T., 1998. A global resource dividend. In: Crocker, D., Linden, T. (Eds.), Ethics of Consumption: The Good Life, Justice and Global Stewardship. Lanham, MD, Rowan and Littlefield.
Reynolds, T.W., 2012. Institutional determinants of success among forestry-based carbon sequestration projects in sub-Saharan Africa. World Dev. 40 (3), 542–554.
Schlosberg, D., 2004. Reconceiving environmental justice: global movements and political theories. Environ. Politics 13 (3), 517–540.
Schlosberg, D., 2007. Defining Environmental Justice – Theories, Movements, and Nature. Oxford University Press, Oxford.
Schreckenberg, K., Mwayafu, D., Nyamutale, R., 2013. Finding Equity in Carbon Sequestration: A Case Study of the Trees for Global Benefits Project, Uganda. Uganda Coalition for Sustainable Development, Kampala.
Schroeder, R., Martin, K., Wilson, B., 2008. Third world environmental justice. Soc. Nat. Resour. 21, 547–555.
Scott, P., 1998. From Conflict to Collaboration: People and Forests at Mount Elgon, Uganda. Gland. IUCN, Switzerland and Cambridge UK.
SGS Agrocontrol, 2001. Uganda wildlife authority-face foundation natural high forest rehabilitation project, Mt Elgon National Park. Uganda: GHG Project Validation and Verification Main Assessment Report, 2017 Assessment Report. Société Générale de Surveillance (SGS) Agrocontrol, Spijkenisse, Netherlands.
Sikor, T. (Ed.), 2013. The Justices and Injustices of Ecosystem Services. Earthscan, London.
Sikor, T., Martin, A., Fisher, J., He, J., 2014. Toward an empirical analysis of justice in ecosystem governance. Conserv. Lett. 7 (6), 524–532.
Smith, K., 2007. The Carbon Neutral Myth. Retrieved 12 December, 2007, from. www.carbontradewatch.org.
Solgaard, A., Rucevska, I., Neumann, C., Cavaliere, C., Lutz, S., Fernagut, M., Julseth, M., 2012. Vital Graphics on Payment for Ecosystem Services: Realising Nature's Value. GRID-Arendal, Norway.
TEEB, 2009. The Economics of Ecosystems and Biodiversity for National and International Policy Makers. TEEB.
Tienhaara, K., 2012. The potential perils of forest carbon contracts for developing countries: cases from Africa. J. Peasant Stud. 39 (2), 551–572.
Turyhabwe, N., Banana, A., 2008. An overview of history and development of forest policy and legislation in Uganda. Int. For. Rev. 10 (4), 641–656.
UBOS, 2014. National population and housing census 2014: provisional results. Uganda Bureau Statistics, Kampala, Uganda.
Uganda Protectorate, 1961. Report of the Commissioner Appointed to Inquire into the Operation of the Land Tenure Scheme in Ankole. The Uganda Protectorate, Entebbe, Uganda.
UWA, 2000. Revenue Sharing Policy and Guidelines. Uganda Wildlife Authority. UWA, Kampala, Uganda.
UWA, 2010. UWA-FACE Progressive Forest Restoration Report, January 1994 – October 2010. UWA, Kampala.
Vangen, C., 2009. Evicted in the Name of Nature: The Process of Eviction and Its Impact on Local Rural Livelihoods in Mount Elgon, Uganda. University of Life Sciences, MSc, Norwegian.
Vedeld, P., Cavanagh, C.J., Petursson, J.G., Nakakaawa, C., Moll, R., Sjaastad, E., 2016. The political economy of conservation at Mount Elgon, Uganda: between local deprivation, regional sustainability, and global public goods. Conserv. Soc. 14 (3), 183–194.
Walker, G., 2012. Environmental Justice: Concepts, Evidence and Politics. London. .
Wanjiku, J., Place, F., 2008. Analysis of Tree Planting Behaviour in Kenya. ICRAF, Nairobi.
Webster, G., Osmaston, H., 2003. A History of the Uganda Forest Department. 1951-1965. Commonwealth Secretariat, London.
White, S., 2002. People-park conflicts in Mt. Elgon: the role of collaborative management in conflict resolution. Paper Presented to the National Conference on Mountains and Highlands in Uganda. 3rd-4th October 2002. Makerere University, Kampala.
Winnebah, T., Leach, M., 2015. Old reserve, new carbon interests the case of the western area peninsula forest (WAPFoR), Sierra Leone. In: Leach, M., Scoones, I. (Eds.), Carbon Conflicts and Forest Landscapes in Africa. Routledge, Oxford.
Wunder, S., 2007. The efficiency of payments for environmental services in tropical conservation. Conserv. Biol. 21 (1), 48–58.
Wunder, S., 2008. Payments for environmental services and the poor: concepts and preliminary evidence. Environ. Dev. Econ. 13 (03), 279–297.
Zembla, 2013. The CO2 Alibi. Retrieved 12.05, 2015, from. http://www.npo.nl/the-co2-alibi-english-version/15-05-2013/WO_VARA_007708.