

Transformation is what you expect, models are what you get: REDD+ and models in conservation and development

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Abstract

Models increasingly pervade conservation and development practice – model policies, model countries, model regions, model states, model projects, model villages, model communities and so on. These are idealized, bounded, miniature entities that seek to demonstrate the efficacy of a more substantive policy, scheme or intervention. Although political ecologists and critical scholars have analyzed models in specific interventions, there has been relatively little reflection on the common logics central to models more generally. Drawing on critical conservation and development literature and in-depth case studies of REDD+ in Tanzania and Nigeria, we identify and elaborate three core model logics: 1) problematization of the field of intervention and valorization of microcosms within it; 2) isolation and bounding which seek to order complexity and etch microcosms in space and time; 3) enrolment of actors. Although ambitious and transformational in its claims and aspirations, REDD+ has thus far manifested as an extensive network of models across socio-political scales. We argue that idealized REDD+ models enable proponents to demonstrate and 'sell' REDD+ as a 'successful' intervention, thereby allowing the scheme to persist in policy circles in spite of its failures on the ground and its lack of viability at scale. We therefore argue that models often become an end in themselves, paradoxically failing to herald the transformational intervention they were originally meant to epitomize.

Keywords: Conservation, development, models, Nigeria, Tanzania, REDD+

Résumé

Les modèles imprègnent de plus en plus les pratiques de conservation et de développement - politiques modèles, pays modèles, régions modèles, états modèles, projets modèles, villages modèles, communautés modèles, etc. Il s'agit d'entités miniatures idéalisées et délimitées qui cherchent à démontrer l'efficacité d'une politique, d'un schéma ou d'une intervention plus substantielle. Bien que les écologistes politiques et les spécialistes des sciences sociales critiques aient analysé les modèles dans des interventions spécifiques, il y a eu relativement peu de réflexion sur les logiques communes au cœur des modèles en général. En nous appuyant sur la littérature critique en matière de conservation et de développement et sur des études de cas approfondies de REDD + en Tanzanie et au Nigéria, nous identifions et élaborons trois logiques modèles de base: 1) problématisation du domaine d'intervention et valorisation des microcosmes en son sein; 2) l'isolement et la délimitation, qui

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cherchent à ordonner la complexité et à graver des microcosmes dans l'espace et le temps; 3) inscription des acteurs. Bien qu'ambitieuse et transformatrice dans ses revendications et ses aspirations, la REDD + s'est jusqu'à présent manifestée comme un vaste réseau de modèles à l'échelle socio-politique. Nous soutenons que les modèles REDD + idéalisés permettent aux promoteurs de démontrer et de «vendre» REDD + comme une intervention «réussie», permettant ainsi au système de persister dans les cercles politiques malgré ses échecs sur le terrain et son manque de viabilité à grande échelle. Nous soutenons donc que les modèles deviennent souvent une fin en soi, échouant paradoxalement à annoncer l'intervention transformationnelle qu'ils étaient censés incarner à l'origine.

Mots-clés: Conservation, développement, modèles, Nigeria, Tanzanie, REDD +

Resumen

Los modelos impregnán cada vez más las prácticas de conservación y desarrollo: políticas modelo, países modelo, regiones modelo, estados modelo, proyectos modelo, aldeas modelo, comunidades modelo, etc. Estas son entidades idealizadas, delimitadas y en miniatura que buscan demostrar la eficacia de una política, esquema o intervención más sustantiva. Desde la Ecología Política y otros con un enfoque teórico crítico se ha analizado modelos en intervenciones específicas. Sin embargo, ha habido relativamente poca reflexión sobre las lógicas comunes centrales para los modelos en general. Basándonos en literatura crítica sobre conservación y desarrollo y en estudios de caso en profundidad de REDD+ en Tanzania y Nigeria, identificamos y elaboramos tres lógicas modelo centrales: 1) problematización del campo de intervención y valorización de microcosmos dentro del modelo; 2) aislamiento y delimitación que buscan ordenar la complejidad y grabar microcosmos en el espacio y el tiempo; 3) inscripción de actores. A pesar de ser ambicioso y transformador en sus reclamos y aspiraciones, hasta ahora REDD+ se ha manifestado como una red extensa de modelos atravesando escalas sociopolíticas. Argumentamos que los modelos REDD+ idealizados permiten a sus proponentes demostrar y 'vender' REDD+ como una intervención 'exitosa'. Este permite que el esquema persista en los círculos políticos a pesar de sus fallas en la práctica y su falta de viabilidad a gran escala. Por lo tanto, sostengamos que a menudo los modelos se convierten en un fin en sí mismos. Por ende, paradójicamente no anuncian la intervención transformadora que originalmente se intentaba que encarnen.

Palabras clave: conservación, desarrollo, modelos, Nigeria, Tanzania, REDD +

1. Introduction

While they often make ambitious transformational claims, many interventions in conservation and development proceed and persist only as isolated, miniature exemplars of the intended intervention.² As Wilson (2014) and Scott (1998) show, this feature of contemporary interventions, which we call *model making*, has a long history. What is remarkable, however, is how pervasive this process has become, increasingly assuming the substantive mode for intervening in social life. Political ecologists and critical scholars across geography, anthropology and sociology have analyzed the production of models at different scales and in a range of contexts – from model villages (Mitchell 2002; Wilson 2014) to model countries (Mitchell 2002) to model approaches (Blaikie 2006; Büscher 2013; Chapin 1988). Others have analyzed entities that reflect some attributes of models, including 'enclaves' of modernity (Ferguson 2006; Nyíri 2012), 'the project system' (Li 2016) and 'pilots' (Massarella *et al.* 2018). Despite the rich array of studies that have considered the workings of models as abstractive representations and as social-material entities, less attention has been devoted to distilling the common dynamics of the pervasive process of model-making. There is a need for a more explicit focus on the logics that underpin the constitution of models in order to better understand why models are increasingly pervasive in contemporary conservation and development schemes. This, we argue, is particularly needed at a

² By conservation and development, we mean the sphere of policy and practice constituted by both the broad domain that Brockington *et al.* (2008) described as the "mainstream conservation" movement, and the international development sector which has been the target of critical engagement by political ecologists and other critical scholars. Indeed, our intention in holding these two sectors side by side is to reflect their systemic fusion since the rise of the sustainable development agenda in the 1970s and the subsequent greening of development since the 1980s. But we also note the rather material and specific ways in which many conservation projects and development projects are (often uneasily) intertwined – from early schemes like the integrated conservation and development programs (ICDPs) to contemporary schemes like REDD+.

time when escalating socio-ecological crises belie claims of efficacy in contemporary conservation and development interventions.

In this article we seek to contribute new insights to our understanding of model entities, which exist as a central, if paradoxical, strategy through which contemporary interventions seek to reimagine and reorder social life. Our contribution comes from detailed exploration of critical conservation and development literature and empirical case studies of REDD+. REDD+ is a global environment-cum-development scheme, which has claimed significant policy success at various levels and has inspired a slew of new forest-climate initiatives from the so-called Natural Climate Solutions to land-based Negative Emissions Technologies (Asiyanbi and Lund 2020; Svarstad and Benjaminsen 2017; UNFCCC 2013; Viard-Cretat 2016).³ Our analysis focuses on two specific case studies of model-making in Nigeria and Tanzania. Through this analysis we conceptualize model-making as a scalar process that typically proceeds through at least three overlapping logics: 1) countervailing processes of problematization of the field of intervention and valorization of microcosms within it; 2) processes of isolation and bounding which seek to order complexity; 3) the enrolment of disparate actors. These logics have underpinned the production of the REDD+ 'model state' in Nigeria, and REDD+ 'model projects' and 'model country' in Tanzania. These idealized REDD+ models enable proponents to pre-assure and 'sell' REDD+ as a 'successful' intervention. Thereby legitimizing continued pursuit of the scheme, regardless of the messiness of the wider social context of the models and their failure to deliver results at scale. Indeed, models rely on isolation from the wider social context for their claims to efficacy and 'success.' As such, we argue that a core paradox of models is that they often become an end in themselves, failing to herald the transformational intervention they were originally meant to epitomize.

The rest of this article is organized as follows: first we briefly review the relevant literature on models before presenting the REDD+ case and the methodological considerations for the empirical case studies. We then discuss how REDD+ manifests in reality as a series of inter-related models across socio-political scales. Following this, we unpack the three core logics common to models across scales, showing how these logics have been central to the constitution of the model REDD+ state and the model REDD+ project in Nigeria and Tanzania respectively. We then reflect on the effects of models before drawing conclusions from the wider implications of our arguments.

2. Models, miniaturization and selling success

Model (noun)

- 1) A representation of a person or thing or of a proposed structure, typically on a smaller scale than the original.
- 2) A thing used as an example to follow or imitate.
- 3) A simplified description... of a system or process, to assist calculations and predictions.
- 4) A particular design or version of a product. (Oxford English Dictionary)

Models exist both as abstract representations of ideas which proponents of improvement schemes seek to translate into reality (e.g. a model policy, a model method, a model paradigm), and the assembled socio-cultural entities through which these representations are made real in place and time (e.g. a model program, a model country, a model region, a model village). In other words, model-making represents a specific "mode of seeing and a way of organizing the world" (Wilson 2014: 108). Taken together, the meanings of the noun 'model'

³ In spite of criticisms of the scheme, proponents of REDD+ continue to lay claim to success at such events as the 2018 Oslo REDD Exchange where Norway, the foremost REDD+ donor country claimed to "celebrate results" of the first decade of REDD+ in June 2018. Available at: <https://norad.no/en/front/events/oslo-tropical-forest-forum-2018/> [Accessed 18/07/2019]. Similarly, the World Bank's FCPF former director Ellysa Baroudy celebrated "encouraging progress and results" in her reflection over REDD+'s first decade. Available at: <https://blogs.worldbank.org/climatechange/why-we-should-be-more-optimistic-about-forests-and-climate-change> [Accessed 18/07/2019]. These are only instances of wider, if contested, efforts by multilateral institutions, corporations and conservation NGOs to justify the persistence of REDD+ and its new iterations (see also Asiyanbi and Lund 2020).

specified by the Oxford English Dictionary above get us close to the sense of models in conservation and development: a smaller representation or a particular version of the substantive phenomenon or vision; an example to follow or imitate; and a simplified form of the substantive phenomenon or vision.

Critical explorations of models in literature tend to emphasize to varying degrees what could be considered two sides of a coin or two ends of a continuum. That is, models as abstract representations and models as entities through which these representations become reality. For instance, the former is emphasized in Mosse's (2005) elaboration of how idealized success narratives are elicited from development projects in India, Büscher's (2013) analysis of much-touted transnational conservation areas in Southern Africa (TNCs), and Blaikie's critical evaluation of the persistently favored community-based natural resource management (2006). On the other hand, we see a greater emphasis on models as entities in Wilson's (2014) analysis of model village schemes in sub-Saharan Africa and Mexico, Li's (2016) work on the project system in Indonesia, Mitchell's (2002) documentation of the model village and model country in Egypt, and Nyiri's (2012) enclaves of improvement in the Lao-China borderlands. West's (2006) analysis of the conservation dynamics in Papua New Guinea emphasizes models as representations and socio-cultural entities. Our understanding of models in this article straddles both these forms of model, while emphasizing models as entities. We also take as our entry point the Oxford Dictionary definition of models as "a ... representation of a person or thing or of a proposed structure, typically on a smaller scale than the original."

Although models overlap with a number of related social categories and entities, there are important differences between models, and other entities including pilots, projects and frontiers. Pilots are also purposive, socially assembled miniatures of larger interventions. They are framed as trials or experiments that test mechanisms and deliver learning, in pursuit of more substantive interventions (e.g. Massarella *et al.* 2018). But when pilots stop being experimental and tentative, instead subtly becoming more definitive and substantive, they act more as models than pilots. Models are more definite; they seek to demonstrate the possibility of success, not only by defining it "in ways that will allow it to be found" (Blaikie 2006: 1954) but also by narrowing the range of possible evaluations and courses of action. While pilots often come with a perceived 'right to fail', models are designed to pre-assure success. In spite of the similarities between models and what Li (2016) refers to as "project systems", there are some key differences. First, not all projects are models. Models are more like what Mosse (2005: 163) calls "exemplar projects" or special kinds of projects. While projects presume a grounded, local scale, models can be designated across multiple scales insofar as a miniature is designated to ostensibly herald a larger, more substantive intervention. For instance, a global intervention could designate a few model countries. Also, models can be differentiated from frontiers, even if they are often literally the spearhead of frontiers. Frontiers are "mired in ambiguities and uncertainties" (Büscher 2013: 9), whereas models are made to appear as the carefully assembled and simplified zone within the frontier, wherein the possibility of success is almost guaranteed.

However, one thing that most of these social entities – pilots, projects, frontiers, enclaves, demonstration sites, case studies and trials – have in common is their existence as miniature, tentative, and technically-bound exemplars of broader intervention: a core characteristic of models more broadly. This 'miniaturization' can be identified as a growing trend in conservation and development, one that "appeals to technocrats attempting to realize an idealized social order, because they offer the possibility of generating this order at a scale at which the variables are fewer and more manageable" (Wilson 2014: 120, drawing on Scott 1998). This is part of what Li (2016: 79) describes as a recent, problematic shift towards the project system, where wholesale planning and policy actions are being replaced by "a time bound intervention with a fixed goal and budget, framed within a technical matrix which renders some problems amenable to intervention, while leaving others out of account." Projectization, that is, rendering the world actionable through the project system, is not only favored by technocrats, it is also non-threatening for governments, as Li (2016) observed. She proposed that 'problematization' and 'rendering technical' are the two key practices central to the projectization of development and conservation interventions – a process that is always imbued with the urge to scale up. However, one of the core challenges to scaling up is the fact that such specially curated project entities are rarely representative of the complex contexts that they are designed to represent and transform (Bailey *et al.* 2019).

These miniaturization and projectization trends have been associated with two other notable trends in conservation and development: the rise of multiple-win, global-scale conservation fads (Redford *et al.* 2013)

and the associated need for projects to 'sell success' (Büscher 2014; Mosse 2005). Redford *et al.* (2013) defined conservation fads as "approaches that are embraced enthusiastically and then abandoned" (p. 437). Such fads are typically launched with high levels of funding, resources and expectations (Massarella *et al.* 2018) and, as in the case of REDD+, marketed as having the ability to deliver multiple wins for the climate, biodiversity and human development (Lund *et al.* 2017). In this context, 'success projects' often emerge (Svarstad and Benjaminsen 2017). Such projects are pre-designed and followed through in ways that allow proponents to claim success on their own terms, thus allowing the continuous flow of resources into the wider mechanism (Lund *et al.* 2017). This aligns with broader arguments that development policies become a means to legitimize – rather than direct – actual implementation on the ground from where carefully curated exemplar projects are strategically positioned to attract further streams of funding and technical support (Li 2016; Mosse 2005). Such exemplars and the discourses that co-constitute them are thus quite valuable for proponents of conservation and development interventions. That proponents are able to 'sell' success on the basis of exemplars means that small-scale solutions in which success can be easily pre-assured and produced are frequently chosen over complex interventions that (potentially) tackle more complex issues. These trends have been highlighted as being particularly prevalent in the case of REDD+, where reporting of early phase projects as successful has become an important driver of the continuation of the policy on a global scale (Lund *et al.* 2017; Svarstad and Benjaminsen 2017).

3. Methodology

A case study of REDD+

REDD+ is an ambitious international climate change mitigation mechanism that aims to incentivize countries of the global South through the transfer of public and private finance in order for them to reduce deforestation or increase their forest carbon stock against a baseline. First instigated within the UNFCCC in 2005, the scheme is often described as a quintessential multi-win mechanism tasked with delivering the action needed to "transform rural landscapes, conserve forests, make a difference in climate change trajectories and, most importantly, to bring prosperity to the rural poor" (FCPF 2015: 7). Via activities orchestrated by the UNFCCC, the World Bank, the African Development Bank, the UN and other multilateral organizations and international conservation NGOs, the multi-phased scheme exists in some form in over 65 countries. REDD+ has not only received an exceptional level of policy support, it has also mobilized an estimated US\$10 billion in international public finance (Angelsen *et al.* 2017) and has materialized through over 2,000 'REDD+ arrangements' including agreements, demonstrations, and pilot projects implemented globally (Food and Agriculture Organization 2019). REDD+ has thus been portrayed as a model policy response to climate change in many respects, reflecting the increasingly decentralized and multi-actor approach to global climate governance (Savaresi 2016) and the optimism that environmental crises (including climate change) can ostensibly be addressed through the application of neoliberal principles (Fletcher *et al.* 2016; McAfee 2015).

Yet 14 years on from its inception, REDD+ has unfolded in a manner that belies its transformational claims and ambitions of "transforming rural landscapes" and making "a difference in climate change trajectories" (FCPF 2015: 7). In reality, REDD+ still largely exists as a web of isolated exemplars; dispersed across scales in isolated regions, states and communities, and in pilot and demonstration projects. It is these exemplars that we call REDD+ models. We argue that this model-making in REDD+ is central to understanding both the scheme's lack of effectiveness and the continued support it continues to enjoy in spite of its failure to deliver on its transformational claims. Both supporters and critics of the scheme now agree that the actual performance of REDD+ in locales has been generally poor, perhaps even counterproductive (Angelsen *et al.* 2017; Fletcher *et al.* 2016; Milne and Mahanty 2018). This paradox makes REDD+ an ideal case study for the exploration of models and model logics; one that enables us to explore models in conservation and development as they intertwine with local realities in place and time.

Methods

Our reflections on model entities come from empirical investigation of REDD+ schemes in Nigeria and Tanzania, and wider reflection on the global REDD+ architecture and conservation and development interventions more generally. We use a case study approach in the qualitative research tradition. A case study approach focuses on a chosen bounded unit in relation to its environment to allow for intensity that affords more detail, richness, completeness and variance (Creswell 1998; Flyvbjerg 2011). We draw on extensive periods of ethnographic field research on REDD+ in Nigeria between 2013 and 2014 and in Tanzania between 2015 and 2016.⁴ The use of these different cases allows exploration of model-making at different socio-economic scales: the focus of the Nigerian case study is on a model state (Cross River) and associated models at the local scale, and in Tanzania the focus is on national processes and model projects at the village scale (in Kilosa district and Rungwe district). Both researchers took an interpretive approach to research, using ethnographic methods to explore the interplay between the REDD+ mechanism and its implementation, and the lived experiences of those involved (Schwandt 1994).

The first author analyzed key REDD+ program documents for Nigeria, including the REDD+ baseline study – Preliminary Assessment Report (also Oyebo, Bisong and Morakinyo 2010), the early proposal to the UNREDD platform – National Program Document (also NPD 2011) and the latter proposal to the FCPF – REDD Readiness Program Proposal (R-PP 2013). Between December 2013 and August 2014, archival forestry files from the Nigerian National Archives in Calabar, Enugu and Ibadan were analyzed, in tracing continuities and discontinuities between REDD+ and historical conservation in Cross River state. Recent forestry documents (including annual reports, memos, petitions and special reports) at the Cross River State Forestry Commission Library in Calabar were also analyzed. Eight REDD+ workshops (including those targeted at state bureaucrats, those targeted at local communities and those organized by civil society organizations) were observed. Fifty-eight in-depth interviews (including 21 among state officials, 17 among communities, 9 among NGOs) were conducted along with extensive informal discussions using a purposive sample, followed by snowballing approach in order to reach a cross-section of REDD+ stakeholders including state bureaucrats, NGOs and forest communities. The various sources were analyzed through a coding process that used both descriptive and analytical codes. If the analytical codes represent the emergent foci for analysis specified above, the descriptive codes would represent themes within each analytical code.

The second author's research in Tanzania was undertaken primarily from September 2015 to June 2016 – after the REDD+ readiness phase in Tanzania was completed – and took a cross-scale approach, investigating the experience of actors from villagers involved in the readiness-phase pilot projects to international conservation and development professionals. Two of the nine pilot projects implemented were identified for in-depth analysis within the wider study, taking a "two-tail" approach to design and choosing cases that most contrasted with one another (Yin 2014: 62). The first project studied was implemented in Rungwe District of Mbeya Region, and the second in the Kilosa District of Morogoro Region. Around two months were spent in each project site and involved research with NGOs, government officials at regional, district, ward and village level, as well two in-depth village case studies in each site. Narrative interviews were conducted with 150 participants (including 35 international actors, such as consultants, donors, NGOs and members of the National REDD+ Task Force, 15 regional/district-level actors, and a wide range of villagers from two villages in each project site). As with the first author, purposive and snowball sampling strategies were used. Document analysis, observations of meetings (including the official presentation of the end of project reports from the Norwegian Embassy, who funded the project, and village meetings) and informal group and individual discussions were used to complete the ethnography and triangulate findings. All interviews were fully transcribed and thematic narrative analysis used to identify themes (Riessman 2008). More broadly, we approached the data analysis iteratively, using a mix of thematic data analysis, dialogic interactions with our respondents, scholarly literature and our own subjectivities and self-reflection. In line with our interpretivist stance, we note the irreducible social nature of conservation and development practice, while being cognizant of our roles as researchers in co-constructing the meanings that emerged from our studies.

4. REDD+ and the model logics

⁴ REDD+ is a three-phased scheme: with readiness, investment and results phases. We have focused on the readiness phase in Nigeria and Tanzania.

In our attempt to understand model-making in REDD+, we have identified what can be referred to as a cascading scale of models. This scalar sequence of models reflects through the levels of REDD+ policymaking and implementation from the global through the national, regional and sub-national, to the local level. REDD+ can be seen as a model policy or mechanism that represents the model paradigm of neoliberal conservation through the "world's largest experiment in Payments for Ecosystem Services" (Corbera 2012: 612). Within this model policy, certain countries such as Brazil have been cultivated as the global models through the discourse and practice of a wide range of REDD+ actors from the multilateral institutions (such as the UN, World Bank), donor countries, REDD+ consultants, international NGOs and academics. Similarly, Brazil, the DRC, and Indonesia are projected as regional models for Latin America, Africa and South East Asia respectively. In fact, despite being touted as a global solution, only five countries (Brazil, Indonesia, Mexico, Peru and DRC) account for about half of REDD+ funding (Forest Trends 2014). And only ten countries (Indonesia, Brazil, Tanzania, Nepal, Cameroon, Mexico, Vietnam, Peru, India and Malaysia) account for about 60% of academic publications on REDD+.⁵ Within REDD+ countries, rather than pursue a full-scale national REDD+ intervention critical to forestall national-level leakage, certain regions and sub-national jurisdictions have been cultivated as exemplars. Within these sub-national models, models are further cultivated at lower levels of intervention, so that the model process cascades across scales. We depict this cascading scale of models in Figure 1 below, where model-making travels from the level of REDD+ as a model conservation and development mechanism to the level of, for instance, the model village. In what follows, we identify three core logics that underpin this multi-scale process of model-making, showing how they have played out in the making of the model REDD+ state and model REDD+ projects in Nigerian and Tanzania respectively.

Model logic 1: problematization and valorization

Models often emerge at the problem-solution interface, mediating the tension between the problematization of a field of social experience and the optimism that such a field is indeed capable of improvement. Since problems and solutions are never fully self-evident, what matters here are the processes by which issues get problematized and solutions get valorized (Li 2016; Mosse 2005; West 2006). At the most fundamental level, these processes are discursive and in conservation and development new ideas, entities and interventions often come into being through the problematization of other entities, processes and fields of experience (Ferguson 1994; Li 2007b; Mosse 2005). Problematic allows new approaches to be rationalized, new rounds of project funding to be justified, and new coalitions of experts to assume and assert authority (*ibid*). Yet problematization alone cannot create the conditions needed for new interventions to emerge. There also needs to be optimism that the problematized field is capable of improvement and transformation. This optimism sits at the heart of the expert's "will to improve" in development and conservation (Li 2007b). While problematization creates the need for intervention, valorization seeks to demonstrate that the deficient system retains sufficient solidity necessary for receiving an intervention and for achieving improvement. Pursued simultaneously, problematization and valorization reflect a contradiction.

Models often emerge as an attempt to resolve this contradiction. While valorization might sometimes proceed at the same scale with problematization, it is more common for the former to be pursued at a relatively smaller scale; that is, a smaller section of the problematized field is valorized as a token of the possibility of improvement. In the development of a new intervention, valorization entails producing microcosms that supposedly embody the goals of improvement schemes, thereby feeding into proponents' optimistic and idealistic aspirations (Dressler 2017; Li 2007b). Moreover, this process thrives on the strategic social production of attributes and realities, which proponents of improvement would hold as pre-existing in the valorized microcosm (Wilson 2014: 109). Indeed, as Mitchell (2002: 233) notes, proponents of models like to imagine their object as one "that exists apart from the discourse that describes it." Yet this discursive elevation is partly productive of the model entities it seeks to make visible (Büscher 2013; Turnhout 2018). These representations

⁵ This is based on an analysis of Scopus database using search terms 'REDD+' plus 'Country name' in Title, Abstract, and Keywords. A simple count was then carried out for all REDD+ countries listed on the UNREDD platform. Analysis was conducted in October 2018.

do generate powerful effects, becoming entwined, even if only partially, with efforts to re-order and restructure certain domains while variously shaping subjectivities. Redford *et al.* (2013) recognize this dialectic of problematization and valorization in the production of conservation fads. However, a focus on models can reveal the more complex dynamics of model entities by drilling down beneath the cycle of excitement and disillusion that mark the "skipping from fad to fad" in conservation and development (Redford *et al.* 2013: 438; Viard-Cretat 2016).

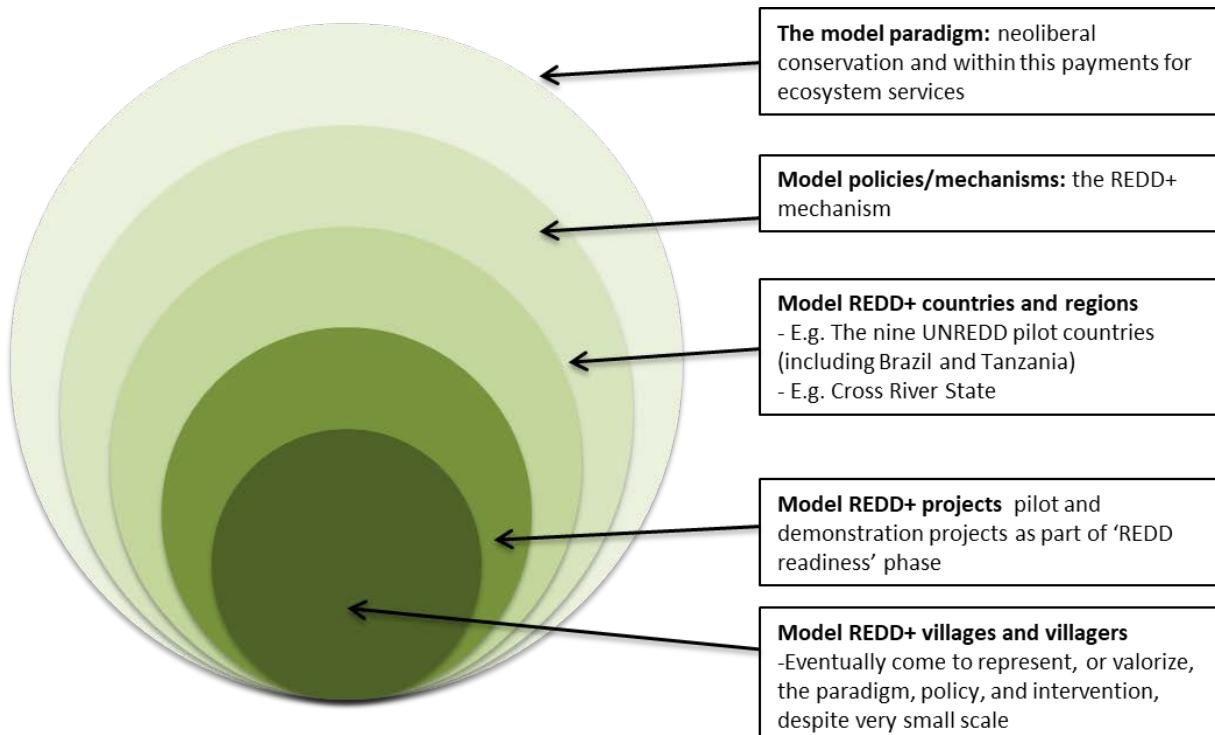


Figure 1: An impression of the cascading scale of models.

In REDD+, the problematization of global deforestation was perhaps the single most important basis for proposing REDD+ at the Montreal climate conference in 2005 (Santilli *et al.* 2005). In the original proposal for 'compensated reduction', the earliest iteration of REDD+, Santilli and colleagues (2005) painstakingly demonstrated the ramifications and consequences of the global tropical deforestation problem, while at the same time demonstrating the potential of their newly proposed scheme, framing it as a model policy approach. Also demonstrating the promise of REDD+ as a model approach, a regional UNREDD Officer decried the failure of historical forest conservation and governance efforts:

REDD+ is transformational...the way the policies, the measures, the fiscality, the agricultural projects, the energy policies, the behavior of the population go, the tendency is that all these factors bring deforestation. We have about 50 years of experience in forest protection programmes and campaigns. What is the outcome? Failure! ...What is needed is to change the way development is done.⁶

⁶ Interview, UNREDD Senior Adviser, Calabar Nigeria, 2 April 2014.

In Nigeria, a similar logic helped to produce Cross River State (one of Nigeria's 37 states) as the model REDD+ state for the entire country. Various REDD+ program documents sought to set up the problematization-valorization dialectic by drawing a sharp contrast between the entire country and Cross River with respect to landscape, institutions and forest governance more broadly. The very first page of the Preliminary Assessment Report – a bulky baseline report for REDD+ prepared by national and foreign consultants – problematized deforestation in Nigeria:

Nigeria's rate of deforestation is one of the highest in the world and less than 10% of Nigeria's original forests cover remains. More than 50% of what is left as Tropical High Forest is found in Cross River State. (Oyebo *et al.* 2010: 1; see also NPD 2011; R-PP 2013)

Adding to this picture is an equally stark portrayal of the rate of forest loss, estimated as 2.2% in Cross River compared with 3.7% for Nigeria, again said to be one of the highest in the world (NPD 2011: 16-17). Often credited with hosting 'Nigeria's last rainforest', Cross River is set apart from the rest of the country in terms of both the extent of forest and rate of forest loss. Work of experts from the UNEP-WCMC also distinguishes Cross River in terms of a desirable combination of attributes considered co-benefits, that is where "high carbon density areas and areas of importance for biodiversity do coincide" (Ravilious *et al.* 2010: 7).

With respect to policy, institutions of forest management and conservation interventions, the national level and other states of the federation were projected as lacking, while Cross River State was portrayed as showing promise, boasting of:

...extensive engagement with forest communities on conservation and sustainable forest management over the last 20 years (with) several donor organizations and international NGOs ...[but] there has been little international NGO or donor support for forest projects elsewhere in Nigeria. (Oyebo *et al.* 2010: V-VI; NPD 2011: VI)

While those of other states of the federation were portrayed generally as "obsolete and need[ing] to be reviewed", the forestry law in Cross River had been reviewed and made REDD+-ready (Oyebo *et al.* 2010: iii). The document continues: whereas "the forest management sector in Nigeria suffers from severe and chronic under-investment" (Oyebo *et al.* 2010: IV), the NPD notes that "from 2009 to date that Cross River State [has] made available substantial financial resources to drive the state REDD+ agenda" (NPD 2011: 36). In the year 2011, for instance, Cross River committed US\$167,000 to promoting REDD+ activities, while over the 3-year period ending 2011, the state had spent about US\$500,000 on anti-deforestation activities (NPD 2011).

Similarly, during the early stages of its REDD+ 'readiness' phase, Tanzania was framed as reflecting the worldwide problem of forest destruction and as a potential REDD+ model. Early REDD+ reports, policy briefs and other documents frequently highlight the fact that although Tanzania still has a substantial amount of forest and woodland areas, it also has an "alarming 1.1% deforestation rate – one of the 10 highest rates of net national forest area loss in the world" (Kweka *et al.* 2014: 219). Thus, Tanzania was selected as one of the original nine pilot countries by UN-REDD, became the recipient of over US\$80 million of Norwegian REDD+ funding via Norway's International Climate Change and Forest Initiative (NICFI) (Lund *et al.* 2017) and was chosen as one of the six core case studies for the expansive CIFOR Global Comparative Study (Sunderlin *et al.* 2014). Much of the rationale for the selection of Tanzania as a model REDD+ country was based around its well-established and progressive participatory forest management (PFM) policies and programs (Kweka *et al.* 2014; URT 2010). Via Joint Forest Management (JFM) and Community-Based Forest Management (CBFM) programs, Tanzania was valorized as a country in which communities were already integrated into forest governance, providing "a value basis for rapid REDD readiness" (URT 2010: 1). As such, Tanzania was positioned as a model through which one of the central tenets of REDD+ could be demonstrated: a community-focused and 'pro-poor' approach to forest governance (UNDP 2009).

Model logic 2: isolating and bounding

The second core logic underpinning models is the double-order process of isolating and bounding the valorized entity. Bounding and isolating reflect attempts to bring order to the social complexity from which the model emerges by positioning the emerging model as a "freestanding entity rather than a particular position within a larger arrangement" of forces, relations and interactions (Mitchell 2002: 231). Boundaries get established through both discursive and material practices, which mark out the entity in a range of different ways including spatially (e.g. construction and enforcement of physical boundaries delineating the inside and outside of models, concentration of resources), temporally (e.g. historical framing, duration of the model project) and conceptually (e.g. in relation to imaginaries of change and difference). The emerging model entities thus get tentatively and partially separated from their fluid and dynamic politics, histories and ongoing complex social lives (Ferguson 1994; Mosse 2005; West 2006).

Separated and fixed in this way, the model entity becomes more amenable to technical action (Mitchell 2002; West 2006), having been partly excluded from broader political, social and economic analysis (Mosse 2005). Valorized entities are thus simplified and "rendered technical", as these multiple boundaries screen out complexity and create spaces "in which calculations can be applied" (Li 2007b: 2) and interventions implemented towards measurable results (Li 2016). To render technical in this way is to foreclose debates, alternatives and contestations (Büscher 2013). It is to espouse an anti-political strategy by avoiding engagement with alternatives, wider political issues and processes thereby avoiding the risk of upsetting the status quo (Büscher 2013; Ferguson 1994; Li 2007b). Ultimately, the valorized entity becomes, at least in the eyes of proponents of improvement, so "finite and sure that ...it looks like the object of an unproblematic definition" (Latour 2005: 33).

Although such processes of bounding and isolating can be identified in conservation and development interventions more broadly, they take on additional significance in the case of models, which are meant as exemplars for a wider intervention. As well as making model spaces more amenable to intervention, the processes of bounding, isolating and simplifying also enable them to better fulfil their important role of demonstrating success. This is linked to another sense in which models get isolated through the concentration of resources, expert labor and transnational presence; all of which help to materially mark the model entity apart from the non-model outside. An optimized microcosm of reality is thus constituted; one well positioned to create success narratives and secure buy-in for new mechanisms such as REDD+ (Büscher 2014; Svarstad and Benjaminsen 2017).

For instance, as part of the US\$80 million fund provided to Tanzania via NICFI, nine pilot projects were established within the country. In the letter of intent between the Tanzanian and Norwegian Governments, the pilot projects were framed as being "for the promotion of a national REDD process" through learning and REDD readiness activities (URT/RNE 2008). The process of establishing these projects began in 2009 and all projects had completed by the end of 2014. At this point the Royal Norwegian Embassy (RNE) in Tanzania commissioned extensive end of project reviews, which were designed to provide lessons for wider implementation of the REDD+ mechanism in the country (see NIRAS 2015). The pilot projects were designed and implemented by NGOs: some international such as the Wildlife Conservation Society (WCS) and the African Wildlife Foundation (AWF), and some national such as the Tanzania Forest Conservation Group (TFCG). The NGOs were chosen based on a range of criteria, including the quality of their proposals. The RNE also wanted the pilot projects to have a geographical spread that represented different types of ecological, cultural and governance characteristics. As such, the pilot projects were valorized as model representations of the broader complex contexts in which they exist. All of the NGOs involved in the pilot projects were well-established in Tanzania, with existing and "credible relationships on the ground."⁷ Most of the 160 villages involved in the projects (Blomley *et al.* 2016) were already familiar with the NGOs and boasted previous experience with conservation interventions. Kilosa was one of the exceptions to this rule, as the NGO managing the project (TFCG in alliance with MJUMITA: Tanzania Community Forest Network) decided to select villages based on consultation with the international consultants and advocates of green markets, Forest Trends. In all

⁷ Interview, international consultant, Tanzania, 22 February 2016.

cases, therefore, projects and villages were selected to some degree based on their ability to show results and provide model case studies for REDD+ implementation in Tanzania.

Once selected, the individual pilot projects were bounded and isolated in a number of different ways. For example, they were geographically bounded, with certain villages around certain forests being selected for participation. Once the area had been selected in Kilosa, the NGO went through a detailed consultation process, during which potential participant villages were taken through a process of free, prior, informed consent (FPIC), which aimed to involve as many villagers as possible. In the case of Rungwe, which was run by the Wildlife Conservation Society (WCS), villages were selected as a result of their proximity to the Mount Rungwe Nature Forest Reserve and participation was agreed with the village leaders. In both cases, therefore, the project boundaries mirrored the geographical boundaries of the forests and the borders of the villages. The projects were also bounded temporally, with a set amount of time (and funding) allocated to each project by the Norwegian Embassy, thus setting clear start and end dates for implementation. The 'success' of the projects was thus judged based on what happened within these boundaries and this success was discursively produced through documents such as the end of project reports and 'lessons learnt' documents commissioned by the Embassy (see NIRAS 2015). These documents conceptually isolated the model projects from their complex social, political and environmental contexts and the reports therefore did not reflect the full story of the projects. For example, in one of the villages in Kilosa a number of farmers were relocated from the newly gazetted village forest reserves. Some refused to leave, which resulted in a conflict between village leaders/committees and those still farming in the reserve. The conflict increased after the project was completed and evaluated, and villagers reflected on the fact that this left a divide in the village between those supportive of the reserves and those supporting the farmers.

The bounding and isolating of model villages in this way meant that a large amount of resources, activity and attention was concentrated in a few specific places. In Kilosa, new village offices were built, a wide range of different livelihood activities were implemented, education and training was provided, new village-level governance institutions were established, and trial carbon payments were distributed in an effort to establish REDD+ benefit-sharing best practice. As the funding was channeled through the NGOs, however, the existing district and ward-level institutions, which typically lead district-wide conservation efforts, remained largely on the periphery. As such, some observers of the process argued that the pilot projects did not reflect existing governance complexities and constraints. They were able to demonstrate an ostensibly 'well managed' forest, but "in a situation where all the resources you can think of are there."⁸ Once the projects ended, however, the ability of existing, under-resourced governance institutions to continue the initiatives was very limited. In short, the bounded and isolated models of REDD+ success did not reflect the complexities of the wider landscapes in which the forests and villages exist. One of the stated objectives of the REDD+ pilot projects in Tanzania was to use the pilots to demonstrate success and to "prepare holistically for a future REDD regime."⁹ However, although this future grand intervention was expected, the piloting process delivered only models. These models discursively ceased to 'exist' at the policy level once the projects reached completion. The NGOs in Kilosa and Rungwe have continued to work with the communities involved in the REDD+ project, but using new funding streams and new foci, while REDD+ in Tanzania has not come to fruition as a broader intervention.

In Nigeria's REDD+, Cross River State was marked out and discursively bounded from the rest of the country in terms of its landscape, its history, its forest governance and ultimately its potential for a successful REDD+ intervention. Portrayals of the State in REDD+ documents foregrounded a very specific, circumscribed history linked to the recent (post 1980s) conservation and development interventions. In tracing Cross River's desirability for REDD+ specifically to the interventions of the 1980s-1990s, the state and its civil society actors were able to take much of the credit for its status as Nigeria's 'last rainforest' (Oyebo *et al.* 2010; NPD 2011). However, what is left out is a much longer history of Cross River, which reveals greater complexity and

⁸ Interview, academic and member of REDD+ secretariat, Tanzania, 17 March 2016

⁹ Milledge, S. 2010. Status of Tanzania's NGO REDD project development and management considerations. 'Note to file' circulated March 8th 2010.

particularly the crucial role of colonial forest enterprise and transnational capital in the historical production of the 'last rainforest.' Extensive colonial production of forests across the country was met with difficult topography, local contestation and minimal incentives for commercial production in Cross River area, so that it was precisely in relation to rapid colonial and postcolonial forests exploitation across the *rest* of the country Cross River retained its forest cover (Brandler 1993).¹⁰ A circumscribed history of the State's forest conservation has helped to muster an image of the model state, in which longer and complex relations between Cross River and the rest of Nigeria is backgrounded and the agency and capabilities of Cross River as the model REDD+ state are, instead, foregrounded.

Though the 'Nigeria's last rainforest' narrative should ordinarily reflect a relational dimension, it has been mobilized as a quintessential tool for spatial bounding and isolation. Isolating Cross River in this way made it possible for REDD+ proponents to specify criteria for justifying the model logic in Cross River: criteria which ascribed various achievements solely to the State, by rendering invisible the relational (e.g. inter-state, transnational) and broader constitutive dynamics which have helped to position Cross River state as a model state. The project documents laid out the criteria as follows:

Cross River State has been retained as the pioneer, state-level demonstration model for a number of reasons: its political leadership and manifest engagement in forest conservation, its efforts in bringing the REDD+ mechanism to Nigeria, and its major potential for GHG emissions reduction from the forest sector in view that it hosts over 50% of the country's high tropical forest.¹¹

Materially, this has manifested in efforts by the state to re-territorialize state authority through a complete ban on forest exploitation in preparation for REDD+. This essentially marked out the forest landscape in Cross River as being actively protected in its entirety, as an exemplar of conservation virtue and a pool of forest carbon stock, in contrast to the timber forestry regime that dominates the rest of the country. Protecting the forest in this way became an important demonstration of the state's political will for REDD+ to international partners. Meanwhile, the total logging ban in Cross River has forced the public to source wood partly from neighboring states, so that the persistence of the logging ban for REDD+ is based partly on expanded logging elsewhere. Indeed, representatives of Cross River State had approached the government of neighboring Cameroon to negotiate the supply of timber to the state so as to address public timber needs, while upholding the ban.¹² The emergence of Cross River as the model state rests precisely on multiple relations, which the model logic would seek to render invisible through isolation and bounding.

Model logic 3: enrolment

Partly constituted through the dialectic of problematization and valorization, and the processes of bounding and isolation, the emergent model entity ultimately enrolls disparate actors. Enrolment of actors is central not only to the constitution and functioning of the model entity, but also to its perceived success (Mosse 2005). Model entities require the alignment of a wide range of actors and interest not only to cultivate the model entity, but to also draw attention, attract resources, accrete relationships and thus secure perceived success. Models, like the project system (Li 2016), are often not expected to produce any lasting results. Instead, success is judged primarily on the ability of projects to attract the desired attention and resources, while creating the conditions for even more projects. We suggest that this logic is intensified in the case of models, since their *raison d'être* is precisely the demonstration of success. Other considerations become secondary to the principal aim of ostensibly demonstrating efficacy and potential success. Success narratives therefore surround models, even when the concrete evidence of objectives being fulfilled is limited (Svarstad and Benjamin 2017).

¹⁰ Annual Report on Forest Administration of Nigeria 1948-49, available from the National Archive, Enugu, Nigeria. P. 4.

¹¹ REDD+ Readiness Preparation Proposal (R-PP), 2013: 6.

¹² Interview, forestry commissioner and state REDD+ official, Calabar Nigeria, 28 January, 2014.

Models typically come with promises and expectations, based on optimistic claims about a broader (future) intervention which models are supposed to herald. As such, models stake claims on the future in an important way – claims that help orientate and frame models in the "future positive" (Edwards 2013). Such future-positive claims merge with often simplistic narratives of change that seek to unproblematically connect the present to the future, while partly severing it from past challenges and failed interventions. Such claims must also be malleable enough to appeal to a wide range of interests. This process drives excitement, urgency and expectations of a "brighter future" (Massarella *et al.* 2018). As such, discursive 'communities of promise' build up around these expectations, seeking to coordinate a wide range of actors with diverse perspectives and objectives (Brown 2003; Konrad 2006). These expectations and communities of promise become "performative" as their existence "mobilizes both actors and resources" (Massarella *et al.* 2018: 376).

If, as Konrad (2006) argues, the raising of expectations is an inevitable and largely unintentional dynamic of new innovations, other processes of enrolment are more purposeful. Critical literature has shown the deployment in contemporary conservation and the development of multiple tools, rationalities and practices (Li 2007b; Igoe and Brockington 2007). Scholars of the environment working from the governmentality perspective have theorized this in terms of multiple environmentalities, defined as the different forms of rule by which the environmental conduct of populations are shaped (Asiyanbi *et al.* 2019; Fletcher 2017). A multiplicity of rationalities and technologies of rule becomes even more crucial in models where proponents are forced to grapple with the contradictory co-existence of the promises of the model entity and the messy realities that are constantly being bracketed off as lying external to the models. Yet there are no guarantees with the process of enrolment. Enrolment may be achieved tentatively, in part, or not at all. The model entity lasts for as long as the enrolment process persists, and enrolment falls apart when the promises of models and the multiple rationalities they deploy breaks down.

In Nigeria, enrolling actors into the model state took various forms. For instance, Cross River State sought to ensure the buy-in of all its departments and bureaucratic divisions, beyond the forestry department. As a senior forestry commissioner claims about REDD+, "there is something in it for everyone."¹³ Enrolment was thus pursued through various inter-ministerial workshops, trainings and meetings where carbon forestry was pitched to the non-forestry departments as a 'green development' pathway. At one such event, a regional UNREDD official pitched the potential gains of mainstreaming carbon forestry to other government departments: "What would you gain at the constituency level? You will become an inter-ministerial taskforce." The inter-ministerial taskforce is based on the logic of an incentivized reduced forest footprint where, as the official claimed, UNREDD would mobilize international finance to propel government departments along a carbon-friendly development pathway. Departments would be awarded carbon funds based on their potential carbon savings, which is a function of current forest impact: the higher a department's current forest impact, the more the funding they'll receive. But the assumption that all state departments can be incentivized to support REDD+ was partly challenged when representatives at the meeting questioned the assumed primacy of carbon forestry. For instance, the Investment Promotion Bureau questioned whether REDD+ was capable of providing much-needed investment and employment opportunities for Cross River's teeming young population.¹⁴

Proponents also sought to enroll NGO actors who are themselves attracted to the model REDD+ state by the prestige of international REDD+ partnerships, REDD+ funding and specific openings for direct recruitment into the state REDD+ architecture. Three out of four members of the core implementation steering team, the Cross River State REDD+ Unit, were recruited from the NGO sector. The state had appointed an NGO actor to chair the Anti-deforestation Task Force enforcing the forest exploitation ban for REDD+. The 2010 review of the forestry law in preparation for REDD+ in the state also provided a new basis for appointing NGO actors to key positions in the State Forestry Commission. While this enrolment of NGO and other non-state actors (e.g. international consultants from organizations such as the Food and Agriculture Organization) in the state was considered necessary for progressing REDD+, it nevertheless divided the forestry bureaucracy between the new NGO-dominated carbon foresters and long-standing bureaucrats mainly familiar with

¹³ Interview, forestry commissioner and state REDD+ official, Calabar Nigeria, 28 January, 2014.

¹⁴ Based on observation at the Inter-ministerial Engagement Meeting with other ministries of the Cross River State government, held 2 April, 2014 at the Forestry Commission, Calabar.

commercial forestry, generating the kind of tension which Giorgio Blundo (2014: 28) describes as a "two-speed bureaucracy" (in the case of Senegalese forestry service), where "two types of institutions competed i.e. the enclaves, which were mainly staffed by a younger generation of technocrats, and the line ministries led by old-school bureaucrats" (see also Asiyanbi 2015).

Local forest communities in Cross River saw in REDD+ a promise of 'the good life', linked to carbon credits, monetary rewards and other development benefits that REDD+ promised (Asiyanbi *et al.* 2019; Isyaku 2017). Communities were summoned through a seemingly contradictory combination of incentives including the promised carbon payment and an annual "loyalty" payment which replaced the timber royalties that communities had received under the timber forestry regime; the disciplining effects of REDD+ trainings, field demonstrations and workshops; and coercive threats of law and violence under the enforcement of the logging ban. These strategies have meant a range of dynamic responses from local communities who have strategically appropriated the logics of carbon forestry, but sometimes resisting REDD+ altogether (see Asiyanbi *et al.* 2019; cf. Setywati 2020). Nevertheless, in spite of these complexities, Cross River is still seen as a successful model REDD+ state at least by proponents and their international REDD+ partners, as reflected by its international recognition and patronage, and the intentionality around replicating the Cross River experience in Ondo, Nasarawa and Ekiti States of Nigeria.

Similarly, from the early stages of the 'REDD readiness' phase in Tanzania – in which the pilot projects were central – a wide range of actors quickly became enrolled in activities, drawn by the view that REDD+ would provide innovative solutions to a wide range of challenges including climate change, forest and biodiversity conservation and village-level development. By presenting itself as a catch-all solution, the promise of REDD+ aligned with a wide range of what are referred to as 'socio-technical imaginaries' (Jasanoff and Kim 2013; Leach and Scoones 2015; Taylor 2004). These imaginaries reflect the ideas and ideals of different actors and actor groups about what is desirable and what constitutes modernity, progress and positive change. At the international level, the concept of REDD+ aligned with a broader narrative and shared imaginary of global climate change mitigation being solved by market-based mechanisms, coupled with the ability to provide forest-dwelling communities with benefits (which, as discussed, aligned well with Tanzania as a model country, due to its strong history of PFM). At the national level, government actors were enrolled into expectations of a new and continuous source of funding that would guarantee the safety of the nation's forests. For many of the NGOs, REDD+ promised an ongoing source of funding to build on their long-term missions of forest and biodiversity conservation. Among villagers, REDD+ aligned with imaginaries of 'development', particularly in relation to receiving education, funding, and what were seen as physical manifestations of 'development' such as office buildings and dispensaries.

Although raising expectations played a significant role in enrolling a wide range of disparate actors around REDD+ in Tanzania, other enrolment strategies were also employed. For example, the framing of REDD+ at the village level through both written and oral communications also worked to enroll actors into the process. In Rungwe, for example, signs, stickers and posters were placed around the village to explain REDD+. A disaster narrative was used, with images and text describing the "*ukame, mafuriko, ongezeko la joto*"¹⁵ (droughts, floods and heat rise) that could occur if deforestation continues. Similarly, in Kilosa, a video was played to villagers that talked about the possibility of drought and desertification if forests are not protected, showing images of places in Tanzania where there have been such issues. Such processes of disciplinary environmentality (Fletcher 2010) successfully led to self-disciplining behaviors among village actors, which continued beyond the end of the project. For example, village committees in Kilosa continued to manage and patrol the forest reserves in Kilosa after the project had been completed, even though no subsequent REDD+ payments were received. This was partly driven by an expectation of future payments, which reflects the neoliberal form of environmentality (*ibid*) central to REDD+. Not all villagers became enrolled, however, with some fully rejecting REDD+. A number of reasons were given for this, including the aforementioned conflicts around farm relocations, a sense that the project was "for the good of the few"¹⁶ and a feeling of being excluded from project activities – especially education, which was highly valued.

¹⁵ REDD+ promotional material used by WCS in Rungwe, Mbeya.

¹⁶ Interview, farmer/villager (not involved in committees or village leadership), Kilosa Tanzania, 07 May 2016.

5. Effects of models: becoming an end and selling success

The model REDD+ state in Nigeria has not led to a roll out of the scheme at the wider national scale; neither has the experience of Cross River been replicated in any substantial way in other Nigerian states, despite proponents' intentions and efforts. In fact, while the discursive and practical logics of the model were abundantly evident in Cross River, the impacts of REDD+ in relation to the problems of emission reduction, forest conservation and governance, and rural livelihoods and development were either insignificant, ineffective or even counterproductive – except for some selective reinforcement of state power, strategic positioning of NGO actors within the state forestry apparatus, and strategic appropriation of carbon forestry claims by some forest communities (see Asiyanbi 2015, 2016; Asiyanbi *et al.* 2019; Isyaku 2017; Isyaku *et al.* 2017; Nuesiri 2016, 2017). In Tanzania, the extensive suite of REDD+ model projects and villages have not led to a scaling up of REDD+ from the village and district level to a broader country level. The model REDD+ projects in Tanzania delivered some of the promises of the scheme, including (isolated) reduction of deforestation, livelihood development and village planning, which were judged by some participants as positive. However, many national actors involved in the pilot projects framed them as being more problematic than beneficial, with much criticism arising about the use of pilots. Indeed, other in-depth studies of REDD+ projects in Tanzania revealed a range of negative and unintended consequences (Koch 2017; Lund *et al.* 2017; Makatta *et al.* 2015; Massarella *et al.* 2018; Svarstad and Benjaminsen 2017).

In both cases, there are limited possibilities for scaling up and/or replicating the model experience elsewhere, which is contrary to the importance placed on the latter by REDD+ proponents. This is also evident in REDD+ at the global level where the narrative of extracting success has meant an emphasis on a few countries which have progressed quickly through the REDD+ multi-phase pipeline of, for instance, the World Bank's FCPF, even if this means largely ignoring a greater proportion of REDD+ countries in the process. The failure of these model entities to herald substantive and transformative interventions partly reflect complexities that are peculiar to their respective contexts. These contextual factors are not the focus of this article *per se*; these have been well documented in various in-depth case studies on Nigeria and Tanzania (see above). However, we suggest that there are certain characteristics of models that, paradoxically, limit their ability to bring about widespread and transformational change in fundamental ways: characteristics that require further critical exploration. By bounding and isolating valorized microcosms, they get separated from the complex histories and realities in which they ordinarily exist and, crucially, the potential improvement of which they are meant to reflect. The process of enrolment, which involves among other things, raising expectations and fostering subjectivities in favor of REDD+, further contribute to the creation of a super-charged microcosm that neither reflects nor fully engages with contextual complexities. As such, scaling up becomes elusive.

Yet, despite this inherent tendency, the use of models has become pervasive. Model-making has become a regularized way of intervening in environmental and development problems, with the capacity for substantive intervention increasingly dissipating in the continuous cycle of fads and the underlying pursuit of the next 'perfect' intervention. But why are they so pervasive if they often fail to bring about the promised substantive interventions? One important explanation is the effects that models produce. In our cases, the model logic allowed diverse REDD+ actors to attract the desired kind of attention – financial resources, expertise, relationships, political clout, recognition. It empowered REDD+ proponents to wield influence, shape institutions, determine priorities and build relationships (cf. Lund *et al.* 2017; Mosse 2005; Wilson 2014). For development institutions and REDD+ donors, model-making enabled a concentration of resources and efforts, focusing action on supposedly manageable miniatures, and therefore projected an appearance of efficiency and efficacy. However, in reality, as Li (2016: 85) argues, this effectiveness is about "doing more and more with less and less." In other words, models allow proponents of projects of improvement to mobilize and sell narratives of success (Büscher 2014; Svarstad and Benjaminsen 2017), without having to fully engage with the complex socio-political realities of operationalizing schemes like REDD+ at scale or grappling with their wider impacts of society and the environment (Li 2007a). Hence, as Mosse (2005) notes, success can continue to be claimed as long as the abstract representation of the model continues to articulate with the web of actors and interests that converge around it. In fact, our analysis shows that models are uniquely defined by their role in the production and circulation of success claims. Through a careful designation of model entities as valorized sites where the possibility of success can be pre-assured beforehand, models allow proponents of interventions

to claim success, which is a matter of producing and sustaining a particular interpretation of events (Büscher 2014; Mosse 2005: 158). It is in model entities and the discursive representations that co-constitute them that success is easily tokenized, and 'results' become demonstrable (Blaikie 2006; Li 2016). And this sets models apart. Although the cascading scale of REDD+ models has each one bounded and isolated, information still filters across scale – upwards (e.g. from model projects to model policy and paradigm) and downwards (e.g. from model paradigm to model projects), thus ensuring that the scheme is sustained, despite its challenges.¹⁷ As such, claims of success are supported by the travel of carefully curated information between models at different scales, via lessons learnt documents, project reports, academic investigations etc. Yet, political ecologists and other critical scholars have continued to produce counter-accounts that place models and their effects within the wider contexts in which they are pursued (see Asiyanbi and Lund 2020).

If these are the effects of models, then the question of intentionality becomes important. Proponents of models are often intentional about their deployment of the logics of models, and often with noble intentions. As Mac Chapin (1988) notes, model entities are 'seductive' for proponents of improvement. Yet, their increasing pervasiveness must be understood partly as reflective of a wider ethos of contemporary times. Models have flourished within the contemporary rise of a neoliberal approach to governing the environment and social life. Models serve the neoliberal ethos since intervention via models enables a 'light touch' approach that does not question or challenge the dominant system and its paradigms (Li 2016; Wilson 2014). Indeed, the corollaries of neoliberal conservation noted by Büscher (2013) – including the pursuit of governance at devolved lower scales, the importance of appearance, and the simplification and marketing of complex social experiences – are in consonance with model-making. Meanwhile, the increasing complexity and uncertainty of contemporary life and the recognition of the perennial failure of previous ambitious social interventions have also been processes at the global level. They have led to a disavowal of collective capacity for transformative action and the redirection of responsibility down the scale of governance, as scholars of governmentality increasingly suggest (see Joseph 2016). Under these conditions, models flourish as tokens of possibility.

6. Conclusion

Model-making is an increasingly prevalent practice in conservation and development, especially in the context of fads that promise to deliver global win-win solutions to complex issues. Models exist across scales and follow distinct logics, which we have identified and explored in our research and analysis. These logics, we argue, converge around a fundamental paradox at the heart of models, that is, they rarely fulfill their objective of heralding a more substantive intervention. Yet models continue to proliferate in international conservation and development. For development institutions and donors, model-making enables a concentration of resources and efforts, and therefore delivers the appearance of efficient and effective intervention. But at the same time, it sets up models as zones where proponents seek to suspend everyday complexities. This allows policies to be portrayed as 'successful', justifying the tentative continuation of intervention, which remains concentrated at such a relatively small scale that it fails to really challenge the status quo. We have argued that REDD+ is a quintessential case of model-making. This partly explains why it continues to be supported as a global policy direction though it has failed to deliver the promised change (Lund *et al.* 2016). Yet, at a time of deepening socio-ecological crises, claims of policy success deserve more scrutiny than ever. Understanding and critically engaging with models provides one important avenue. Unpacking the model logic also reveals openings and fissures through which resistance and progressive interventions could be mobilized and channeled, not least by sharply projecting the problematic outside of the model (to what matters for broader politics) and *not* the miniature, purified, depoliticized and isolated artefact. As such, models are (and can be) contested spaces into which the uncooperative 'outside' intrudes. The appearance of effectiveness, unreasonable claims of success, and the overarching foreclosure of the space for thinking differently about conservation and development interventions call for strategic responses that not only challenge the pervasive and taken-for-granted assumptions of model-making, but also stimulate debates about more productive ways of pursuing conservation and development interventions.

¹⁷ Thanks to Jens Lund for highlighting this to us.

Conservation and development problems have such high stakes that going beyond models is surely warranted. While, in a sense, it appears as though we challenge models to do more, we are actually suggesting that the inability to reach further is part of what makes models what they are. This means that in order to improve the possibility of actually addressing problems, there is a need to abandon the model logic altogether, at least in some cases, and channel ambition through wholesale interventions that pay attention to wider systems and the contexts within which problems are being addressed.

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