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# REDD in Design

*Assessment of Planned First-Generation  
Activities in Indonesia*

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# **REDD in Design: Assessment of Planned First-Generation Activities in Indonesia**

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## **Abstract**

Much of the guidance about potential impacts of reduce emissions from deforestation and degradation (REDD) speculates how efforts would be implemented and draws lessons from other mechanisms, such as payments for ecosystem services (PES). However, with few REDD activities underway, little evidence indicates whether REDD projects are meeting these expectations. This article examines 17 REDD interventions under development in Indonesia, reports trends in project design, and assesses the extent to which interventions follow the model of pro-poor PES schemes. I find that a dominant type of REDD intervention follows a concession model and seeks to prevent large-scale conversion to plantations by outside actors. Although these projects fit the definition of PES at the scale at which the environmental service is transacted, PES characteristics are not a primary component of on-the-ground implementation. Small-holder actors are recognized as essential to the long-term success of the intervention, but are not the main focus.

**Key Words:** climate, climate change, REDD, carbon, forests, deforestation, degradation, emissions, mitigation, forest carbon, Indonesia, Kalimantan, Borneo, avoided deforestation, UNFCCC, Kyoto Protocol, PES, concession

**JEL Classification Numbers:** Q23, Q28, Q27, Q54, Q56, Q57, Q58, Q01

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## **REDD in Design: Assessment of Planned First-Generation Activities in Indonesia**

Erin Myers Madeira \*

### **Introduction**

In 2007, the parties to the U.N. Framework Convention on Climate Change agreed to the Bali Roadmap, which encouraged actors in developed and developing countries to take immediate actions to mitigate carbon emissions from the forestry sector. The various actors took heed and, since 2007, Reducing Emissions from Deforestation and Degradation (REDD) activities have exploded. In a recent survey of emerging REDD activities around the world, Wertz-Kanounnikoff and Kongphan-Apirak identified 109: 44 demonstration activities, referring to pilot projects that directly reduce emissions from deforestation and degradation (DD), and 65 readiness activities, those designed to create an enabling framework (in press). More than half of the demonstration activities are in Indonesia.

REDD-related publications have also proliferated in the last two years, analyzing the potential issues, benefits, and co-benefits of REDD. Much of what has been written comes from a normative perspective, speculating on what forms REDD could take (Peskett et al. 2008; Bond et al. 2009) and calling for research into priority issues and attention to implementation and governance challenges (Miles and Kapos 2008; Agrawal, Chhatre, and Hardin 2008). Attracting much attention are comparisons of REDD and Payment for Environmental Services (PES) schemes in which poor, small landholders provide environmental service and end up better off (Grieg-Gran, Porras, and Wunder 2005; Bond et al. 2008; Peskett et al. 2008; Wertz-Kanounnikoff and Kongphan-Apirak 2008; Wertz-Kanounnikoff, Kongphan-Apirak, and Wunder 2008; Wunder 2008; Wunder, Engel, and Pagiola 2008). However, because most REDD activities are not yet fully operational, little is known about how they will be implemented and whether they will deliver the pro-poor benefits seen in PES schemes in other sectors.

This article provides early observations of how REDD activities are being designed and implemented on the ground in Indonesia. Research from 17 first-generation interventions provides evidence to assess the extent to which REDD meets the expectations of PES-like

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activities. Information was gathered from project documents, semi structured interviews with project proponents, unstructured interviews with key experts and stakeholders, and site visits to four site-level REDD activities. Because all the REDD activities are in planning or early implementation stages, these assessments are based on the perspective of the project proponents and their intentions for implementing REDD. All data was gathered between February and September 2009.

Three key findings follow:

- Two important variables that differentiate REDD interventions are the DD threat and the strategy for establishing long-term carbon rights. Most interventions seek to prevent planned DD by industrial-scale actors. A dominant carbon rights strategy is the *concession model*, in which the project proponent acquires forest concession rights and in doing so prevents outside actors from converting forest to plantation (often acacia or oil palm).
- Although most REDD interventions fit the definition of PES at the scale at which the environmental service (ES) is transacted, many do not have the small-scale, pro-poor characteristics of the PES projects cited in the literature.
- Small-holder actors are recognized as essential to the success and permanence of the intervention. However, PES characteristics are not a prevalent component of the community engagement program. Plans to incorporate local stakeholders more often involve job creation, ICDP-like mechanisms, and community foundations rather than PES mechanisms.

## Definitions and Concepts

The Center for International Forestry Research defines REDD as a mechanism that uses “market/financial incentives to reduce the emission of greenhouse gases from deforestation and forest degradation” (CIFOR 2009). REDD can refer to policies and measures that reduce emissions from DD, such as strategic road planning, implementing best practices for timber production, or restricting activities that degrade peatlands. REDD can also refer to pilot projects,

or demonstration activities,<sup>1</sup> that have a clear objective to directly reduce emissions from DD in a specific geographic area.

Some REDD projects involve multiple interventions that are captured in the same project document but occur in different locations and use different strategies. For this article, I assess each intervention individually. I define a REDD intervention as a geographically distinct activity, aimed at directly reducing emissions from deforestation and degradation, that self-identifies as REDD, and has an MOU or official agreement with some level of government to develop REDD activities. I differentiate between *site-level interventions* and *landscape-level interventions*. Site-level interventions aim to generate emissions reductions based on slowing or stopping DD in a localized area. The forest areas are geographically contiguous, will be managed as one homogenous area, and have the same legal classification at the end of the project. Landscape-level interventions aim to generate emissions reductions across a heterogeneous landscape where forest type, legal classification, and deforestation drivers vary. They are subnational, have clearly defined boundaries, and seek to measure emissions reductions that will be attributed to intervention stakeholders. The entire forest area of site-level interventions is actively managed to reduce emissions. Landscape-level interventions, on the other hand, may incorporate a very large area in which several measures are undertaken to reduce emissions, but the area affected by those measures is much smaller than the reported project size.

Wunder defines PES by several related criteria: as (a) a voluntary transaction where (b) a well-defined environmental service (c) is bought by a service buyer (d) from a service provider (e) if and only if the service provider secures service provision (conditionality) (2005). In principle, REDD is the ultimate PES scheme where carbon (the service) buyers in developed countries will pay service providers in developing countries to keep carbon in standing forests instead of partaking in activities that would result in emissions from DD. Although PES by definition is not associated with small, poor landholders, PES schemes with small-holder service providers are often cited to support the pro-poor potential of REDD (Peskestt et al. 2008). In a comparison of 13 PES schemes around the world, Wunder and his colleagues found that the poor generally benefited from these schemes, either by generating benefits as ES service providers, or

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<sup>1</sup> Wertz-Kanounnikoff and Kongphan-Apirak use the term *demonstration activities* to refer to pilot projects with a clear objective to directly reduce emissions from deforestation and degradation (2008). In Indonesia, the term refers specifically to the few pilot projects that have received official approval by the government of Indonesia. Although there are a handful of official demonstration activities, approximately two dozen pilot projects are at some stage of development, some of which are seeking but have not yet received approval as an official demonstration activity.

because schemes included poverty alleviation among its side objectives (2008). In a recent review PES schemes in Southeast Asia, Wertz-Kanounnikoff and Kongphan-Apirak found that most of the environmental service providers are rural smallholders, many of whom are poor, and that schemes had “a strong focus on social co-benefits (pro-poor PES)” (2008, 13). In an assessment of the PES literature and field work in five countries, Wunder concludes that “poor people can widely participate in PES schemes, that this participation usually makes them better off” (2008, 297). In a review of eight Latin American case studies of market incentives for carbon and watershed services, Greig-Gran, Porras, and Wunder found positive local income effects in most cases, including more land tenure security and socio-institutional strengthening in some cases (2005).

### What is the Geography of REDD in Indonesia?

The 17 interventions covered in this article represent 12 of the 25 known REDD projects in Indonesia. Those reviewed in this article were selected to capture the geographic distribution of projects across the archipelago. They include site-level and landscape level interventions, the diversity of actors driving project development (such as private project developers, NGOs, and bilateral aid organizations), and only projects advanced enough to have made official agreements with some level of the Indonesian government to develop REDD activities. Many of the projects not reviewed were little beyond the idea phase at the time of research.

Twelve interventions are site-level and five are landscape-level. Table 1 shows their distribution across Indonesia.

**Table 1. Distribution of REDD Interventions in Indonesia**

	Site-level	Landscape-level	Total
Kalimantan	9	3	12
Sumatera	1	1	2
Papua	2	0	2
Sulawesi	0	1	1
Total	12	5	17

*Note:* Seven site-level and two landscape-level interventions are at least partially in peat.

The sizes of site- and landscape-level interventions are not directly comparable because the size of a landscape-level intervention does not reflect the size of the area that will be

managed for carbon. The site-level interventions range from 10,000 ha to 200,000 ha, with an average size of approximately 80,000 ha. With one exception, landscape-level interventions are much larger than site-level interventions. The four large landscape-level activities are 750,000 ha, 2.2 million ha, 3.2 million ha, and 4.2 million ha.

### **How Do REDD Projects Establish Legal Rights to Carbon?**

To sell carbon credits, a project proponent must demonstrate that it has long-term rights to the carbon. For example, the Voluntary Carbon Standard requires that the project proponent has proof of title that demonstrates their “right to the GHG emission reductions ... and the ownership of the project” (VCS 2008a, 8). Almost the entire Indonesian forest estate is administered by the Indonesian government under statutory law. Less than 2 percent of the forest estate is either formally designated for use by communities or indigenous people, 230,000 ha, or owned by firms or individuals, 1.71 million ha (Sunderlin, Hatcher, and Liddle 2008). In Indonesia, as in most countries, buying and selling forest lands is prohibited. To establish long-term carbon rights, project proponents in Indonesia typically use one of three alternative strategies:

- Acquire forest concession rights for the project, which I call concession model interventions.
- Enter into an agreement with the landowner with existing right to the carbon to develop a carbon project and share the carbon credits produced by the project, which I call government partnership interventions because the government is the statutory landowner.
- Enter into an agreement with the landusers with existing carbon rights to develop a carbon project and share the carbon credits produced by the project, which I call landuser partnerships because the existing landusers are legal concession holders or local stakeholders.

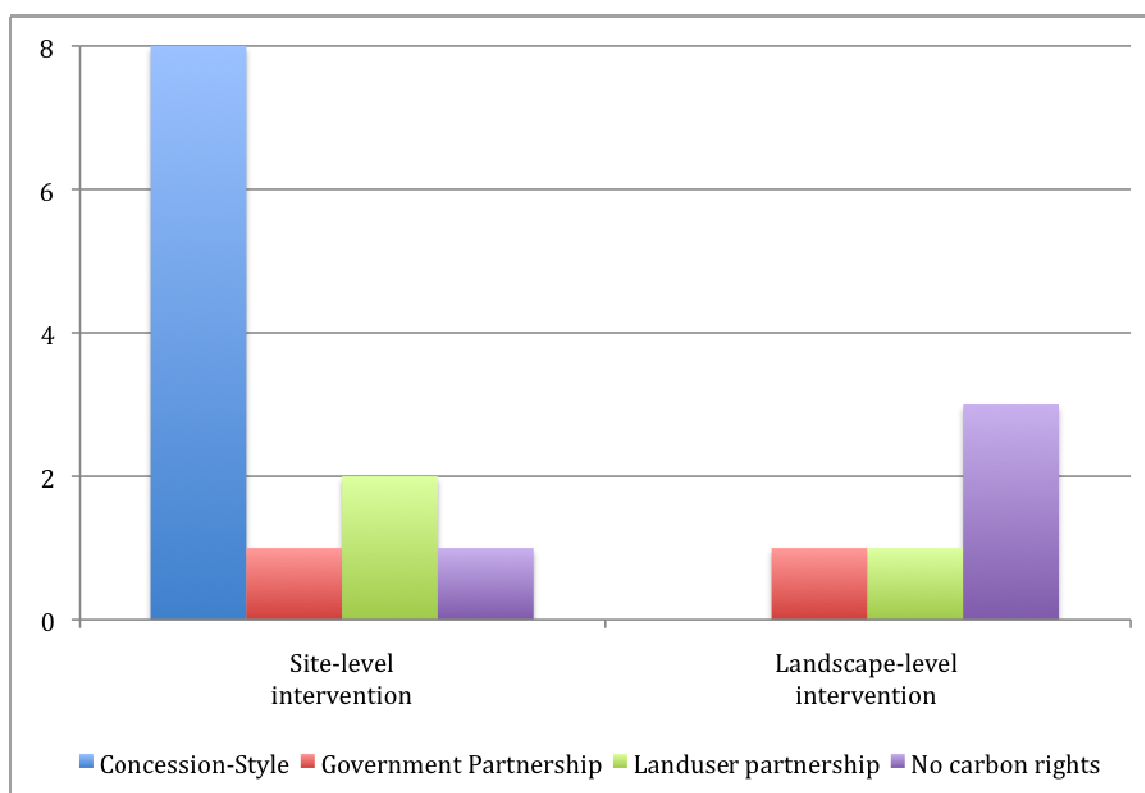
In a fourth category, or noncategory, actors support the government, which is the holder of carbon rights, and though these actors arguably lead the development of the REDD intervention, they do not seek any carbon rights for themselves. These activities are driven by bilateral aid organizations or NGOs, all of which partner with multiple levels of the Indonesian government in developing official demonstration activities.

Of the site-level interventions, the majority follow the same strategy to establish carbon rights: the concession model, shown in Figure 1. Of the eight that use the concession model, seven are applying for Ecosystem Restoration Concessions (ERC) or a province-specific



equivalent of the ERC. The ERC was established in 2007 for degraded production forest. The concession holder is obliged to perform some restoration activities and has the right to generate revenue from carbon and watershed services. Although forest classification, or zoning, is often unclear or differs according to national and district maps, it is still influential in determining potential use and suitability for REDD. ERCs can be obtained for forest areas classified as production forest and require approval of district and national authorities.

**Figure 1. Strategies for Establishing Legal Carbon Rights**



*Notes:* Concession style refers to interventions that acquire forest concession rights. Government partnership refers to interventions that enter into an agreement with the landowner (in this case the government) with existing right to the carbon. Landuser partnership refers to interventions that enter into an agreement with the landusers with existing forest carbon. No carbon rights refers to interventions in which actors are not seeking any carbon rights themselves, but support the government in developing an intervention. No carbon rights interventions in this article are also official demonstration activities.

The final concession model intervention plans to hold a timber concession and manage it for low carbon.

One site-level and one landscape-level intervention use government partnerships to establish long-term rights to the carbon credits. The site-level intervention is in protected forest under the authority of the district government. The landscape-level intervention is partnering with the provincial government to reduce deforestation across a variety of land uses facing various deforestation pressures.

Three interventions use landuser partnerships to establish long-term rights to the carbon credits. Two are site-level interventions and partner with existing concession holders (palm and timber). One is landscape-level and works with local stakeholders to establish a forest management unit (FMU) where reducing deforestation is an objective. An FMU is a step toward sustainable forest management and involves multiple stakeholders and forest functions in a long-term management plan. Because the FMU intervention also requires working with the district and central government, it is a hybrid of a landuser and government partnership.

### **How Is Carbon Tenure Strategy Associated with Deforestation Threat?**

The legal strategy a project uses to establish long-term carbon rights is associated with the type of DD threat it faces. I focus in this section on the 12 site-level interventions because by definition all of the landscape-level interventions address multiple DD threats. DD threats can be differentiated based on whether the actors are already in the project area and whether the DD threat is planned or unplanned. Existing actors have a pattern of forest use in the project area. New actors may be active elsewhere but not in the project area and are predicted to introduce new patterns of forest use in the area. As a result, site-level interventions can focus either on changing the behavior of existing actors to prevent them from carrying out DD activities or on preventing outside actors from engaging in new DD activities in the area. An intervention may address both types of threats, but usually focuses on one or the other.

Planned deforestation is designated or sanctioned by the government and is included in land management or planning documents (VCS 2008c). It can take a number of forms, including conversion of forest to industrial scale production of commodities. Unplanned deforestation is unsanctioned, results from the inability of institutions to control forest use, and includes encroachment on forest area designated for protection, timber, or other purposes (VCS 2008c).

The vast majority of site-level interventions examined focus on abating planned DD by industrial-scale agents of deforestation. Among these, more interventions are focused on preventing conversion by outside actors than on changing behavior of existing actors (Table 2).

Of the 12 site-level interventions, all eight concession models focus on preventing large-scale conversion to plantations by outside actors. Among these, there is significant variation in the DD threat of existing actors and the strategies to address the associated emissions. Although some interventions are in areas with very low population density and plan to tolerate a background level of DD by existing actors, others face greater pressure from existing actors and take measures to address existing DD threats.

**Table 2. Relationship between Strategy and Reduction Activity**

Strategy to establish legal carbon rights		Major activity to reduce deforestation and degradation			<b>Total</b>
		Preventing conversion to plantation by outside actors	Change behavior of existing actors, concession holders	Change behavior of existing actors, small-scale local actors	
Site	Concession-style	8	0	0	<b>8</b>
	Government partnership	0	0	1	<b>1</b>
	Landuser partnership	0	2	0	<b>2</b>
	No carbon rights (bilateral aid organization)	0	0	1	<b>1</b>
<b>Total</b>		<b>8</b>	<b>2</b>	<b>2</b>	<b>12</b>
Landscape	Concession-style				<b>0</b>
	Government partnership				<b>1</b>
	Landuser partnership				<b>1</b>
	No carbon rights (bilateral aid organization)				<b>3</b>
<b>Total</b>					<b>5</b>

*Notes:* All eight concession-style site-level interventions are preventing large-scale conversion to plantation by outside actors. Activities to reduce DD for landscape-level interventions are not counted because by definition landscape-level interventions address multiple DD threats.

The two site-level, landuser partnership interventions focus on changing the behavior of existing stakeholders to prevent planned DD. In both cases, project proponents work with concession holders to improve environmental performance and monetize the carbon saving expected from the improvements in environmental practice.

Only two site-level interventions mention unplanned DD by local actors as the main threat their intervention seeks to mitigate. One is a bilateral aid project that involves significant restoration work in addition to avoided DD; the other is a government partnership targeting degradation by encroachment and illegal logging. It is significant that only two site-level REDD

interventions focus on mitigating DD by local actors because much of the literature hypothesizes that REDD activities will follow the model of PES programs with small-scale resource managers providing the service (Grieg-Gran, Porras, and Wunder 2005; Bond et al. 2008; Wertz-Kanounnikoff and Kongphan-Apirak 2008; Wertz-Kanounnikoff, Kongphan-Apirak, and Wunder 2008; Wunder 2008; Wunder, Engel, and Pagiola 2008).

### **Concession Model Interventions**

In fact, the prevalence of the concession-style interventions is not that surprising. First, the land tenure regime in Indonesia favors large-scale enterprises and the concession model is well-tested (Agrawal, Chhatre, and Hardin 2008). As a result, the path of least resistance may be for REDD projects to fashion themselves in the proven concession model. Second, conservation efforts in Indonesia have been criticized for waning interest among government officials, which leads to project neglect or failure. By acquiring a concession permit, a project must overcome the discretionary government decision-making only one time. Once the concession is issued, the project can continue for the duration regardless of inclination or disinterest among officials. Third, the large up-front costs associated with developing and certifying REDD projects means that project developers need to ensure both that the project will continue for many years and that they can recover costs. The concession-style intervention allots that certainty and a greater degree of control over the project's future over that of the two partnership-style interventions.

Finally, certification of carbon credits requires that project proponents demonstrate clear rights to carbon resources in the project area. Ten of the 12 site-level interventions are seeking certification through the Voluntary Carbon Standard (VCS) and the Climate, Community and Biodiversity (CCB) Standards. One of the factors that determine whether a project has addressed the risk of nonpermanence adequately is how it addresses risk of unclear land tenure and potential for dispute (VCS 2008b). Of the three strategies for establishing carbon tenure, the concession model intervention best minimizes this risk because the concession holder has clear long-term carbon rights for the duration of the concession.

Carbon standards are also shaping the social and environmental aspects of REDD interventions. Certification under VCS and CCB requires meeting standards for consultation with all users of resource, Free and Prior Informed Consent (FPIC), grievance and conflict resolution, and assessing and mitigating negative livelihood impacts and environmental impacts (CCBA 2008). As a result, projects pursuing certification under these standards can be assumed to have carried out a minimum level of community consultation and environmental consideration.

## **Are REDD Interventions in Indonesia like PES Schemes?**

At the macro level, REDD activities in Indonesia are PES if they seek compensation for reduced emission. The project developers voluntarily develop the initiative; carbon services are well defined and quantified; carbon services are transacted as credits between the sellers and buyers; and payment is conditional on verified carbon services, or carbon credits in the case of projects selling to the voluntary market. However, as PES programs, they differ greatly from the cases cited in the literature. Unlike most PES programs, in which benefits are not large enough to attract the interest of the powerful (Wunder 2008), most of the REDD interventions covered in this paper feature large, well-financed environmental service sellers and buyers with the sellers expecting significant financial gains.

Many of the interventions focus primarily on preempting large-scale conversion by outside actors rather than on changing the behavior of existing actors (see Table 2). Given the drivers of deforestation in Indonesia, these REDD interventions are probably well-targeted. Although they fit the definition of PES at the stage when the environmental service (carbon) is transacted, many do not rely on PES mechanisms in the core elements of their implementation.

Further, only five mention conditional compensation for stakeholders, one of the defining characteristics of PES programs. The three partnering with concession holders mention compensation contingent on selling carbon credits, which depend on verified performance. The other two mention conditional compensation for local stakeholders for restoration activities and forest management. Thus, conditional compensation in these two interventions is for activities linked to carbon sequestration and not reducing DD. This is not to say that some of the concession model interventions won't include some conditional compensation for local stakeholders in their implementation plan, but such elements are still under development and/or not key program characteristics.

## **Are Local Actors Important?**

Although most interventions focus on industrial-scale agents of deforestation, local actors are also important. Many project proponents interviewed (private sector, government, and NGO actors alike) pointed out that regardless of legal tenure, local actors have de facto control over the forest, and, unless they are part of the intervention and see the benefits, long-term sustainability or permanence won't happen. These proponents see investments in livelihoods as critical to achieving carbon goals.

Some project proponents have thoroughly thought out plans for engaging local actors and investing in community development, including programs for free and prior informed consent, job creation, addressing tenure insecurity of local stakeholders, compensation for management of community forest (fitting the PES model), investments in alternative livelihoods and other ICDP-like mechanisms. In fact, the plans for working with local actors more often resemble ICDPs than PES schemes. Additionally, a number of project proponents are planning to allocate a significant portion of carbon revenues to local actors, the rationale being that local actors are critical to the long-term success of the intervention.

Clearly, REDD interventions can be pro-poor and yield local benefits even if local actors are not involved directly in generating measurable carbon benefits. However, the more removed local actors are from the generation of the environmental service, the more they become PES-nonparticipants<sup>2</sup> whose benefits or costs are directly related to project proponent beliefs about the link between local actors and project permanence, and the resulting discretionary decisions in designing and implementing the intervention.

Inevitably, more will be written on REDD before many first-generation activities in Indonesia sell their first carbon credits. In crafting the international and national policies as well as voluntary standards that will regulate and incentivize REDD activities, it is important to consider trends already underway. Focusing too narrowly on PES, at least in Indonesia, might cause us to miss a spectrum of other implementation strategies underway and in need of guidance on best practices.

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<sup>2</sup> Wunder (2008) introduces the idea of PES nonparticipants who are not involved in selling or buying ES, but who are affected by PES programs.

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