ENDING TROPICAL DEFORESTATION: A STOCK-TAKE OF PROGRESS AND CHALLENGES

REDD+: LESSONS FROM NATIONAL AND SUBNATIONAL IMPLEMENTATION

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KEY POINTS

- **The novel feature of REDD+—results-based payments at jurisdictional scales—remains largely untested due to a lack of international finance and the complexity of such systems.** Therefore, it is not yet possible to make rigorous generalized conclusions regarding its current impacts and future potential.

- **National REDD+ initiatives have made progress toward creating domestic conditions for addressing deforestation and forest degradation, including better understanding of deforestation drivers, higher forest-monitoring capacities, and increased stakeholder engagement.** However, these advancements have not yet turned the tide on deforestation. For the most part, new coalitions calling for change in forest governance have failed to overcome business-as-usual deforestation.

- **Subnational REDD+ initiatives have generated important insights into the agents and drivers of deforestation that must be addressed at higher levels (e.g., tenure, finance, globally traded commodities), along with the complexity of multilevel governance structures that are needed to implement carbon accounting, safeguards, and incentive systems.**

CONTENTS

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THE ISSUE

REDD+—which stands for reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries—debuted on the global stage more than a decade ago. The idea prompted high expectations that an approach that featured results-based incentives for reducing tropical deforestation and degradation could rapidly succeed where other approaches had failed. Since then, over 50 countries have initiated REDD+ strategies; subnational governments have experimented with jurisdictional REDD+ programs; and more than 350 REDD+ projects have been implemented globally. What are the lessons learned from REDD+ initiatives so far? How can these lessons support future forest-based climate change mitigation?

WHY REDD+ IS IMPORTANT TO FORESTS, CLIMATE CHANGE, AND DEVELOPMENT

In 2007, climate negotiators embarked on talks to determine how international cooperation to reduce emissions from deforestation should be incorporated into global climate mitigation efforts. A review commissioned by the British government had identified reducing tropical deforestation as a key element of any strategy to substantially reduce global emissions (Stern 2006), and a coalition of forest-rich developing countries put forward a proposal that such reductions be compensated with financial incentives from industrialized countries (Coalition for Rainforest Nations 2005). REDD+ was seen as a potential quadruple win, with climate benefits linked to co-benefits for poverty reduction, better forest governance, and biodiversity conservation (Brown et al. 2008). The ultimate result—REDD+—was incorporated into Article 5 of the Paris Agreement in December 2015.

In the meantime, the case for addressing deforestation to meet climate goals has only become stronger. As detailed in a companion brief on forests and climate change (Wolosin and Harris 2018), recent estimates suggest that stopping deforestation and other "natural climate solutions" could provide at least 37 percent of the cost-effective emissions mitigation needed by 2030

to meet the Paris Agreement goal of keeping global warming below 2°C (Griscom et al. 2017). In addition, emerging science suggests that the impact of tropical deforestation on the global climate is amplified through accompanying land use emissions from fires, and agricultural emissions from former forestlands, as well as through nongreenhouse gas pathways, such as the loss of water cycling functions and impacts on atmospheric chemistry (Wolosin and Harris 2018).

Evidence of forests' contributions to development objectives continues to accumulate. Natural forests and wildlands provide on average 28 percent of total household income in communities in and around forests—nearly as much as agricultural crops—supplying food, fuelwood, and fiber for consumption and sale (Angelsen et al. 2014). These findings suggest that in many cases, there is minimal trade-off between forest protection and local incomes—even more so when nonpriced ecosystem services are considered. The contributions forests make to health, clean water access, and moderation of natural disasters are especially important to poorer households, but remain largely invisible in national-level economic decision-making (Seymour and Busch 2016). New science is also illuminating the impacts of forests at broader scales. Forests regulate hydrology, which influences rainfall, flooding, and groundwater recharge both locally (Ellison et al. 2017) and remotely (Arraut et al. 2012). Deforestation can induce warmer and drier conditions (Silvério et al. 2015), with grave implications for maintaining agricultural productivity (Lawrence and Vandecar 2014).

Over the decade since the idea of REDD+ first entered international climate negotiations, REDD+ initiatives have proliferated at global, national, subnational, and project scales, even while the concept itself continued to evolve (Seymour and Busch 2016). And although the key feature that distinguished REDD+ from prior efforts to reduce deforestation—the prospect of offering large-scale, results-based financing to developing countries as a reward for performance—has barely materialized,[1] the experiences of REDD+-branded initiatives in dozens of countries and hundreds of projects offer insights into what it will take to address deforestation in ways that are effective, efficient, and equitable.

PROGRESS OF NATIONAL AND SUBNATIONAL REDD+ INITIATIVES

While most REDD+ initiatives have so far failed to arrest and reverse deforestation trends, there is discernible progress toward intermediate milestones.
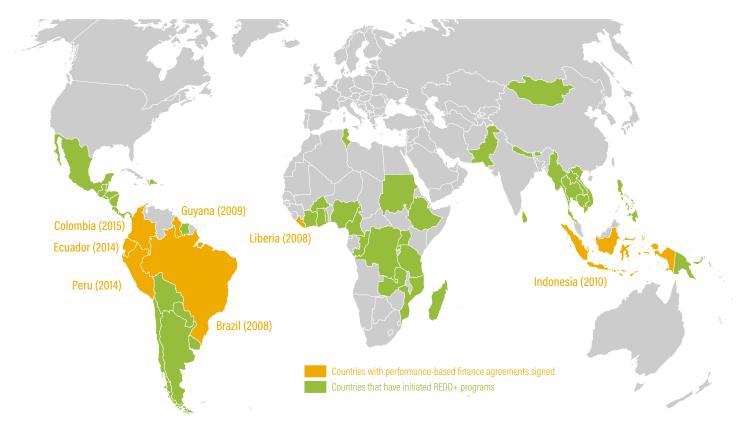
National REDD+ initiatives

An important characteristic of the REDD+ framework negotiated under the United Nations Framework Convention on Climate Change (UNFCCC) is its focus on the national level, with governments as the protagonists of forest-based climate change mitigation. While REDD+ was negotiated by governments, civil society actors and social movements played a key role in the debates (Santilli et al. 2005). A national REDD+ approach would reduce leakage (i.e., displacing deforestation to outside intervention areas), help avoid the high transaction costs associated with projects, and give developing countries greater control over their forest-based mitigation strategies (Skutsch et al. 2007). Moreover, a growing body of research shows that national-level policies are more important than localized projects for reducing overall deforestation rates (e.g., Angelsen and Kaimowitz 1999; Busch and Ferretti-Gallon 2017).

Following the concept's inclusion in the 2007 UNFCCC Bali Action Plan over 50 countries have initiated national REDD+ programs (see Figure 1). Most international funding has so far been used for so-called "readiness" activities—i.e., those that are focused on monitoring forests, increasing stakeholder participation in national planning and policy processes, and developing systems to safeguard against unintended, negative social and environmental consequences—with only a few countries having guaranteed access to results-based finance (Lee and Pistorius 2015).

International funding for readiness activities has improved the enabling conditions to tackle deforestation and forest degradation in several countries (Lee and Pistorius 2015). Achievements include a better understanding of deforestation drivers; stronger and improving forest monitoring capacities (Romijn et al. 2015); engagement

Figure 1 | **Countries with National REDD+ Programs**

Source: Adapted from Seymour and Busch 2016.

of stakeholders in national-level forest policy discussions; and improved policy coordination among national ministries involved in the governance of forestlands. In Colombia, for example, readiness finance contributed to putting forests on the national political agenda through interministerial coordination and national stakeholder engagement. This was emblemized by the government's pledge for zero net deforestation in the Colombian Amazon by 2020 (Streck et al. 2015), and a four-country partnership (between Colombia, Germany, Norway, and the UK) for results-based funding signed in November 2015. The Democratic Republic of the Congo (DRC) used readiness funds to develop its national REDD+ strategy, a national fund for REDD+ finance, and a platform for the participation of civil society, while improving its forest monitoring capacity (Johns 2015). In Ghana, REDD+ funding catalyzed cooperation between the forestry commission and companies engaged in cocoa production to promote climate-smart cocoa (Asare 2015). In Mexico, REDD+ funding was used to develop a forestry policy with rural development at its core, and to pilot sustainable management practices that can be scaled up in a national-level program (Bauche 2015).

Moving from the readiness to the results-based finance phase remains challenging. Brazil, Indonesia, and Guyana were the first recipients of firm commitments to results-based payments from Norway (i.e., aid for forest policies reforms or verified reductions in emissions), which played a role in REDD+ being integrated into national development policy (Norad Evaluation Department 2017). Brazil succeeded in reducing Amazonian deforestation by around 80 percent from 2004 to 2012, the result of a series of public policies (Soares-Filho et al. 2010) and private and sectoral measures that were initiated prior to the Memorandum of Understanding with Norway in 2008. Nevertheless, some have argued that the agreement with Norway helped consolidate the political will needed for continued progress (Seymour and Busch 2016). While the Amazonian deforestation rate remains far lower than when the bilateral agreement started, it has increased somewhat since 2012 (Moutinho et al. 2016). A 27 percent uptick in deforestation in 2015–16 compared to 2014–15, combined with a lower reference level consistent with rules established for the Amazon Fund, led to a reduction in performance-based payments from Norway in 2017 (Norway, Ministry of Climate and Environment 2017).

For Indonesia, REDD+ bolstered the indigenous rights agenda, as described in Box 1. In addition, it facilitated a number of important achievements—including a mora-

Box 1 | **REDD+ and the Indigenous Rights Agenda in Indonesia**

"We see REDD+ as an opportunity for [indigenous people] to be seen…. when you talk about forests you cannot escape talking about us."

—Mina Setra, Deputy Secretary General, Indigenous People's Alliance of the Archipelago (AMAN) in Indonesia, Center for Global Development podcast, 07 August 2014, www.cgdev.org/blog/surprising-indigenous-view-redd-mina-setra-and-frances-seymour

Indonesia's forest rights agenda has made considerable progress over the past ten years. REDD+ provided an opportunity to accelerate progressive changes, with Indonesia's landmark 2012 Supreme Court decision to recognize indigenous rights to forests (Decision MK 35) being the most prominent.

This progress has been enabled by several factors. Civil society organizations concerned with forest access and rights have been well organized in Indonesia since 1998,[a] and have featured prominently into the evolving REDD+ policy arena.[b] An open and transparent early REDD+ process facilitated by a national REDD+ Agency encouraged multi-stakeholder collaboration to design the national REDD+ strategy. While the overall REDD+ policy network was characterized by multiple actors and policy coalitions with often conflicting and competing interests[c] and often different understandings of equity,[d] safeguards and forest rights were consistently high on the REDD+ agenda.

Civil society organizations such as AMAN leveraged REDD+ to legitimize a social justice agenda, taking strategic advantage of REDD+ as a prominent multilevel policy formulation process. In 2012, the REDD+ Agency invited AMAN to submit maps of indigenous territories to be included in the moratorium map that year. Subsequently, AMAN won a Supreme Court decision (MK 35) that opened the door to government recognition of indigenous territories within state forest lands. Eighteen such territories had been recognized as of 2017.

In 2015, the opportunity to leverage the national REDD+ process to advance the indigenous rights agenda shifted when a new government dissolved the REDD+ Agency and subsumed REDD+ affairs into the newly created Ministry of Environment and Forestry.[e] In this process, the focus of REDD+ and forest rights was redirected to a revived "social forestry" agenda, which aims to devolve large areas of forestland to local communities. Previous social forestry programs have had mixed impact over the past decades,[f] granting communities increased responsibilities but only limited forest management rights.

While Indonesia's national REDD+ initiative initially provided an opening for indigenous groups to advance their territorial rights claims, it remains to be seen whether forward momentum can be maintained in the new political/bureaucratic context. Drawing lessons from critical examination of social forestry program experiences will be essential for REDD+ social safeguards to genuinely help protect indigenous and local rights.

Sources: a. Di Gregorio et al. 2012; b. Moeliono et al. 2014; c. Brockhaus et al. 2014; d. Di Gregorio et al. 2013; e. Korhonen-Kurki et al. 2017; f. Maryudi et al. 2012; Moeliono et al. 2017.
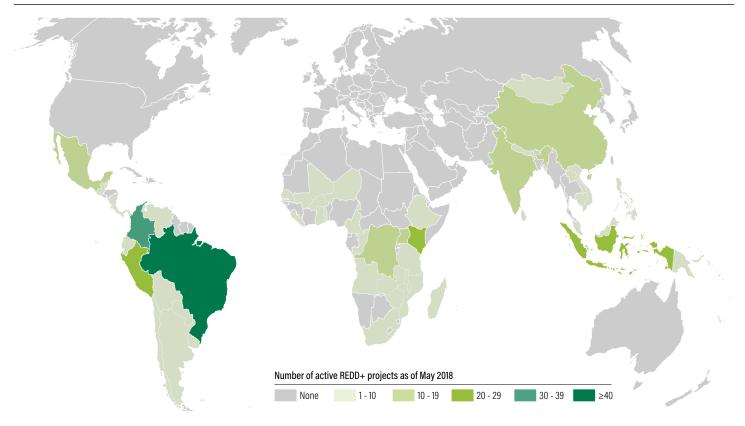
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torium on forest concessions, the "One Map" initiative to collect and harmonize spatial land use data, and progress on anticorruption measures (Seymour and Busch 2016)—although impacts on the deforestation rate are not yet discernible. In Guyana, REDD+ finance accelerated several key national forestry policies and supported tenure regularization of indigenous lands (Laing 2015).

There are clear examples of REDD+ bolstering forest governance through increased transparency and public participation, with the results-based payment aspect of REDD+ likely contributing to these outcomes (Seymour and Busch 2016). As of early 2018, nearly 20 countries had progressed to the carbon fund (i.e., results-based payment) phase of the Forest Carbon Partnership Facility (FCPF) given their development of national REDD+ strategies, their measurement, reporting, and verification (MRV) systems, and their environmental and social safeguards. National stakeholder involvement in FCPF processes has substantially raised in-country interest and understanding of the role forests play in climate change mitigation, ecosystem service maintenance, and land tenure issues.[2]

Subnational jurisdictional programs and local REDD+ projects

Although the UNFCCC ultimately agreed on REDD+ implementation at the national scale, the text that came out of the 2007 negotiations encouraged "demonstration activities," leading to more than 350 REDD+ projects across the tropics (see Figure 2). It is important to differentiate local REDD+ projects, which are predominantly implemented by nongovernmental organizations (NGOs) or for-profit companies with an orientation toward voluntary carbon markets (Simonet et al. 2015), from subnational jurisdictional REDD+ programs, which are led by government entities at state/provincial or municipal/district levels.

In contrast to projects, subnational jurisdictional REDD+ programs cover entire political jurisdictions, working across different land use types and including diverse stakeholders (Fishbein and Lee 2015; Stickler et al. forthcoming). The emergence of subnational governments as leaders in REDD+ was bolstered by the Governors'

Figure 2 | **REDD+ Projects Globally**

Number of active REDD+ projects as of May 2018

| None | 1 - 10 | 10 - 19 | 20 - 29 | 30 - 39 | ≥40 |

Source: Adapted from Simonet et al. 2015.

Climate and Forests (GCF) Task Force established in 2008, which recognized subnational jurisdictions as important sites of forest-based climate policy implementation, innovation, and learning (Boyd et al. 2018). The state of Acre in Brazil became the world's first jurisdictional REDD+ program through its State System of Incentives for Environmental Services, which was passed into law in 2010 (Alencar et al. 2012; Duchelle et al. 2014). Acre's REDD+ program, along with Mato Grosso's statewide REDD+ program, are supported by the German government's REDD+ Early Movers Program. Additionally, several municipalities/districts in Brazil and Indonesia piloted jurisdictional REDD+ programs (Gebara 2014; Guerra et al. 2014; Anandi et al. 2014). The Balikpapan Challenge introduced at the 2017 GCF Task Force annual meeting highlighted rights and livelihoods of indigenous people and local communities, sustainable commodities, and sustainable finance as key elements of subnational jurisdictional approaches to REDD+ and low emissions development (INOBU 2017). While subnational jurisdictional approaches hold promise, there has thus far been little rigorous assessment of the outcomes of these efforts (Boyd et al. 2018).

Since 2010, the Center for International Forestry Research (CIFOR) has evaluated the local impacts of 18 REDD+ projects in Brazil, Peru, Cameroon, Tanzania, Indonesia, and Vietnam, along with 5 jurisdictional programs in Brazil and Indonesia. Lessons on the effects of these early initiatives can inform design and implementation of future REDD+ policies and measures at higher levels. Five key lessons are summarized as follows:

First, although conditional payments were originally at the heart of REDD+, they have barely been applied by REDD+ implementers on the ground so far (Sills et al. 2014). Instead, activities labeled "REDD+" have included a diverse bundle of enabling measures, restrictions, conditional payments, and support for alternative livelihoods intended to achieve better protection of forests. Of this bundle, support for alternative livelihoods has been fundamental for enhancing well-being and helping alleviate the burden of land-use restrictions (e.g., through law enforcement, protected areas) associated with REDD+ (Duchelle et al. 2017).

Second, while these REDD+ projects and programs have had some effect in reducing local deforestation, the results are limited due to low treatment intensity (in other words, interventions of limited size and scope) and the heavy focus (especially in project-based approaches) on small-holders relative to larger, commercial agents of deforestation (Bos et al. 2017).

Third, it is clear that sensitive and complicated issues such as land tenure cannot be fully addressed at the project scale. For instance, while there is little evidence that REDD+ interventions have worsened smallholder tenure insecurity, there is also little confirmation that implementers' efforts to address tenure insecurity have produced results (Sunderlin et al. 2018).

Fourth, heterogeneity of smallholders and communities can create a trade-off between cost efficiency and equity in the distribution of REDD+ payments at the local level. Estimated opportunity costs per hectare of forest conserved vary greatly across households even at the same sites, with the opportunity costs to richer households substantially higher than to poorer households (Ickowitz et al. 2017). Differentiated pay based on opportunity costs could therefore imply less pay per hectare to the poorest households compared to those that are better off.

Finally, local populations' participation in the design and benefits of REDD+ initiatives that might affect their livelihoods is crucial if REDD+ is to be both effective and equitable (Myers et al. 2018). Yet it is extremely challenging to promote genuine participation in REDD+ initiatives that goes beyond passive consultation. Greater flexibility in initiative design and timeframe is required to provide sufficient space for local inputs (Sanders et al. 2017). While there are examples of REDD+ projects enhancing women's participation in village decision-making (Kariuki and Birner 2016; Sharma et al. 2017), there is also evidence that implementers could do more to promote gender equality and safeguard women's rights (Larson et al. 2018; Pham et al. 2017).

REMAINING CHALLENGES

For REDD+ initiatives to be successful, a transition away from business-as-usual deforestation is needed both within and beyond the forestry sector, and far beyond the policy domains of tropical countries where deforestation takes place (Brockhaus and Angelsen 2012). This section describes some of the challenges associated with that transition.

Realizing transformational change

Despite progress at the national level, forest-rich countries face challenges in effectively tackling drivers of deforestation and realizing "transformational change," which we

define as shifts in political discourses, economic incentives, and power relations that lead away from business-as-usual policy approaches that directly or indirectly support deforestation and forest degradation (Brockhaus and Angelsen 2012; Di Gregorio et al. 2012). For instance, the value of illegally traded timber alone may exceed the total value of all official development aid,[3] and large-scale investments in land conversion are ongoing in forest-rich countries.

Brockhaus et al. (2017) suggest that change in institutions is triggered by different combinations of institutional and actor-related factors. One factor that featured prominently in progress toward transformational change in the REDD+ policy domain was the presence of multi-actor coalitions calling for such change, as in Indonesia and Brazil (Korhonen-Kurki et al. 2014; Brockhaus et al. 2017). The strength of these coalitions varied considerably among countries, but nowhere did they become stronger than the voice of coalitions for business-as-usual, which had been long established (Di Gregorio et al. 2017; Brockhaus and Di Gregorio 2014). Available financial incentives accelerated REDD+ implementation if national ownership was present as well, as was the case in Brazil, Indonesia, and Guyana. However, national ownership can prove ineffective for transitioning away from the often large-scale drivers of deforestation if ownership is tied to those who represent powerful business-as-usual interests (see Cole et al. 2017 for Laos; May et al. 2016 for Brazil; and Brockhaus et al. 2017).

Addressing drivers

With a few exceptions, REDD+ initiatives have thus far failed to address the key underlying drivers of land use change. A growing evidence base shows how the drivers of deforestation are embedded in global and domestic commodity chains and investments in commodities such as beef, palm oil, soybeans, cocoa, timber, and pulp and paper (De Sy 2015; Austin et al. 2017; Henders et al. 2015). Brazil demonstrated early success in tackling large-scale drivers through a policy mix that was built on command-and-control interventions (Börner et al. 2015) and included global commodity chain actors (Gibbs et al. 2015). However, not all forest-rich countries aimed to address these drivers or to change the behavior of the domestic and transnational agents who benefitted most from deforestation. For instance, a review of 43 countries' REDD+ readiness documents found that proposed interventions did not match the identified large-scale, and often commodity-driven, drivers of deforestation. Instead,

most interventions fell under the categories of sustainable forest management, woodfuel efficiency, and agroforestry, and seemed to shy away from controlling large commercial actors with well-developed lobbying capacities (Salvini et al. 2014).

Since 2013, a cascade of voluntary "no deforestation" commitments were made by hundreds of consumer-facing manufacturers and retailers in the commodity supply chain, as well as a number of traders, producers, and financiers. Results from these voluntary initiatives at a measurable scale are so far lacking (Haupt et al. 2018), but some argue they could hold promise when combined with REDD+ and domestic finance in a jurisdictional approach to low emissions development (Nepstad et al. 2013).[4]

Integrating REDD+ across scales and sectors

Strategies for achieving REDD+ objectives are inherently multilevel, which poses important governance challenges (see Figure 3). Research on multilevel governance points to government weaknesses such as lack of strong and effective regulation (Rodriguez-Ward et al. 2018), as well as agents of deforestation negotiating with whichever government level will facilitate achievement of their goals (Kowler et al. 2016). Those engaged in REDD+ and seeking low emissions alternatives face numerous multilevel governance challenges, and struggle with high transaction costs (Gallemore et al. 2015). Coordination problems across levels and sectors include barriers to information sharing (Kowler et al. 2016), lack of clear responsibilities and sound channels of communication (Deschamps Ramírez and Larson 2017), and the failure to integrate local needs (Sanders et al. 2017). Those who deforest—such as agricultural and mining offices, private firms, and elites with special interests—may coordinate more effectively with one another than those seeking low emissions alternatives (Ravikumar et al. under review).
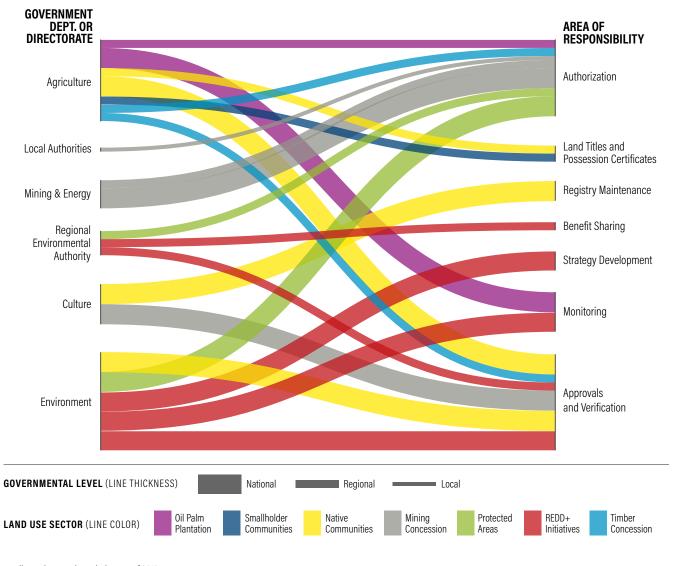
For subnational governments, decentralization policies and nested REDD+ approaches (i.e., integrated subnational and national levels of action) provide new opportunities for creative alternatives to business-as-usual to emerge, but they face barriers to innovation due to the national government's centralizing tendencies (Trench et al. 2018) and limited budgets and capacities (Libert Amico and Trench 2016). Policy makers and implementers supporting REDD+ need to recognize explicitly the political dimensions of land use governance (Rodriguez-Ward et al. 2018; Myers et al. 2018). They must pay greater attention to power and authority over territory, and underlying

interests and incentives for forestland conversion (Rodriguez-Ward et al. 2018).

Managing expectations

While REDD+ initiatives have resulted in important intermediate milestones as detailed above, the lack of major financial flows and outcomes to date in terms of reduced emissions from deforestation (with the partial exception of Brazil) has created frustrations at multiple levels. The international community failed to deliver on its promise to provide incentives sufficient to counter those that reward business-as-usual deforestation (Seymour and Busch

2016; Angelsen et al. 2017). Powerful coalitions' blockage of any major change away from deforestation is a major explanation for the failure of REDD+ initiatives to deliver nationally and internationally (Brockhaus et al. 2017). The limited scale of REDD+ implementation and its move toward development aid finance—which simply made it a version of previously piloted conservation efforts—are also problematic (Angelsen et al. 2017).

At the local level, REDD+ projects initially created high expectations, especially related to the prospects of substantial cash transfers, which never happened due to lack of predictable finance (Angelsen and Vatn 2016). As these

Figure 3 | **Complexity of Governance in a Subnational Jurisdiction in Peru**

Note: According to laws and regulations as of 2015.
Source: Based on Wieland Fernandini and Farfan Sousa, 2015.

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authors note, "For the villagers, it is another example of broken promises, which will make future forest conservation even more challenging" (Angelsen and Vatn 2016, 9). An important consideration is to limit shifting REDD+ burdens to the local level while the actual drivers of deforestation are operating at higher levels (Luttrell et al. 2018).

Operationalizing safeguards to make them more effective

Researchers and advocates have raised concern about the degree to which internationally agreed REDD+ safeguards can be translated into meaningful in-country protections, particularly those related to rights, participation, and social co-benefits. National REDD+ safeguards are framed by existing legal interpretations of the rights of indigenous peoples and local communities, as well as varying political sensitivities related to these populations; this presents particular challenges in countries such as Vietnam, where human rights and democracy are politically sensitive issues (Pham et al. 2015). From a measurement standpoint, clear rules and guidance do not exist for assessing the social performance of REDD+ (Duchelle et al. 2015).

Effective safeguards monitoring will rely on leveraging and improving upon ongoing data collection efforts, with performance indicators carefully chosen to reflect national and subnational conditions. While there is potential to hold REDD+ safeguards to more rigorous standards, there is limited ability to operationalize safeguards related to tenure security and participation, since data for these indicators is not collected in national surveys (Jagger and Rana 2017).

EVIDENCE GAPS AND AREAS OF CONTROVERSY

Self-inflicted confusion around the REDD+ concept

Different stakeholders' interpretations of REDD+, often based on promotion or skepticism of market-based approaches to achieving emission reduction targets, create confusion. In fact, the concept of REDD+ as a market-based instrument no longer represents reality, since a global carbon market—of which REDD+ was to be an integral part—never materialized (Angelsen et al. 2017). There is a clear difference between REDD+ as an offset mechanism (which was a prominent idea prior to 2009) versus REDD+ as an objective to reduce forest-based emissions; but these ideas are still used interchangeably. While international REDD+ transactions are emerging,

through the FCPF carbon fund example, as mentioned earlier, some of the skepticism toward REDD+ is based on early ideas that were never tested or implemented.

REDD+ and rights

The debate continues over the impact of REDD+ on indigenous land rights. On the one hand, the emergence of REDD+ brought new attention to preexisting rights concerns (see Box 1) and provided opportunities for the rise, in some cases, of legal norms to protect the rights of indigenous peoples—although with greater positive impact on participatory than substantive rights (Jodoin 2017). On the other hand, in some cases, REDD+ initiatives' failure to address substantive rights, or to implement free, prior, and informed consent (e.g. Saeed et al. 2017), contravenes international human rights conventions, such as the United Nations Declaration on the Rights of Indigenous Peoples (Sarmiento Barletti and Larson 2017).

As would be the case with any intervention related to forests, REDD+ is framed within country-specific legal systems and histories that often include longstanding discriminatory and exclusionary practices, so national REDD+ safeguards may not always protect indigenous citizens (Sarmiento Barletti and Larson 2017). Experience from subnational, jurisdictional REDD+ approaches shows potential for increasing REDD+ benefits to indigenous peoples and local communities by prioritizing engagement with traditional forest guardians (DiGiano et al. 2016). Recognizing indigenous peoples and local communities as substantive rights-holders (rather than project beneficiaries) can help place them at the center of forest and climate initiatives (Sarmiento Barletti and Larson 2017).

More learning is needed before labeling REDD+ a success, fad, or failure

To date, research on REDD+'s impacts on the ground has not yet matched the importance of REDD+ in terms of scope, depth, and analytic sophistication, resulting in insufficient empirical evidence to inform future efforts. The variety of policies, programs, and interventions labeled "REDD+" presents large methodological challenges and makes it difficult to draw generalized conclusions. A review of the recent scientific literature highlights a lack of rigorous evaluation of REDD+ impacts, relatively little attention to carbon outcomes, and small or insignificant noncarbon outcomes when measured (Duchelle et al. under review). In particular, the small number of agreements for significant performance-based finance at the

jurisdictional level precludes a definitive judgment on the efficacy of REDD+'s core promise.

CONCLUSIONS AND NEXT STEPS

REDD+ has evolved since its inception with: an early proliferation of local REDD+ projects superseded by the national-level focus ultimately agreed to by international negotiators, and subsequent advances by several subnational jurisdictions; a mechanism with a carbon emission reduction objective aiming to encompass broader sustainable development objectives in its implementation; inadequate funding from the international community following the failure of anticipated carbon markets to materialize; and the core results-based payments approach being lost in the face of "aidification" (i.e., the fact that REDD+ has been predominantly funded through low levels of overseas development aid), along with the lack of certainty that performance will generate payment (Angelsen and McNeill 2012; Seymour and Busch 2016). Given these changes, we lay out the following actionable points in moving forward:

Encourage international and national ambition while building on subnational progress and lessons. More effort is needed to effectively tackle the large-scale drivers of deforestation. While there are new commitments by governments and private sector actors through jurisdictional approaches at national and subnational levels, increased transparency can hold actors accountable to their promises (Boyd et al. 2018). New information on drivers and benefit flows from deforestation can also inform rich countries' policies, such as the Norwegian pension fund's divestment from unsustainable palm oil companies (Norges Bank 2014). Such actions will be particularly important for countries promoting REDD+ to ensure credibility and policy coherence in their efforts to halt deforestation.

Forest-rich developing countries can substantially raise ambition toward planning for and achieving REDD+ in their nationally determined contributions (NDCs), tackling the drivers of deforestation and forest degradation. As demonstrated by Brazil's success story, such strategies should include rigorous implementation of forest law, sustainable commodity supply chains, and viable alternatives for those who base their livelihoods on forests. To make this happen, greater co-responsibility is needed from the international community beyond the few countries that have stepped forward with significant pledges of REDD+ finance. Given the ecosystem services and climate benefits that forests provide, along with their key role in

rural development, forest protection should be globally supported through increased financial flows to forest-rich developing countries.

Finally, it is critical that REDD+ initiatives emphasize larger programmatic reforms and transformational change rather than project approaches, which cannot adequately address the agents and drivers of deforestation (Korhonen-Kurki et al. 2017). At the same time, it is essential to "upscale" lessons from local activities on how different types of interventions (e.g., restrictions, incentives, alternative livelihood support) affect forests and local well-being for use in designing and implementing higher-level REDD+ policy mixes.

Make real progress on safeguards, with clear links to the United Nations' Sustainable Development Goals (SDGs). Safeguards deserve more in-country ambition. REDD+ safeguard principles—such as maintaining transparent governance, respecting local rights, and promoting environmental and social co-benefits—are at the heart of the SDGs, including those focused on reducing poverty, achieving gender equality, reducing inequalities, promoting life on land (e.g., biodiversity conservation), and facilitating peace, justice, and strong institutions. At a minimum, as countries build REDD+ safeguard information systems, technical advances in the use of appropriate indicators, data collection methods, and reporting frameworks for monitoring and evaluating REDD+'s social (and environmental) performance are needed (Jagger and Rana 2017). A more ambitious goal is for countries to genuinely enhance the rights, participation, and livelihoods of indigenous peoples and local communities, including women, through links to national development and green growth plans, and in alignment with international rights conventions and the SDGs.

Leverage domestic finance for forests. There is an urgent need to promote new sources of financing for forests, with several promising national-level initiatives underway. In 2014, India created the first ecological fiscal transfer for forests by including forest cover in the formula to determine how much tax revenue the central government will distribute to states annually; this value is substantial, estimated to be US$6.9 to 12 billion annually from 2015 to 2019 (Busch and Mukherjee 2017). There are also emerging opportunities in Colombia and Indonesia in terms of their respective carbon tax and green bonds programs, and innovations in domestic rural finance, as seen through Brazil's innovative low-carbon agricultural credit program (Nepstad et al. 2013). New sources of interna-

tional financing could complement such domestic fiscal policies (Seymour and Busch 2016; Seymour et al. 2018).

Test out results-based funding. The technical and sociopolitical challenges involved in creating and implementing a results-based payment system—which was REDD+'s initial and novel idea—were vastly underestimated. There are opportunities to learn from other forms of results-based aid, such as that agreements must be backed with credible funding, and not all REDD+ finance should be performance based (Angelsen 2017). Incentives for intermediate outputs—such as policy performance, and not only carbon/emissions-related payments—are critical to foster ownership and more equitable sharing of costs and risks, which are important enabling factors for policy reform (Wong et al. 2016).

In conclusion, conserving tropical forests is essential to meeting climate and development objectives, and REDD+ has served as a testing ground for multiple approaches to addressing this challenge. Deforestation and forest degradation, however, are deeply rooted in powerful business-as-usual interests, and progress has been slower than expected. More learning is needed about REDD+ implementation and outcomes at national and subnational levels before labeling REDD+ a fad or failure and moving on to the next big idea (Angelsen et al. 2017). The novel feature of REDD+—results-based payments at jurisdictional scales—remains largely untested. Yet REDD+ helped create a global alliance for forest protection that encompasses tenure and rights, public-private partnerships, and increased monitoring and transparency, which is also novel compared to previous conservation efforts. Through progress in many tropical countries, we know more about the problem of deforestation and forest degradation, and elements of the solution, than ever before. Now is the time to mobilize that knowledge through action by rich and forest-rich countries alike.

ABBREVIATIONS

CIFOR	Center for International Forestry Research
DRC	Democratic Republic of the Congo
FCPF	Forest Carbon Partnership Facility
GCF	Governors' Climate and Forests Task Force
MRV	measurement, reporting, and verification
NDC	nationally determined contribution
SDG	Sustainable Development Goal
UNFCCC	United Nations Framework Convention on Climate Change

ENDNOTES

1. For more on this topic, see the companion paper in this series, "REDD+: Global Architecture, Standards, and Finance" (Seymour et al. 2018).

2. Stolle, Fred. 2018. Correspondence between the authors and Fred Stolle, WRI Senior Associate. April 30.

3. For more on this topic, see the companion paper in this series, "Assessing the Timber Legality Strategy in Tackling Deforestation: Accomplishments and Remaining Challenges in Addressing Illegal Logging and Associated Trade" (Barber and Canby 2018).

4. These issues are treated at greater length in the companion papers in this series, "The Elusive Impact of the Deforestation-Free Supply-Chain Movement" (Taylor and Streck 2018) and "Jurisdictional Approaches to REDD+ and Low Emissions Development: Progress and Prospects" (Boyd et al. 2018).

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Our Challenge

Natural resources are at the foundation of economic opportunity and human well-being. But today, we are depleting Earth's resources at rates that are not sustainable, endangering economies and people's lives. People depend on clean water, fertile land, healthy forests, and a stable climate. Livable cities and clean energy are essential for a sustainable planet. We must address these urgent, global challenges this decade.

Our Vision

We envision an equitable and prosperous planet driven by the wise management of natural resources. We aspire to create a world where the actions of government, business, and communities combine to eliminate poverty and sustain the natural environment for all people.

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COUNT IT

We start with data. We conduct independent research and draw on the latest technology to develop new insights and recommendations. Our rigorous analysis identifies risks, unveils opportunities, and informs smart strategies. We focus our efforts on influential and emerging economies where the future of sustainability will be determined.

CHANGE IT

We use our research to influence government policies, business strategies, and civil society action. We test projects with communities, companies, and government agencies to build a strong evidence base. Then, we work with partners to deliver change on the ground that alleviates poverty and strengthens society. We hold ourselves accountable to ensure our outcomes will be bold and enduring.

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We don't think small. Once tested, we work with partners to adopt and expand our efforts regionally and globally. We engage with decision-makers to carry out our ideas and elevate our impact. We measure success through government and business actions that improve people's lives and sustain a healthy environment.