Early Lessons from Jurisdictional REDD+ and Low Emissions Development Programs

Greg Fishbein and Donna Lee

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CONTENTS

List of Acronyms

(BFCP) Berau Forest Carbon Program

(CAR) the Rural Environmental Registry system (Brazil)

(CONAFOR) National Forestry Commission (Mexico)

(DRC) Democratic Republic of the Congo

(ER-PD) Emission Reductions Program Document

(ER-PIN) Emission Reductions Program Idea Note

(ERPA) Emissions Reduction Purchase Agreement

(FCPF) Forest Carbon Partnership Facility

(INPE) National Institute for Space Research (Brazil)

(LED) Low Emissions Development

(MRV) Measuring, Reporting and Verification

(ODA) Official Development Assistance

(PEPY) the Special Program for the Yucatan Peninsula (Mexico)

(PPCDAM) Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (Brazil)

(SAGARPA) Ministry of Agriculture, Livestock, Rural Development, Fisheries, and Food (Mexico)

(SISA) Environmental Service Incentive System (Acre, Brazil)

EXECUTIVE SUMMARY

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In recent years there has been increasing support for establishing successful models of REDD+ and low emissions development (LED) efforts at a jurisdictional scale. Jurisdictional efforts were designed to overcome the shortcomings of project-based approaches by working across land-use types and with multiple stakeholders to create models for national implementation. This study analyzes some of the most advanced REDD+/LED initiatives worldwide—including a critical look at the success and challenges to date—to understand what is needed to succeed going forward. We studied eight diverse jurisdictions: Acre, Brazil; Berau, Indonesia; Ghana's cocoa ecoregion; Mai Ndombe, Democratic Republic of the Congo (DRC); San Martín, Peru; São Félix do Xingu, Brazil; the Terai Arc, Nepal; and the Yucatan Peninsula, Mexico.

Overall, we find that subnational jurisdictional programs are critical building blocks for national success; however, working at this ambitious scale greatly raises the bar on the challenges. Most programs studied are still in the early stages of achieving their goals, and almost all face important gaps in human and technical capacity despite significant investments. Future success requires that forest countries see a compelling value proposition to embrace a forest-friendly development model as compared to business as usual development pathways. Finance and incentives need to be designed to reinforce and support sustainable approaches—particularly in-country sources such as agricultural subsidies, rural development programs, and tax policies. Results-based finance and supply chain approaches offer important opportunities to help advance REDD+/LED programs, but each has limitations and is unlikely to solve the problem on its own. Following is a summary of the key conclusions of the study.

What have we learned from jurisdictional programs?

The study of eight jurisdictions suggests focused attention at the jurisdictional scale is compelling and should continue. Jurisdictional programs have critical benefits—they provide an opportunity to engage governments to align policy and enforcement strategies, plan across multiple land-use types, collaborate among a broad range of stakeholders, implement credible measurements of deforestation and forest carbon emissions, and achieve results at a more manageable scale than the national level. At the same time, few subnational programs can succeed in isolation without strong national-level commitment and support. And initiating site-level activities early in the program, in parallel with policy reforms and enabling conditions, is important to test innovative approaches, create

visible outcomes, build alliances, and maintain momentum among key constituencies.

The appropriate scale for a jurisdictional program depends largely on the country context, including where authority for land-use decisions resides, the capacity and resources available at different scales, the feasibility of working at larger jurisdictional scales, and the ecological and economic relationship of forest areas. Working at the largest subnational scale is not always the best approach, but jurisdictions should also be large and diverse enough to serve as representative models for broader national action.

Most jurisdictional programs draw from a common "menu" of strategies, with greater emphasis on those that offer the greatest opportunity for change in that context. Approaches vary based on several factors, including the nature of commodity production (e.g., the extent to which products are sold into environmentally sensitive markets), the land management regime (e.g., community-based versus large commercial holdings), and the policy framework available to drive sustainable management.

Jurisdictional programs are long-term endeavors that require patience and long-term commitments. Most of the jurisdictions studied, with the exception of those in Brazil, are at the design or early implementation stage, with limited results to date in reducing deforestation. Subnational approaches involve complex relationships among multiple stakeholders—national and subnational governments, local communities, private land and concession holders, and others—and require ongoing coordination across sectors. All the jurisdictions we studied cited a lack of capacity (human, technical, and financial) as among their top challenges. Political and bureaucratic turnover was widely cited as an ongoing problem. Designing and implementing jurisdictional programs also requires changing the way people think about rural development. Realistic expectations regarding the pace of change and investments in long-term outcomes are critical.

Political leaders and land managers require a compelling value proposition to change course—and many do not have one yet. Not all leaders have embraced low emissions development and protecting natural capital as a route to achieving economic *and political* goals. Although we may hear progressive ideas from leaders in environmental ministries, or even from heads of political jurisdictions, including national leaders, the reality of land-use decisions continues to be largely driven by near- to medium-term economic considerations such as household income, industrial growth, jobs, and tax revenues. In addition, political and other leaders are motivated by a variety of complex interests which are hard to understand from afar and often go beyond simple monetary flows or access to commodity markets.

The value proposition is also an issue for producers on the ground, where it can be difficult to convince farmers or ranchers to change the ways they have managed their land for decades. There is a need to create economic models that demonstrate to farmers that they will be better off using more sustainable practices, to provide extension support at large scale, to finance the transition to sustainability, and, where possible, to offer enhanced market access.

Early examples of slowing deforestation are encouraging, for example, through domestic policies and community green growth strategies. Supportive policies and enforcement have been the primary driver of success in Brazil and will be critical for any jurisdiction to effectively reduce emissions. Empowering communities to manage natural resources consistent with their long-term development visions has also helped to slow deforestation in many locations, including places where community land tenure remains unclear.

What do these lessons mean for the future of REDD+/LED success?

We need to move from the original payment for opportunity-cost approach to a transformational development model. Early conceptions of REDD+ as a means to compensate countries and pay actors their "opportunity costs" do not address the need to transform the development paradigm and may perpetuate dependencies on external financing. The starting point must be for countries to view protection of high-value forest systems as integral to achieving their long-term development goals, and to see climate finance and other incentives as a catalyst of that sustainable development pathway. Ownership of this shared REDD+/LED vision by political leaders and other key stakeholders is essential to program success.

Jurisdictions need "packages" of financing and incentives to encourage and support the pursuit of low-emissions development pathways. The right package will need to be tailored to support the shared REDD+/LED vision of the key stakeholders in the jurisdiction, and requires flexibility, innovation, and alignment among funding mechanisms.

- While official development assistance (ODA) has provided a large share of funding to date for the programs studied,

in the future these jurisdictions see in-country finance and incentives such as domestic subsidies and rural assistance programs as the most important driver of change. Forest country governments will need to be open to reforming in-country funding and policies to align with sustainable development goals. At the same time, ODA can help to bridge the capacity gap recognized as the largest barrier to success, as well as assisting with early implementation.

- Sustainable supply chain incentives are seen as valuable, but limited due to the significant opportunities for producers to sell into non-discriminating markets, and the fact that many rural economies are based on small-scale agriculture not connected to global commodity markets. Corporations, governments, and civil society will need to evolve sustainable supply chain approaches so they work toward landscape outcomes.

- Results-based finance is potentially a new source of incentives that can help build political will and drive change. Such finance based on carbon emission reductions is an internationally recognized concept, and is an important tool being tested through initiatives such as the Forest Carbon Partnership Facility (FCPF) Carbon Fund and bilateral agreements funded by the governments of Norway and Germany. In addition to carbon-based finance, donor and forest country governments may also consider testing alternative approaches such as directly rewarding proxies of performance, as in some cases, particularly at the subnational level, carbon-based payments can be highly technical and hard to understand for political leaders and other constituencies. Rewarding proxies can contribute directly to reducing emissions, be simpler to implement, and may better respond to the interests of key actors.

With the appropriate investment and support, jurisdictional REDD+/LED programs have the potential to become transformational models of forest-friendly development. Creating a new development pathway takes time and requires building political will, making transitional investments, improving cooperation across sectors and stakeholder groups, and facilitating cultural shifts to change practices. In all the jurisdictions we studied, however, value propositions are emerging that promote rural development, maintain natural capital, and enhance market competitiveness. Early indications suggest that a transformative shift is possible—one that can provide substantial benefits to people and the environment.

Top ten things not to do

While our conclusions offer recommendations for what we might collectively "Do", we also offer a few thoughts related to things not to do.

Don't...

1. Assume we know what motivates political leaders and other key stakeholders to change behavior, without a careful analysis and understanding of the context.
2. Invest most funding into REDD+ planning and "readiness" (e.g. MRV, safeguards, etc.) and expect political leaders to maintain interest and momentum.
3. Offer largely results-based finance to low-capacity countries, jurisdictions or local stakeholders and expect them to perform.
4. Look to REDD+ payments or corporate supply chains as the sole solution to the problem.
5. Underestimate the problem of political and bureaucratic capacity and turnover in countries.
6. Expect results to be achieved too quickly.
7. Assume that REDD+/LED is cheap.
8. Create a model based on paying actors indefinitely to change behavior.
9. Expect others to take risks but not take risks yourself.
10. Lose optimism.

1. INTRODUCTION

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1.1 Objectives of the report

The international community is increasingly supporting REDD+ and low emissions development (LED) efforts *at a jurisdictional scale*.[1] In other words, there is increasing interest and support for programs that aim to reduce forest-related emissions at the scale of large landscapes and that involve multiple land uses and stakeholders, typically encompassing a national or subnational political jurisdiction. Jurisdictional efforts are considered larger than projects, which are typically discrete interventions in one or two land types. A jurisdiction may be an entire country but is often a subnational entity or grouping of entities, as is the case with the examples researched in this study.

Interest is growing in establishing successful models in the near to medium term of such large-scale approaches. Multiple jurisdictional efforts are emerging, along with funding commitments that aim to achieve forest and land-related emission reductions at this scale. The objective of this study was to analyze several emerging jurisdictional programs and through a comparative analysis answer key questions, including:

- What are the benefits and drawbacks of taking a jurisdictional approach?
- What has worked so far, and why?
- What are the key challenges that jurisdictional-scale approaches face?
- What incentives are most effective for jurisdictional programs?
- Finally, what can we learn from the progress made to date?

We hope this study provides practitioners with examples of the broad range of models being pursued, challenges being faced, and opportunities available for emerging jurisdictional programs. In addition, the study aims to provide those with interest in REDD+ and LED programs with insights into the dynamics and realities on the ground, and the key needs as well as benefits of jurisdictional programs.

1 REDD+, which was the initial framing of all of the programs studied, stands for reducing emissions from deforestation and forest degradation, conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks. Many programs now characterize themselves as "low emissions," "sustainable," or "green development" programs in addition to, or instead of, only REDD+. We use REDD+/LED to refer broadly to programs that are pursuing a sustainable, forest-friendly development pathway and may be seeking incentives and investment from REDD+ payments or other sources. "Jurisdictions" in this study generally refers to subnational political jurisdictions, although the term can also refer to a natural or biophysical jurisdiction (such as an ecoregion as in the case of Ghana).

1.2 Approach and organization of the report

For this report, we study eight jurisdictions, which were chosen to reflect a broad range of experiences, geographic diversity, and level of economic development. We also selected jurisdictions based on the progress they have made in designing and starting to implement REDD+/LED programs. All the locations with the exception of Acre are places where The Nature Conservancy (TNC) or the Forest Carbon Partnership Facility (FCPF) Carbon Fund supports program development, thus facilitating access to information and program participants. The eight programs are:

1. Acre, Brazil
2. Berau, Indonesia
3. Cocoa Ecoregion, Ghana
4. Mai Ndombe, Democratic Republic of the Congo
5. San Martín, Peru
6. São Félix do Xingu, Brazil
7. Terai Arc, Nepal
8. Yucatan Peninsula (States of Campeche, Quintana Roo, and Yucatan), Mexico

Each jurisdiction has its own unique national context, and at times we refer to national government policies, actions, and efforts where they have affected the jurisdictions. Particularly in Brazil, national government policies and enforcement mechanisms have provided strong incentives for subnational level actions.

The content of this report is largely based on information provided by practitioners working directly in, or with, the jurisdictions. It involved desk top review of available documentation, site experience with nearly all jurisdictions by the authors or key contributors, and telephone and in-person interviews with key program sponsors and stakeholders to gain insights on the issues and challenges each jurisdictional program faces. In addition, an on-line survey was conducted.

Section 2 of the paper contains key **observations** from practitioners on the following topics:

a. Stage of development: What is the status of jurisdictional programs, i.e. how much progress has been made to date?

b. Approaches: What do jurisdictional programs look like? What are the key similarities, differences, and emerging models?

c. Benefits and risks: What are the advantages of working at jurisdictional scale, as well as the drawbacks?

d. Past elements of success: What is working so far?

e. Present challenges: What barriers inhibit jurisdictions from pursuing large-scale forest emission reduction programs?

f. Incentives for the future: What incentives are being pursued by each program, and what are viewed as the most important incentives for future REDD+/LED success?

Section 3 then provides our **conclusions**, based on the observations, including implications for program design and future financing and incentives for REDD+/LED programs.

Finally, we note that each jurisdiction's unique origins and context makes a cross-comparison difficult. Not all the observations apply to all the jurisdictions, but we try to highlight those that appeared to be generally the case in most of them.

2. OBSERVATIONS

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2.1 Stage of development: Jurisdictional approaches are only just emerging

Most jurisdictional REDD+/LED programs are at the design or early implementation stage, with limited demonstrated results to date in reducing deforestation, degradation and associated emissions at significant scale. Preparation for a REDD+/LED program is an important, but time consuming, effort. Most countries and jurisdictions begin with a "readiness" process, which itself can take several years to initiate, line up political interest, build the necessary technical capacity, understand drivers of deforestation and degradation, design strategies, manage stakeholder consultations, and create institutional structures (if needed) for a program to reduce emissions at scale.

Exceptions to this early stage include Acre and São Félix do Xingu, both of which have generated positive results (see Annex). Acre started its jurisdictional REDD+/LED efforts in the late 1990s and therefore has been engaged in low emissions development efforts for over 15 years. In addition, both Acre and São Félix do Xingu are in Brazil, where strong national leadership to stop deforestation has been critical for success.

Starting points of the jurisdictions studied differ, and having a history of forest conservation or strong institutional capacity can make a difference in the time it takes to get results. In Brazil, the Rural Environmental Registry (CAR) system—essential to ensuring that land holders maintain their forests—could only be implemented because of deforestation tracking advances that date back to 1988, when the Brazilian space agency implemented deforestation monitoring at the scale of the entire Amazon. Another example is Nepal, which has been engaged in forest conservation for over two decades and can build on not only its experience but also the institutions created over this time period—including government, community, and participatory structures.

Site-level strategies are being implemented in parallel with strategies to build jurisdiction-wide enabling conditions, and offer opportunities for early progress and innovation at smaller scales. Enabling strategies include, for example, policies, land-use planning, and enforcement, while site-level strategies include activities such as enhancing the sustainability of commodity production, community development, or protected area management**.** These site-level activities are important building blocks for REDD+/LED programs and can help to demonstrate feasibility before scaling up such actions.

Timelines of jurisdictional programs: Three examples from Acre, Berau, and the Yucatan

Acre's transformation began in the 1980s, when rubber tapper Chico Mendes started a movement to curb deforestation; his murder by cattle ranchers in 1988 helped to launch the Workers' Party, which Mendes and his union brought to Acre, into power. The new political movement began shifting Acre's economy to a sustainable model that supported forest protection, known as "Florestania." In 2001, it passed legislation instituting its State Forest Policy, in 2007 an Economic and Ecological Zoning Plan, in 2009 the Policy for Valuing Forest Environmental Assets, and in 2010 the State Environmental Service Incentive System.

The Berau District Government first got involved in REDD+ when attending COP-13 in Bali (December 2007). Scoping for the Berau Forest Carbon Program (BFCP) began in 2008, along with the establishment of the Berau REDD Working Group. In 2009, a multi-stakeholder Joint Working Group was formed that included representatives from district, provincial, and national level governments, the private sector, and civil society. Throughout 2009–2010, the program refined strategies for the BFCP including activities to reduce deforestation and degradation, analysis of legal issues, development of a monitoring approach, gaining stakeholder support, creating a business plan, and identifying funding sources. In 2011, the program began to test site-based strategies (e.g., improved forest management, community green growth models) and continues to pilot such activities. The Government of Indonesia has put Berau forward as a potential district (among others) to participate in the FCPF Carbon Fund. Several strategies, including the community development work, are beginning to scale across the district, and other strategies are expected to begin scaling by 2016.

The three states of the Yucatan Peninsula (Campeche, Quintana Roo, and Yucatan) signed an agreement to develop a joint approach to REDD+ in December 2010 (during COP-16). The following year they developed a regional REDD+ strategy. In parallel, Mexico developed its Vision for REDD+ (2010) and adopted a Climate Change Law (2012) that includes a 2020 net zero deforestation goal. In 2014, Mexico was admitted into the FCPF Carbon Fund pipeline, putting forward five states—including the three states of the Yucatan—in its Emission Reduction Program Idea Note (ER-PIN). It expects to submit an Emission Reduction Program Document (ER-PD) in 2015.

Six jurisdictions included in our study (all but the two Brazilian cases) have been admitted into the FCPF Carbon Fund pipeline based on preliminary plans (the ER-PIN[2]). These jurisdictions will still need to create full program plans (ER-PDs[3]), expected to take a year to 18 months, and thereafter advance implementation. Therefore most are still some distance from demonstrating measurable results and accessing results-based finance.

2 An Emission Reductions Program Idea Note (ER-PIN) is the preliminary plan submitted by forest countries to the FCPF Carbon Fund for consideration to be accepted into the Carbon Fund pipeline and invited to further develop the idea into an Emission Reductions Program.

3 An Emission Reductions Program Document (ER-PD) documents the full-fledged program design. It is required before entering into an Emissions Reduction Purchase Agreement (ERPA) with the Carbon Fund.

Examples of the testing of site-based activities

- The Berau Forest Carbon Program has created and tested a model in two villages for community engagement in REDD+ and "village green development." These models are being replicated in 14 villages and will be expanded further across Berau; in addition, Berau is testing performance incentives for timber concessions that implement reduced impact logging practices; one Forest Management Unit has been established and three more are in planning stages; several small new protected areas have been established to protect locally valuable natural capital.
- São Félix do Xingu is testing models of intensified ranching with 18 farms representing 47,000 hectares and hopes to scale up to 223 properties in the near future; if successful, such practices could be promoted with the 1,500 farms that exist across the jurisdiction.
- In the DRC, the Forest Investment Program is supporting the development of management plans for communities to replace slash and burn practices with intensified agriculture and expanded use of deforested or degraded lands, which can provide a model for expected activities in the Mai Ndombe region.
- In the Yucatan Peninsula, several coordinated initiatives—including the Special Program for the Yucatan Peninsula (PEPY), Forest Investment Program, and a USAID program called M-REDD+—are implementing improved practices in farming, ranching, and forestry on over 3 million hectares to develop proven models for reducing deforestation that will be prioritized for support within the jurisdictional program.

Some jurisdictions see a risk of stakeholders losing interest and enthusiasm for a program if they are not seeing activity on the ground. In this regard, planning, or analyzing problems and issues, in the absence of starting concrete activities, can hamper longer-term objectives. Site-based efforts, if well connected to the broader jurisdictional or national REDD+/LED processes, can not only help to maintain momentum in a jurisdiction or country but can also provide empirical experience and inform analysis, which should follow action on the ground in an iterative fashion.

But in most cases there is still a lot of work to do before reaching concrete results, such as a significant measured reduction in emissions (see historical deforestation data in Annex). In most cases concrete operational plans and implementation have not yet started at a large-scale in the REDD+/LED programs studied. Therefore most jurisdictions have yet to systematically address the drivers of deforestation and degradation or identify the underlying resources that will be required for implementation. In addition, the institutional arrangements—in particular for the coordination and management of activities to reduce deforestation—in many cases are still not clear (or created).

2.2 Approach: A variety of strategies are emerging to respond to local circumstances

A wide variety of jurisdictional approaches are being created. Most jurisdictional programs draw from a common "menu" of strategies. No program relies on just one or two strategies—they all incorporate a mix of strategies, with greater emphasis on some versus others depending on the characteristics of the jurisdiction. The strategies employed include both site-based and enabling strategies. For example:

- Implementing sustainable agricultural/ranching practices;
- Improving forest management—for example, reduced impact logging and fire management;
- Scaling up community-based approaches such as community forestry;
- Improving land-use planning, from the village to landscape level;
- Aligning public policies, including legal reforms, regulations, enforcement, and use of fiscal instruments;
- Developing multi-stakeholder processes to shape the design and direct the programs.

TABLE 1: Drivers of deforestation and forest degradation and key strategies to address them

Jurisdiction	Drivers	Key strategies
Acre, Brazil	Cattle ranching, cacao, mining, population growth, illegal and over-harvesting of wood	In addition to a suite of laws that promote sustainable practices, in 2009 Acre passed a law that created an Environmental Service Incentive System (SISA) that provides incentives for reducing emissions from deforestation and forest degradation.
Berau, Indonesia	Conversion to oil palm and timber plantations, commercial logging, coal mining activities, swidden-fallow agriculture	Berau is combining an improvement in enabling conditions (integrated land-use planning, improved governance, stakeholder engagement) with scaling up site-level activities such as community-based approaches, certified timber and reduced impact logging, and a sustainable oil palm strategy.
Cocoa Ecoregion, Ghana	Expansion of cocoa has been the predominant driver over the past century; recently mining, illegal and over-harvesting of wood, population growth	Ghana's program is defined by the region's main source of income and driver of deforestation: cocoa. The focus is on changing cocoa farming practices, providing better access to inputs and insurance to farmers, reforming tree tenure to provide ownership to land managers, and implementing landscape-level planning and improving enforcement.
Mai Ndombe, Democratic Republic of the Congo (DRC)	Wood energy and charcoal, slash-and-burn agriculture, uncontrolled bush fires, industrial and artisanal illegal logging, expected new roads	The DRC plans to engage forest concessionaires in Mai Ndombe to incentivize improved forest management practices, create land management plans for over a thousand communities, increase plantation forests to meet timber and fuel needs, and implement improved agroforestry practices including fire management.
San Martín, Peru	Small-scale agriculture and ranching, logging, commercial crops (coffee, cacao, and oil palm), infrastructure development, and mining	San Martín is taking an integrated sustainable landscapes approach, including: strengthening enabling conditions to improve the control of forest land; development of innovative sustainable forestry management, agroforestry, and silvopastural business models; and strengthening of technical and management capacities of the regional authorities, local governments, indigenous communities, producers, civil society organizations, and the business sector.
São Félix do Xingu, Brazil	The majority of deforestation is from cattle ranching, the remainder is from small-scale agriculture and unsustainable logging	São Félix do Xingu stakeholders created a Pact for Ending Illegal Deforestation, and the key strategies include registration of private lands in the Rural Environmental Registry (CAR), partnerships with beef companies to enforce deforestation-free cattle commitments, intensification of cattle ranching, introduction of sustainable high-value crops like cacao, and sustainable management of indigenous lands.
Terai Arc, Nepal	Unsustainable and illegal harvest of forest products, overgrazing, forest fires, infrastructure, resettlement	Nepal intends to improve land use planning, build on and extend community and collaborative forest management, increase access to alternative energy sources (e.g., biogas), and enhance alternative livelihoods to address underlying drivers.
Yucatan Peninsula, Mexico	Conversion to pastureland, expansion of agriculture, over-grazing, poor forest management, firewood extraction, fires, pests, new infrastructure	The Yucatan Peninsula program is testing and disseminating best practices in forestry, cattle ranching, and agriculture, strengthening forest governance in communities and helping them to access green finance, and working with agriculture and environmental agencies to align agricultural subsidies with forest-friendly, sustainable development.

A range of jurisdictional characteristics helps explain why REDD+/LED program designs differ. Each jurisdiction's own characteristics determine, in effect, which key "levers" can be pulled most effectively to shift development to a more climate- and forest-friendly approach. These include:

- ***The nature of the commodity production*** (e.g., the extent to which it is sold into environmentally sensitive markets). In Ghana, deforestation is largely driven by one internationally traded commodity, cocoa, and so Ghana's approach relies heavily on partnering with the Ghana Cocoa Board and multinational cocoa buyers to find solutions to reduce deforestation in the cocoa sector. Mai Ndombe and the Terai Arc, by contrast, are examples of areas that do not produce a lot of commodities that are sold into environmentally sensitive markets and where supply chain incentives are therefore less important.

- ***The land management regime*** (e.g., community-based versus larger commercial holdings). For example, in Mexico 70 percent of forests are owned and managed by ejido communities who are involved in small-scale, largely locally consumed and traded production, and landscape outcomes are driven by Mexico's very large agricultural subsidy and rural assistance programs. Mexico's approach is therefore highly focused on community approaches to forest-friendly agriculture and ranching practices, along with reform of government subsidy programs.

- ***The political will and policy framework available to create change***. For example, Brazilian jurisdictions have taken advantage of the strong political will, regulations, and enforcement from the national government for most of their success to date.

A REDD+/LED pathway may also be influenced by how the issue was initially framed in the country or jurisdiction. For example, in Mexico the national government, particularly the National Forestry Commission (CONAFOR), has articulated what REDD+ is for Mexico and has provided relatively good vertical communication with states, including those in the Yucatan. In contrast, in Peru multiple REDD+ projects and jurisdictional programs emerged with limited guidance from the national government, prior to the more recent strengthening of the national approach and a $300 million results-based finance agreement with Norway and Germany. The DRC is designing its program—an aggregation of strategies for a mosaic of land tenure types—partly around pre-existing projects and concessions. Finally, in Brazil, some subnational units (states, municipalities) feel constrained in advancing certain approaches due to the nationally defined program that groups the entire Amazon biome as a jurisdiction and measures performance and receives rewards into the Amazon Fund at that scale.

2.3 Scale: A variety of scales have been chosen for REDD+/LED programs

There is a wide diversity in program scales. Emerging jurisdictional programs range from full national-scale programs (e.g., Guyana, Ecuador) to administrative units that may be one or more levels beneath the national level (e.g., from state or province to district or municipality). Several are defined by ecosystem boundaries (e.g., Ghana). Sizes also vary: In the eight jurisdictions studied for this paper they varied from just over 2 million hectares (Berau, the Terai Arc) to well over 10 million hectares (Acre, the Yucatan Peninsula, Mai Ndombe). The largest jurisdiction, Acre (nearly 16 million hectares), covers only 2 percent of Brazil and has less than a million people, whereas Ghana's ecoregion—much smaller at 6 million hectares—encompasses nearly a quarter of the country and includes 18 million people, many of whom are engaged in subsistence farming that drives deforestation and forest degradation.

The benefits and risks of implementing jurisdictional programs impact the scale chosen. In the following section we synthesize observations from people working on the ground as to what they saw as the upsides and drawbacks to working at a jurisdictional scale. We then describe why particular scales were chosen by the jurisdictions we studied.

In assessing the benefits and drawbacks of taking a subnational jurisdictional approach, it is important to consider whether this analysis is relative to national approaches or project approaches. For example, a benefit of jurisdictional programs relative to projects (e.g., jurisdictional programs better address leakage) could be a drawback with respect to national approaches. Below we highlight what we see as the most important benefits and drawbacks of jurisdictional programs, and more fully summarize the pluses and minuses relative to both national and project approaches in Table 3 at the end of the section.

Benefits of jurisdictional scale programs

Subnational programs offer a more manageable scale to succeed than national programs in large countries and can create models for larger-scale implementation. The concept of starting at a manageable scale was rated highest in the survey as a key benefit of a jurisdictional approach. Most countries intend to create national programs, but currently do not have the resources needed to begin implementation at such a large scale. In addition, innovation is more easily tested at a jurisdictional scale, as well as gaining a better understanding about problems and trade-offs—allowing, therefore, the creation of a proof of concept for national implementation. Subnational programs also can achieve tangible progress sooner than at

Table 2. Variety in size of jurisdictional programs

Jurisdiction	Level compared with national	Size of jurisdiction (million hectares)	Size relative to country (% of national territory)	Population	% annual forest loss[4]	Average emissions ($MtCO_2e/yr$) in given years[5]
Acre, Brazil	State, one level down	15.7	2%	776,463	.30%	27.2 (1996–2005)
Berau, Indonesia	District, two levels down	2.2	1%	201,565[6]	.81%	9.7 (2000–2010)
Cocoa Ecoregion, Ghana	Ecoregion	5.9	25%	18,000,000	.51%	28.5 (2000–2010)
Mai Ndombe, Democratic Republic of the Congo (DRC)	Province, one level down	12.6	5%	1,500,000	.23%	14.7[7] (2000-2010)
San Martín, Peru	Region, one level down	5.2	12%	778,545	.63%	10.7 (2000–2011)
São Félix do Xingu, Brazil	Municipality, two levels down	8.4	1%	106,940	1.19%	31.4 (2000–2012)
Terai Arc, Nepal	12 districts, two levels down	2.3	15%	7,350,000	.11%	6.9 (2006–2011)
Yucatan Peninsula, Mexico	Three states, one level down	13.8	7%	4,100,000	.72%	5.7[8] (2001–2012)

4 In the case of the Brazilian jurisdictions, percent annual forest loss was calculated using the reference period 2000—2013 and forest loss data from INPE. Percent annual forest loss was calculated for all remaining jurisdictions using the reference period 2000—2012 and global forest loss data from: Hansen MC, Potapov P V., Moore R et al. (2013) High-resolution global maps of 21st-century forest cover change. Science, 342, 850–853.

5 Average emissions are cited from the following sources—Ghana, San Martín, and the Terai Arc: submitted ER-PINs to the FCPF Carbon Fund; Acre: Brazil. IMC. Jurisdictional Program Of Incentives For Environmental Services Related To Carbon Of The State Of Acre, Brazil. Rodrigo Fernandes Das Neves and Mônica Julissa De Los Rios De Leal. Rio Branco: n.p., 2013. Print.; Berau (which includes degradation from logging), São Félix do Xingu, and the Yucatan Peninsula: TNC analysis.

6 Badan Pusat Statistik, Republik Indonesia (web). 2013

7 This figure includes historical data provided by the DRC in its ER-PIN and only includes historical average emissions from areas in Mai Ndombe outside timber concessions and does not include emissions from degradation in timber concession areas. Therefore this figure is likely an underestimation of the total average emissions in the historical reference period.

8 Provisional estimate derived by combining estimates of gross forest loss (Hansen et al. 2013) with above-ground live carbon estimates from a national biomass map developed by Woods Hole Research Center: Alianza México REDD+. 2013. Densidad de carbono en la biomasa leñosa aérea de los bosques y selvas en México. Versión 1.0. Woods Hole Research Center, The Nature Conservancy, Comisión Nacional Forestal - Proyecto México Noruega, Comisión Nacional para el Conocimiento y Uso de la Biodiversidad. México. Julio 2013. Formato mapa cartel.

the national scale, thereby building momentum in a country. For example, the DRC is the largest country in Africa (over 234 million hectares) with over 67 million people; it also has the lowest GDP per capita. It would be a tremendous challenge for the DRC, particularly with its limited capacity, to attempt to test implementation of a new program at the national level. DRC's strategy is therefore to pilot a large-scale subnational program which will inform not only the national REDD+ strategy but also contribute to the evolving national economic development vision "Congo 2035."

Large programs offer economies of scale. Implementation at a jurisdictional level can reduce transaction costs and result in a more efficient use of resources relative to projects. For example, developing capabilities to measure, report, and verify (MRV) emission reductions at the project level can result in aggregate costs that are much higher than those designed into an MRV system that covers the entire jurisdiction. Measuring performance across a jurisdiction may help to manage risks of "leakage" or activities shifting to nearby locations and provide a more credible carbon accounting framework than a smaller scale project. The same concept applies to the creation of safeguard frameworks, planning processes, and other "readiness" elements that can capture efficiencies at scale. Furthermore, a subnational scale offers flexibility on benefit sharing mechanisms—for example, the option to use funds to finance enabling strategies but also to administer benefits to specific actors in the jurisdiction.

Policy reform and institutional collaboration is possible at a larger scale. Those interviewed suggested that working at a jurisdictional scale made it possible to directly influence policies around forest conservation and green development. Taking a jurisdictional approach also helps to ensure that local governments are participating in a national policy dialogue, which is important for national level policy change and, where possible, to encourage institutional cooperation across sectors, for example integrating conservation into economic development planning. Benefits can be achieved by working largely through and strengthening existing institutions and processes, as well as promoting intersectoral approaches and engaging actors who normally are not inclined towards sustainable practices. In contrast, project-scale activities can become constrained by a lack of alignment or cooperation with local or national governments.

Jurisdictional scale programs can provide positive and visible recognition for leaders who advance strategies that may be politically risky. Where programs can access additional finance or create community success stories or remove a jurisdiction from the Brazil "black list," these visible benefits support local politicians who are asked to take risks in supporting REDD+ or LED programs. Jurisdictional leaders also find it useful to be recognized in international political forums. An example is the progress made when then-California Governor Arnold Schwarzenegger hosted in November 2008 the first Governors' Climate Summit, signing a Memorandum of Understanding with governors from California, Illinois, Wisconsin, the Brazilian states of Acre, Amapá, Amazonas, Mato Grosso, and Pará, and the Indonesian provinces of Aceh and Papua, to cooperate on forest and climate issues, including preparation of a Joint Action Plan to outline future efforts. Under the Governors' Climate and Forests Task Force, which was established soon after, states began to meet on a regular basis to discuss progress on their REDD+/LED programs.

Examples of REDD+/LED programs influencing broader policies and institutional collaboration

Many jurisdictions are making efforts to influence public policies and engage multiple sectors. For example, the Yucatan program is engaging with Mexico's Ministry of Agriculture, Livestock, Rural Development, Fisheries, and Food (SAGARPA) to see how agricultural subsidies might be better aligned with CONAFOR and the Yucatan's forest protection goals—although this remains a challenge. One example where there has been success is the broader Amazon program in Brazil, where the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAM) demanded strong cooperation among 13 ministries and law enforcement agencies such as the police and armed forces. Another example is in DRC, where the Mai Ndombe program is addressing issues related to land use management, which will provide inputs to criteria of the national-level Economic Governance Matrix.

Drawbacks of taking a jurisdictional approach

Coordinating across multiple land-uses and stakeholders makes jurisdictional programs complex to manage. Jurisdictions generally have multiple types of tenure or management that can make it harder to align stakeholder interests and coordinate strategies. This is particularly true when different tenure types are subject to different policies and regulations or where there is a history of land conflicts. The São Félix do Xingu program, for example, must work across indigenous territories, protected areas, large cattle ranches, and settlement communities in a region with a history of land conflict on the frontier of the Amazon "arc of deforestation." This

challenge also presents a benefit, however, in that it represents a microcosm of national circumstances, and enhances the demonstration value of jurisdictional approaches.

Capacity to implement complex programs at large scales is often missing. A lack of human and technical capacity was rated highest (with very strong agreement) by survey respondents as the key risk to their jurisdictional program—not just in poorer countries, but also jurisdictions located in, for example, Brazil and Mexico. A lack of financial resources was a close second, similarly suggested as a risk for all jurisdictions. For example, in Mai Ndombe, the program area has 1.5 million people, including rural communities, loggers, the mining industry, and agribusiness. It will face a challenge in bringing everyone on board, providing the necessary incentives and agreeing on a benefit sharing structure, and creating management plans for over a thousand villages.

Potential misalignment with national level processes. Subnational efforts that are endorsed by the national government and connected to national level processes can provide important lessons for policy reforms or national strategy building. However, those not well connected to national level efforts may risk limited support from the national government or future misalignment with national REDD+/LED programs. In some countries, slow national processes are impeding the progress of jurisdictions that are waiting on national level advancements (e.g., Berau, the Yucatan). Some jurisdictions are further ahead than the national level program and have passed legislation or developed frameworks for REDD+/LED (e.g., Acre, San Martín). As the national level catches up, tensions can develop between jurisdictional REDD+ programs and national programs. This misalignment has implications for a range of possible issues, including control of results-based finance flows and for the sustainability of mechanisms developed at the jurisdictional scale, which might be overridden by new national legislation or regulations. Alternately, particularly in countries with weak national governance, development of subnational programs may have the unintended consequence of distracting attention of stakeholders from national level processes. Furthermore, there are cases where REDD+ programs come into conflict with existing development policies. For example, in Indonesia the Planning Agency (Bappenas) responsible for disbursement of development finance, has suggested that REDD+ can "crowd out" existing development plans or create a parallel planning process at jurisdictional levels if it is not well integrated into broader national green development efforts.

To ensure alignment of projects within jurisdictions, or subnational programs within a national program, some jurisdictions are exploring nesting approaches, but these are complex and there are not yet models of success. Furthermore, there remain

TABLE 3. Benefits and drawbacks of jurisdictional approaches compared with project-level and national-level approaches

Scale	Benefits	Drawbacks
Relative to Project	• Economies of scale, addresses leakage • Better able to influence policies and institutional collaboration • Creates representative models across multiple land uses and stakeholders for scaling up to national • Can provide positive and visible recognition for leaders, encouraging needed political will at the jurisdictional level	• Complexity of coordinating across multiple land uses and stakeholders • Capacity to implement may be lacking • Uncertainties in depending on jurisdictional governments
Relative to National	• More manageable scale than national • Potentially faster results possible, creating momentum for national efforts	• National scale offers strongest opportunity for needed policy reform and institutional collaboration • Jurisdictional capacity may be lower • Possible misalignment with national level processes • Economies of scale, leakage risks

many challenges related to managing *existing* projects that were created prior to jurisdictional requirements that ensure consistency across such projects. This is the case in the DRC, Indonesia, and Peru; it is also true in Brazil, where the national government operates the Amazon Fund separately from state level efforts to access performance-based payments.

Inherent uncertainties related to working with jurisdictional governments. In particular, those working on site-level or project activities noted the risk of a program being dependent on a regional government—particularly where there is low capacity, or high turnover within such an administration—to act. Those working on projects believe they can move faster and provide useful demonstrations on the ground. As mentioned earlier, another inherent risk is national governments overriding efforts at a subnational level; this may be particularly true in nonfederal systems. For example, in Indonesia a previous law gave significant authority to the district level in managing land-based economic activities. However, a newly released law (UU 23/2014) draws some of that authority to the province, which will present new challenges for programs at the district level. It is worth noting, however, that dependency on subnational government was not rated as strongly on the survey as other risks.

Choosing a program boundary

Defining scale around political boundaries has become the preferred approach, although there are exceptions. Seven of our eight program areas align with political boundaries, largely because of the advantages of the associated alignment of political interests, policies, existing administrative structures, and funding. The exception is Ghana, where an ecoregion was chosen because of the core focus on the sustainable cocoa strategy.

The following factors have affected the choice of scale in the eight jurisdictions studied:

- **Authority over land-use decisions**. For example, districts in Indonesia have had much greater authority over allocation of palm oil permits and other uses of developable land than provinces and therefore have some key advantages as a program unit.

- **Capacity and resource availability**. Larger scales can face greater implementation challenges, but they may also have greater human and financial capacity choosing the right scale will reflect these trade-offs. How policies are implemented and funding is distributed within a country is also critical; for example, São Félix do Xingu was chosen in part because municipalities in Brazil are a scale at which several important government programs operate.

- **Efficiency versus feasibility.** Larger scales are more efficient, resulting in economies of scale on readiness components. They also provide a larger and more diverse land base within which to optimize land-use decisions (for example, a smaller jurisdiction may have limited degraded lands). However, larger scales are harder to coordinate and take more resources and capacity to implement.

- **Similarity of ecology, land tenure, drivers of deforestation, and development agendas.** For example, in Ghana cocoa is the main driver of deforestation, so the cocoa belt was chosen as the program boundary. In the Yucatan, the three states are working together in a coordinated approach as they share a common ecology, land tenure system, and development challenges—and therefore will have many common elements in their approaches.

Some countries feel pressure to choose larger scales based on donor expectations. For example, some donors have indicated they will only finance REDD+ results at a "significant" scale, sometimes indicating a preference for the largest subnational scale. Indonesia is a good example where there has been an ongoing debate about the merits of defining sub-national programs at different scales—whether at the province or district scale, or some hybrid approach.

Table 4 illustrates the variety of reasons for choosing particular program boundaries—sometimes by the national government, and other times initiated by the jurisdictions themselves—in the eight jurisdictions we studied.

2.4 Looking back: What have been key elements of success to date?

Political will of leaders at both national and subnational levels was cited both in interviews and the survey as critical to positive outcomes to date. In the survey, it was ranked among the highest two "elements of success" in seven out of eight of the jurisdictions studied. This was particularly true for Acre, where the political will of leaders is encouraged by broad support for conservation by constituents—with roots in the Chico Mendes movement, which started in the 1970s and 80s. Broad support for forest conservation is also apparent in Nepal and can be attributed to its early successes in the 1990s at reducing deforestation.

Political will is also associated with the ability to create **a strong legal, policy, and regulatory environment.** Many of those working in jurisdictions that have demonstrated significant emission reductions to date suggested this was a key component to their

TABLE 4. Reasons program boundaries were chosen in the eight jurisdictions studied

Jurisdiction	Reason chosen
Acre, Brazil	States are an important scale to coordinate development activities. Acre is unique in its history of environmental activism and has been able to promote innovative policies around sustainability and forest protection.
Berau, Indonesia	Districts in Indonesia have predominant authority over many land-use decisions as a result of post-Suharto decentralization in Indonesia.
Cocoa Ecoregion, Ghana	Covers the cocoa-growing region within the jurisdiction of the Ghana Cocoa Board, therefore providing a mechanism to engage a critical mass of cocoa farmers in the program
Mai Ndombe, Democratic Republic of the Congo (DRC)	One of the highest current and potential deforestation areas in the Congo Basin due to its proximity to Kinshasa; a manageable size for an initial program given large size of the country (over 234 million hectares)
San Martín, Peru	Regions are the largest sub-national scale and most important for economic development planning, and for coordinating efforts to reduce deforestation, including improving the governance and control of forest land, increasing agricultural and forestry productivity, and enhancing institutional capacity.
São Félix do Xingu, Brazil	Municipality is a more manageable size scale (8 million hectares) compared with the state of Pará (125 million hectares); key government programs are also implemented at the municipal scale, e.g., the national program on "priority municipalities" and the Pará (state level) Green Municipalities Program.
Terai Arc, Nepal	A government-recognized area with high carbon stocks and mitigation potential, and where forest protection can lead to key non-carbon benefits, such as livelihoods and biodiversity
Yucatan Peninsula, Mexico	In Mexico, most authority for REDD+-related policy is at the national level. For example, federally directed subsidy programs affect key land-use decisions; however, states are critical for policy implementation. The national government has identified priority jurisdictions to implement REDD+ and to receive REDD+ finance from, for example, the FCPF Carbon Fund. The three states of the Yucatan are national priorities and have joined together because they share a common ecosystem, community-based land tenure, and development challenges.

successes. For example, a strong public policy framework is seen as key to Acre's success—not only providing incentives to those who protect the environment but also by lowering the investment risk for the private sector. Strong national policies and enforcement can also support jurisdictional programs. For example, the PPCDAM and Forest Code and their enforcement by the Brazilian government can be credited for success in Acre, and also in São Félix, where deforestation dropped after the municipality was put on the "priority municipalities" list. That meant it faced heightened monitoring of deforestation and, given additional regulations put in place by the Bank of Brazil, that individual properties within the municipality lost access to low interest credit. Similarly, in Mexico, a climate change law that includes a target of reducing deforestation requires states to develop Climate Change Action Plans and REDD+ Strategies. Many suggested that creating a legal process mandated by law can mitigate the risk posed by political turnover.

Transparency of data and information that leads to accountability is also seen as critical to driving change. Extensive monitoring by the National Institute for Space Research (INPE) in Brazil—along with increased transparency of that data (i.e., making it freely available on line)—has been a key factor in Brazil's success. Transparency has also been increased in jurisdictions such as São Félix do Xingu through policies to expand the public registration of properties.

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Many jurisdictions attributed success to date to international investment and support. External support scored highest in our survey regarding what has contributed most to success to date, indicating that many programs are currently driven by official development assistance (ODA). At the same time, such external support was ranked lowest in terms of the future incentives needed for success. This indicates that while progress has been dependent in many jurisdictions on external finance, jurisdictions will eventually need to catalyze other incentives (see Section 2.6) to sustain success.

Finally, community-based approaches have demonstrated success. Very high on the survey rankings was the proven success of community-based programs, for example empowering communities to define their own development agendas, access resources to implement these agendas, and engage in land-use decision making processes. Many jurisdictional programs that we studied have tested such approaches and have demonstrated results. For example, Nepal has demonstrated that community forest user groups can improve management of the forest and this success can be seen in forest inventory data of the Terai Arc region from the mid-1990s to the mid-2000s, when deforestation dropped precipitously. However, new pressures are once again increasing deforestation. Berau's Community Green Development program has also had success supporting communities to build village-level sustainable development plans, secure their rights to areas that support their livelihoods, and access resources to achieve their aspirations and vision for their land. This effort has slowed forest conversion considerably in the areas where it is being tested.

Community-based approaches are therefore a vital piece of the puzzle for many jurisdictions. However, some of those we consulted also suggested that such approaches in some jurisdictions may face limitations. For example, in Berau community approaches have slowed forest clearing from palm oil development, but other complementary incentives and strategies will be needed to achieve sustainable palm oil over the long term. In São Félix do Xingu, most deforestation is occurring on private lands, with 84 percent of private land held in 18 percent of properties; therefore, working with large landowners is necessary to succeed. In addition, it is not yet clear how some jurisdictions will scale up community-based approaches given the capacity gaps and resource requirements involved in working with large numbers of communities on the ground.

2.5 The present: What common challenges do jurisdictional scale programs face?

The value proposition of REDD+/LED to political leaders, industry, and other key partners must be compelling enough to drive fundamental long-term changes in their development approaches. In some cases this value proposition has been made, for example in Ghana where politicians, the cocoa board, and farmers appear to be convinced that the REDD+/LED program is in their common interests. However, in many other places, this is not yet the case. Although we hear progressive ideas from leaders in environmental ministries, or even from heads of political jurisdictions including national leaders, the reality of land-use decisions continues to be largely driven by near- to medium-term economic considerations (e.g., household income, industrial growth, jobs, and tax revenues). Furthermore, political and other leaders are motivated by a variety of complex interests that are hard to understand from afar and often go beyond simple monetary flows or access to commodity markets. For example, Indonesian district governments gain many benefits from the issuance of palm oil permits on forested land, including tax revenues, job opportunities, and income for residents. A compelling case is required for changing behavior, which as of yet has not been adequately articulated.

The value proposition is also an issue for producers on the ground, where it can be difficult to convince farmers or ranchers to change how they have managed their land for decades. This is true in São Félix do Xingu, the Yucatan, and Ghana, where

three generations of cocoa farmers are used to doing business in a particular way. A need therefore exists for economic models that demonstrate to farmers how they will be better off using more sustainable practices, extension support at large scale, financing for the transition to sustainability, and, where possible, enhanced market access. To change business as usual requires making a compelling case in the context of the circumstances of each jurisdiction and country.

Green development has not yet been mainstreamed across key government sectors. The barrier that was rated highest in our survey was the difficulty programs have in gaining the cooperation of needed sectors (e.g. agriculture, mining, finance) and integrating forest protection into development planning. In many jurisdictions, REDD+ programs still remain largely a forest-sector driven program, even though it is recognized that drivers are outside the sector. In Mexico, for example, the REDD+ agenda is led by the national forest agency CONAFOR; however, the agriculture secretary, SAGARPA, controls most of the budget for rural subsidies and assistance. Coordination between these agencies is improving but has taken considerable time to develop.

The size, level of ambition, and complexity of jurisdictional approaches quickly run into capacity and resource gaps. Lack of human, technical, and financial resources was consistently mentioned as a top challenge that jurisdictions face, and is of particular concern as jurisdictional approaches move from design to implementation. Early indications are that most jurisdictions will require considerable upfront investment and partners to implement the program. For example, over a thousand communities in Mai Ndombe will require assistance in developing management plans, and local governments will need to be enabled to enforce them.

Capacity problems were cited as particularly acute at lower jurisdictional levels (local, district, or municipal). Even in higher capacity countries such as Brazil, local capacity and limitations of municipal administration staff were cited as a key barrier to progress (e.g., São Félix do Xingu). The relatively recent decentralization of authority in some countries means that subnational jurisdictional governance and institutions are weaker. For example, the Mai Ndombe program will largely be run by the national government (as the Mai Ndombe province does not formally exist yet); regions in Peru are also relatively new (established in 2002). These examples contrast with the more well-established and older state systems of Brazil and Mexico. Many of those surveyed felt that better capacity existed at the national level, with its stronger domestic budgets and ODA, larger institutions, and officials who have greater opportunities to attend international forums to build their knowledge.

Change in government was cited as a major risk by almost all jurisdictions. This risk is indicative of weak institutions and the basis for many programs not being codified in law, policy, or regulation. For example, the Yucatan states have gubernatorial elections every two years (state elections are every six years, but the three states are on a staggered cycle). Several respondents working in San Martín also voiced concerns about the new head of the region, who is from a different party than his predecessor's, leading to uncertainty about what approaches will be continued with the new government.

Bureaucratic turnover is also cited as an ongoing problem. At the national level, but more acutely at the jurisdictional level, sometimes only one person or a few people within the administration know and understand REDD+/LED. Turnover and retaining institutional memory and capacity on REDD+/LED therefore becomes a significant problem. Further exacerbating this problem is that, for many places, working on REDD+/LED is not always attractive or career enhancing for government staff, so good people often do not stay in key positions for a long period of time.

Finally, lack of land tenure and basic control of a territory were cited as fundamental problems in some cases. While much has been written about land tenure, interestingly the survey suggested it is not always the most difficult challenge that a jurisdiction faces—we found a wide disparity in responses as to whether it was the least or most problematic issue for a jurisdiction. In some jurisdictions a precondition for REDD+/LED success is simply asserting basic control over "wild-west" frontier areas. Without fundamental government control to prevent land grabs and illegal activity, strategies are expected to fail.

2.6 The future: What incentives are needed for success?

Domestic policies can create the most effective incentives, both positive and negative. Supportive domestic policies were cited (in both the online survey and our interviews) as the strongest, most effective incentive required for a jurisdiction to succeed. Such policies can provide both negative and positive incentives. For example, command-and-control policies can be very effective; as mentioned before, São Félix do Xingu's clear goal to get off the black list has been highly effective in reducing its deforestation—although now further positive incentives are needed if success is to be sustained. Positive incentives include, for example, policies that support sustainable agriculture and livestock management, that create incentives for improved timber harvesting practices, or that provide clear land tenure or usage rights to natural resources for local communities.

Aligning in-country finance with REDD+/LED goals is a potent lever available to drive change. Inadequate attention has been paid to domestic sources of finance and incentives, which in some cases are key to the long-term sustainability of a program. Although many programs are currently dependent on external finance (see Section 2.4), they will at some point require in-country mechanisms to provide a more enduring source of financing. Many cited the effectiveness of fiscal incentives—for example, agricultural subsidies, access to credit, tax incentives, and rural assistance which can amount to billions of dollars annually in many countries. Such levers can dwarf funding from international assistance but require cooperation from ministries of finance, agriculture, and other agencies beyond traditional environmental and forestry departments. For example, states in the Yucatan Peninsula are not only interested in accessing new external funds but want to influence existing flows of domestic financing to mitigate their impact on the environment. Significant money flows from the federal government to states through, for example, SAGARPA, and some of it encourages clearing of forests for agricultural expansion.

Domestic flows of finance that impact the land sector in Mexico

Mexico has a national target to achieve net zero deforestation by 2020. A central driver of land-use policy in Mexico is the national rural development agenda, which in 2014 had a budget of $24 billion, a portion of which encourages deforestation by supporting extensive agricultural systems. Only 4.5 percent of the budget was for the environment sector, and 2 percent for the forestry sector. And the budget for CONAFOR that year was only $520 million. An important strategy of the Mexico and Yucatan REDD+ programs is to reform agricultural subsidies to support more intensified and sustainable production systems rather than agricultural expansion. Mexico recognizes that international funding for REDD+ (including results-based finance) won't be enough to make the transformational changes the country needs to stop deforestation but can be an important catalyst to align existing incentives.

Commodity markets can also provide a powerful signal to actors in certain circumstances. Market signals have been effective in, for example, Brazil (see the box on following page) and have great potential in a place like Ghana where the dominant crop, cocoa, is sold largely to environmentally sensitive international buyers. Many people working in the eight jurisdictions studied believe that market signals, such as those being offered by companies pledging to take deforestation out of their supply chain, can be an effective incentive. However, in our interviews, few suggested these signals have yet had an impact on the ground. Some noted important challenges, such as the fact that agriculture and fuel wood in many places is for local consumption and not connected to international markets. And even for nationally and internationally traded commodities like palm oil, producers can sell into large markets that are not environmentally sensitive. Furthermore, multiple commodities are often being produced in one area, so avoiding forest loss may require pressure through multiple supply chains. In addition, even where there may be strong demand for sustainable production, translating this demand to changed practices on the ground will take time, particularly within a jurisdictional context where supply sheds may not match the administrative boundaries of a program.

Results-based climate finance is potentially a new source of incentives that can help to build political will and drive change. Whether results-based finance, such as REDD+ payments, can provide an effective incentive was a question that had the highest level of disagreement in the survey responses. It tended to score quite high (i.e., a potentially strong incentive) in lesser developed economies (e.g., DRC, Nepal) and quite low in places with strong domestic budgets (e.g., Brazil, Mexico) or which are pursuing commodity market-oriented models (e.g., Ghana). Results-based finance has created some notable benefits, in that it has captured the attention of political leaders in some locations, catalyzed planning and discussion around conserving forests, and created momentum. For example, when Mexico was accepted into the FCPF Carbon Fund interest and attention among Yucatan stakeholders in advancing the regional climate program increased notably as they began to imagine that funding could flow to support this effort. Furthermore, results-based finance offers an incentive for performance across an entire jurisdiction, so it can provide an important complement to supply chain incentives, which, as noted above, often affect only portions of the landscape.

However, some common themes described by those working on jurisdictional REDD+ programs include: finance based on carbon emissions reductions is highly challenging due to the complex technical and legal issues; REDD+ and carbon-based approaches are esoteric and difficult to serve as motivators to leaders and stakeholders; and many countries face a gap in the upfront funding need to perform (and therefore access results-based finance). Some also raised concerns about the lack of predictability of REDD+ finance. Acre has developed a low carbon economic development program focused on payments

Examples of market signal success in Brazil

A notable case where private sector pressure has had measurable impacts is in Brazil, where in 2006 the soy industry, under pressure from civil society, agreed to a voluntary moratorium on purchasing or trading soy cultivated on newly deforested land in the Amazon. Businesses were able to capitalize on technology improvements to increase their yields and expand onto previously cleared and degraded land, providing the opportunity for soy production to increase at the same time that deforestation was decreasing.

Market incentives can also result from government policies. Under pressure from the federal public prosecutor's office in Pará state, major slaughterhouses signed an agreement known as the Terms of Adjustment of Conduct stating they would only buy cattle from ranchers registered with the Pará State Rural Environmental Registry. Para's federal public prosecutor's office also warned Brazil's largest supermarket chain that it might also face prosecution if it purchased meat originating from ranches that are not in compliance with Brazilian law. These efforts have been a strong force toward compliance with legal requirements.

Source: Walker, Nathalie, Barbara Bramble, and Sabrina Patel, "*From Major Driver of Deforestation and Greenhouse Gas Emissions to Forest Guardians? New Developments in Brazil's Amazon Cattle Industry*," National Wildlife Federation (December 2010).

for ecosystem services, in which forest carbon and REDD+ are only one component—which helps to mitigate such risks.

International funding can supplement domestic finance and help catalyze action. ODA, or other grant finance, has been helpful to support program development, build capacity and generate useful lessons, for example through funding many site-based strategies as referenced earlier. All of the eight programs in this study have benefited from significant international assistance, which in part accounts for their relatively advanced stage of development. Also as noted earlier, external finance was cited in the survey as one of the top elements of past success**.**

However, traditional grant-based ODA (i.e., funds not used for results-based finance) was ranked in the survey as the least effective incentive for future program success. Many suggested that ODA tends to finance "bits and pieces" of programs and is rarely concentrated in an effective way in jurisdictions. This results in adding a complexity of stitching together multiple grants and ensuring cooperation of multiple delivery partners of those programs. This can even occur within a single donor institution that has multiple but uncoordinated programs in a single country or jurisdiction.

Finally, for less developed countries, international funding has a higher impact and a larger influence on the policymaking process. For example, in the survey those responding for Mai Ndombe ranked external finance (both results-based payments and ODA) much higher as an incentive than in-country finance, whereas the opposite was true for more developed economies (jurisdictions in Mexico and Brazil).

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3. CONCLUSIONS

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3.1 What have we learned from jurisdictional scale programs?

The jurisdictional approach is compelling and should continue to be a key focus of attention. Jurisdictional programs have critical benefits, including their ability to engage governments to align policy and enforcement strategies; achieve outcomes that require planning across multiple types of land use and cooperation among a broad range of stakeholders; and offer economies of scale and credible measurements of deforestation and forest carbon emissions. In large countries, investing at a subnational level provides an opportunity to achieve results in a much shorter timeframe than at the national level, to test innovations that can be scaled up to the national level, and to create the building blocks of national success.

At the same time, making progress at the national level is also critical and should be pursued in parallel to subnational efforts. Many of the jurisdictions that were part of this study illustrated how slow national progress impedes subnational level efforts, and that few subnational efforts can succeed without a well-functioning national approach. Many also depend on national level policy reform.

Similarly, project or site-level demonstrations are also important to inform higher scale programs, providing lessons as to what works on the ground and maintaining momentum needed to sustain national and jurisdictional efforts. Political leaders and other key stakeholders can lose interest and momentum without seeing concrete wins along the way.

The appropriate scale for a jurisdictional program depends largely on the country context, including where authority for land-use decisions resides, the capacity and resources available at different scales, the feasibility of working at larger jurisdictional scales, and the ecological and economic relationship of forest areas. Working at the largest subnational scale is not always the best approach, but jurisdictions should also be large and diverse enough to serve as representative models for broader national action.

Jurisdictional programs are long-term endeavors that require patience and long-term commitments. Subnational approaches are often complex and not as simple to develop and implement as the circumscribed nature that their geography suggests. They generally involve complex relationships among multiple stakeholders—national and subnational governments, local communities, private land and concession holders, and others—and require ongoing coordination across sectors. Adequate capacity

(human, technical, and financial) remains a key challenge that all jurisdictions face and is something that cannot be quickly developed. Designing and implementing jurisdictional programs also requires changing the way people think about rural development, which is a long-term endeavor. It is therefore important to have realistic expectations regarding the pace of change. Donors and forest countries alike must have patience to stay the course and invest in long-term outcomes and building country ownership of REDD+/LED programs.

Political leaders require a compelling value proposition to change course—and many do not have one yet. Not all leaders have embraced low emissions development and protecting natural capital as a route to achieving economic *and political* goals. Government leaders need to see a compelling value proposition based on their particular interests, and finance and incentives need to be designed to reinforce and support such value propositions. This will require a combination of strategies; results-based finance and supply chain pressures can be important pieces of the puzzle in certain circumstances but are unlikely to be sufficient on their own.

Early examples of slowing deforestation are encouraging, for example, through domestic policies and community green growth strategies. Supportive policies and enforcement have been the primary driver of success in Brazil (e.g. implementation of the Forest Code, creation of "priority municipalities" or the black list, and Acre's SISA program) and will be critical for any jurisdiction to effectively reduce emissions. While not a new concept, empowering communities to manage natural resources consistent with their long-term development visions has helped to slow deforestation in many locations, including examples where community land tenure remains unclear. Community management alone is unlikely to halt deforestation, but it can be a critical component, and also supports the goals of poverty alleviation and improved livelihoods.

3.2 What do these lessons mean for the future of REDD+/LED success?

We need to move from the original payment for opportunity-cost approach to a transformational development model. Early conceptions of REDD+ as a means to compensate countries and pay actors in the landscape to change behavior (and related studies on opportunity cost) do not address the need to transform the development paradigm and may perpetuate dependencies on external finance. The starting point must be for countries to embrace forest protection as integral to their sustainable development interests, with REDD+ and other incentives providing support for that low emissions development pathway. Ownership of this shared REDD+/LED vision by political leaders and other key stakeholders is essential to program success.

Many of the jurisdictions we studied are adapting this updated approach to the way they view the benefits and uses of carbon-related payments and other incentives, i.e., as contributing to a transition toward sustainable development. Program strategies include, for example, better use of already degraded land for agricultural expansion, boosting productivity of cattle ranching, palm oil, and other industries, and adopting improved forest management practices that can reduce forest destruction and emissions without reducing the amount of timber taken to market. These approaches are not about paying farmers to stop production but rather about creating incentives and support to forest nations to transition to low-carbon, "green growth" models that promote economic development and job creation, but with smarter planning that dramatically reduces forest destruction.

Jurisdictions need "packages" of finance and incentives to encourage and support the pursuit of low emissions development pathways. The right package will need to be tailored to support the shared REDD+/LED vision of the key stakeholders in the jurisdiction. Such a package might combine: development assistance for capacity building and early implementation; domestic support for implementation, policy reform, enforcement, and incentives; demand signals (both negative and positive) from commodity buyers; and results-based payments. Greater focus should be placed on aligning in-country sources of finance and incentives, which are often orders of magnitude larger and more influential than international sources. Constructing a package of finance and incentives will require flexibility, innovation, and alignment among various parties and funding mechanisms:

- Forest country governments will need to be open to *reforming in-country funding and policies* to, in some cases, stop encouraging deforestation and align in support of their REDD+/LED vision including sustainable agriculture and improved livelihoods.

- Corporations, governments, and civil society will need to *evolve sustainable supply chain approaches* so they work toward landscape outcomes, in addition to satisfying the procurement policies of particular companies. That evolution can both broaden the impact of sustainable supply chain efforts and support companies in meeting their commitments, which are highly challenging to achieve on a farm-by-farm basis.

- Results-based finance is potentially a new source of incentives that can help build political will and drive change. Such finance based on carbon emission reductions is an internationally recognized concept, and is an important tool being tested through initiatives such as the Forest Carbon Partnership Facility (FCPF) Carbon Fund and bilateral agreements funded by the governments of Norway and Germany. Once payments are received, however, a country may consider other metrics for distributing the benefits based on national and local circumstances. For example, a country may choose to use the funds to further support sustainable rural development, to take actions that catalyze additional emission reductions, or to make payments to stakeholders based on milestones and performance measures other than carbon.

- In addition to carbon-based finance, donor and forest country governments may also consider testing alternative performance-based approaches such as directly rewarding proxies for reducing emissions (e.g., payments to reduce hectares with permits for forest conversion or to increase hectares under sustainable forest management or protection status). In some cases, particularly at the subnational level, carbon-based payments can be highly technical and hard to understand for political leaders and other constituencies. Targeting and rewarding proxies of performance can contribute directly to reducing emissions, can be simpler to implement, and may better respond to the interests of key actors.

- Donors will need to direct grant-based international assistance in strategic and complementary ways to the sources above, which will involve greater coordination and flexibility on how this funding can support results-based finance. In addition, a lack of human and technical capacity is one of the most crucial gaps and therefore a useful focus of development assistance.

With the appropriate investment and support, jurisdictional REDD+/LED programs have the potential to become transformational models of forest-friendly development. In all the jurisdictions we studied, value propositions are emerging that promote rural development, maintain natural capital, and enhance market competitiveness. Creating a new development pathway takes time and requires building political will, making transitional investment, improving cooperation across sectors and stakeholder groups, and facilitating cultural shifts to change traditional practices. Early indications suggest that shifting to a forest-friendly development model is possible, does not need to depend on international finance over the longer term, and can provide multiple, and sustainable, benefits to people and the environment.

Top Ten Things *Not* to Do

While our conclusions offer recommendations for what we might collectively *do*, we offer a few thoughts here related to things *not* to do.

Don't...

1. **Assume we know what motivates political leaders and other key stakeholders to change behavior without a careful analysis and understanding of the context.** There is a mismatch between what we often think key actors—countries, politicians, rural producers, forest communities—want and what they really want or need. These actors have diverse and sometimes unexpected interests, which do not always involve money.

2. **Invest most funding and effort into REDD+ planning and "readiness" (e.g., MRV, safeguards, etc.) and expect political leaders to maintain interest and momentum.** While these are critical elements of REDD+, they do not resonate with leaders and their constituencies unless, in parallel, they are backed by concrete implementation of activities. Actions and outcomes—even at smaller scales—often need to be demonstrated to convince leaders that there are, in fact, opportunities at hand.

3. **Offer largely results-based finance to low-capacity countries, jurisdictions or local stakeholders and expect them to perform.** Many lack the human, technical, and financial capacity for implementation. And for many actors, future payments for performance are too risky and uncertain to motivate change on their own. A threshold of in-country capacity is necessary for countries to effectively use results-based finance.

4. **Look to REDD+ payments or corporate supply chains as the sole solution to the problem.** While these incentives can help catalyze progress, they must be aligned with domestic policymaking and development efforts and not be considered as standalone strategies.

5. **Underestimate the problem of political and bureaucratic capacity and turnover in countries.** Strong and consistent political leadership is essential, as are institutions that can withstand changes of government. Human capacity, institutional memory, and staff turnover remain problems for many jurisdictions and countries—and can be the main reason for delays in a REDD+/LED program.

6. **Expect results to be achieved too quickly**. Doing so may result in a lack of ownership, forcing countries to use external advisers to do the work rather than build their own capacity and ownership of REDD+/LED.

7. **Assume that REDD+/LED is cheap.** Given the early stages of many programs, we likely do not understand the full costs, and early indications are that upfront investment needs are substantial.

8. **Create a model based on paying actors indefinitely to change behavior**. REDD+/LED funding should catalyze a transition to long-term forest-friendly development that is independent of external finance. Furthermore, payments to limit production will cause drivers to move elsewhere given the rising demand for food, fiber, and fuel.

9. **Expect others to take risks but not take risks yourself**. Forest countries are asked to try new and innovative approaches, companies are pressured to commit to sourcing deforestation-free commodities, donors are taking risks in helping to finance these efforts, and civil society is partnering with past adversaries to advance change. All parties need to take risks—for example, accepting "simple and approximately right" approaches rather than overly sophisticated ones, and embracing a higher tolerance for failure.

10. **Lose optimism**: We should not discount the progress that has been made, nor the opportunities that REDD+/LED presents. For many countries, REDD+/LED has dramatically elevated forests and climate on the political agenda; provided new funding for forest-friendly development; started a multisectoral dialogue about what drives deforestation and strategies to tackle it; engaged local to multinational corporations on solutions; improved forest monitoring and inventories; and catalyzed a conversation about performance and how to measure it, creating accountability ... and hope for the future.

ANNEX

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Introduction

In this annex we provide two-page snapshots of each jurisdiction in our study. Data and information for these pages are from publicly available sources (e.g., host country-generated documents, such as those submitted to the Forest Carbon Partnership Facility), as well as information gathered throughout the study from interviews with people working in, and with, the selected jurisdictions.

A brief description of each section in the Annex is provided below:

Basic information: Includes the size of the jurisdiction, its forest cover, population, basic economy, and jurisdictional boundary; most of this information is country-generated (i.e., official statistics of the country itself). The program status included in the basic information gives a quick snapshot of when the program started and major milestones.

Deforestation and its drivers: For Brazilian jurisdictions, percent annual forest loss was calculated using the reference period 2000—2013 and forest loss data from INPE. Percent annual forest loss was calculated for all remaining jurisdictions using the reference period 2000—2012 and global forest loss data generated by the University of Maryland (i.e., the "Hansen dataset"). We also use these two datasets to derive the forest cover/forest loss maps and forest loss bar charts throughout the annex. We chose these datasets because few countries have generated and published publicly quantified, year-on-year forest loss for specific jurisdictions. Note, for several countries degradation is the key source of emissions, which is not reflected in the University of Maryland data.

Statistics for average annual carbon dioxide emissions were collected from a variety of sources, including ER-PINs submitted to the FCPF Carbon Fund, government documents, and TNC analyses, and can be found in Table 2 on page 13.

A brief description is provided of key drivers of deforestation and forest degradation. This information comes largely from country generated publications (e.g., FCPF ER-PINs, R-PPs) but also from interviews with people working in the jurisdictions studied.

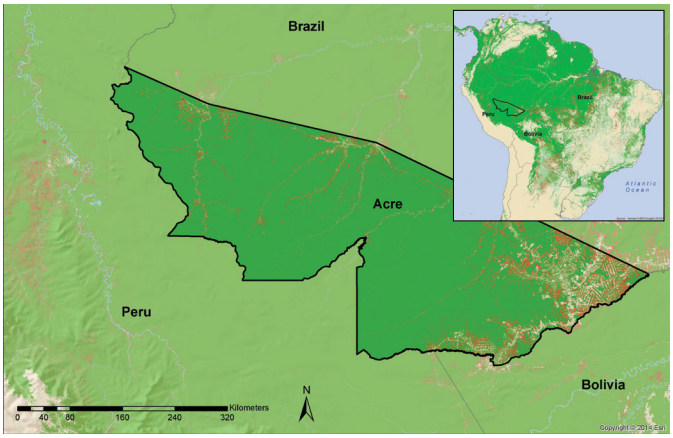
REDD+/LED strategy: A short summary of the approach that each jurisdiction is taking is provided. Key activities each jurisdiction is pursuing largely come from country-generated publications but also from our interviews. We include a brief paragraph for each jurisdiction on "incentives"—information generated largely from our interviews, where we asked what key incentives have driven success to date, and what new incentives need to be in place for future sustained success.

Benefits and risks of a jurisdictional approach: We asked each interviewee about jurisdiction boundary choices and advantages and drawbacks of taking a jurisdictional approach. This section provides a summary of the responses we heard during those interviews, and it provided input for the report's observations on "scale" (section 2.3).

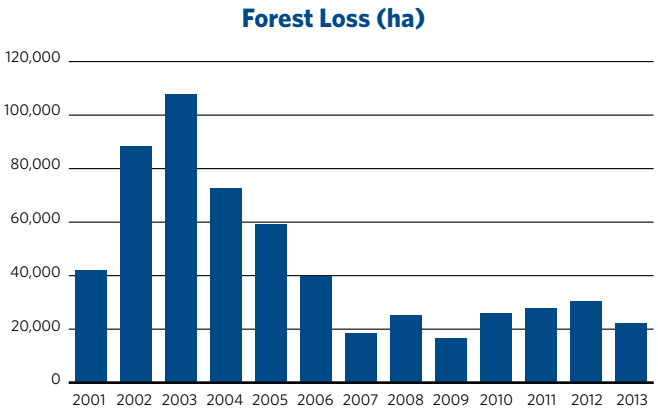
Key challenges and opportunities: This final section was also largely informed by interviews with those working in, and with, the jurisdictions. Those interviewed generally strongly agreed what the jurisdictional key challenges and potential opportunities were. Some common themes expressed across all jurisdictions included a lack of capacity and need for upfront finance for implementation (challenges) as well as the possibility to improve rural development while increasing productivity (opportunities).

The two-page summaries are by no means exhaustive in their coverage of each issue and only intend to provide a quick snapshot of the eight jurisdictions. Even so, they highlight the challenge of doing a comparative analysis across such a diverse set of socioeconomic and political circumstances, contexts, and approaches to managing natural resources, including the protection of forests.

ACRE, BRAZIL



Green represents forest cover as of 2012; red represents forest loss from 2000 to 20012



Basic information

Size: 17 million hectares

Forest cover: 14.9 million hectares (45.7% total area under protection)

Population: 776,463 people

Economy: Biggest export is beef, followed by timber, rubber, and nuts.

Jurisdictional boundary: State, one level down from national

Program status: Strong suite of green development public policies dating back to 1999; state is participating in a number of REDD+ pay-for-performance initiatives.

Deforestation and its drivers

Acre has maintained 86 percent of its original forest cover. The single largest driver of deforestation is cattle ranching, which accounts for 82.5 percent of cleared lands. Secondary drivers include expanding agricultural production and infrastructure projects. Most cleared areas are less than 6 hectares in size, resulting in a patchwork of deforested and degraded land. Protected areas and indigenous lands have the lowest rates of deforestation, with only 8 percent of the area deforested. The rate of forest loss in Acre between 2000 and 2013 was 0.30 percent—an average of 46,200 hectares per year. While Acre achieved a steady decline in deforestation from 2004 to 2009, monitoring since 2010 shows Acre experiencing a moderate uptick in deforestation.

REDD+/LED strategy

A strong suite of public policies and a progressive incentives system in support of green development: *The centerpiece of Acre's low emissions development strategy is a series of public policies which promote a forest-friendly economy, most notably the 2010 Environmental Services Incentives Program (SISA) and associated forest carbon incentive program (ISA-Carbon).*

In 1999, Acre passed the Chico Mendes Law, which created subsidies for traditional forest residents to engage in sustainable extractive enterprises. Since then, the state of Acre has passed multiple laws that establish ecological/economic zoning, land titling, capacity building in sustainable production, and taxes and subsidies in support of sustainable rural livelihoods. The cornerstone of these policies is Acre's Environmental Services Incentives Program, which establishes a legal framework to provide incentives for the delivery of a wide range of ecosystem services, including forest carbon, socio-biodiversity, water resources, climate regulation, and valuation of culture and traditions. Acre has made significant efforts to align its green development program with the Brazilian federal program, using an identical emissions baseline methodology and adopting the national goal to reduce deforestation by 80 percent by 2020. The state achieved 61 percent of its deforestation reduction goal by 2012. Key elements of Acre's green development strategy include:

- Forest carbon incentive program (ISA-Carbon): This system, which falls under the broader environmental services framework mentioned above, focuses on strengthening tenure, promoting sustainable forestry, agriculture, and cattle production,

facilitating the development of low-carbon management plans, and providing technical and financial assistance to stakeholders.

- Leveraging private partnerships: Acre's progressive legislation created the Environmental Services Development Company (CDSA), a private company of which the government is majority shareholder. CDSA allows for partnerships with the private sector on green initiatives. These projects can run autonomously, as long as they are registered in a state-managed registry. The government has also invested in private enterprises that add value to nontimber forest products, such as a condom factory which receives subsidized prices on natural rubber used in production, and a Brazil nut factory.

Incentives: Motivation for creating a green development model in Acre was driven largely by culture and history, catalyzed by the Chico Mendes movement in the 1980s, which fought against expansion of cattle and lumber industries and in support of livelihoods based on sustainable extractive use of forests (e.g., rubber tapping). One outcome of this movement was the creation of the Workers' Party, a political party that has been in power for over two decades and has provided a favorable environment for passage of forest-friendly policies. Additionally, access to international pay-for-performance funding has offered incentives for continued green development in Acre. Since 2012, Acre has been receiving compensation for documented emissions reductions from the German Development Bank, KfW, under their REDD+ Early Movers Program. Acre has also signed an MOU with the state of California to potentially supply offsets to the California carbon cap-and-trade program; however, such sales are dependent on REDD+ being accepted into the California system, which is currently under consideration. Acre is also pursuing the possibility of supplying offsets within Brazil. MOUs have been executed with the cities of Rio de Janeiro and São Paulo to link to their developing carbon markets. Furthermore, Acre is exploring the possibility of selling credits in existing voluntary carbon markets; it is one of the first jurisdictions to pilot the Verified Carbon Standard's Jurisdictional and Nested standards.

Benefits and risks of a jurisdictional approach

Designing a green development program at the state scale made the most sense in Acre, as this was the level where public policy could be enacted and enforced. Additionally, since 1999 when the federal government transferred management of public forests to states, the state government has conducted forest management directly—harvesting resources and channeling revenues to communities. Acre is making use of many existing institutions to implement the program; however, the Environmental Services Incentive System also creates new institutions to allow the state to manage environmental public policies related to carbon, water, use of soil, and biodiversity. Also, Acre is relatively small and experiences less deforestation pressure compared with other Amazonian states, which makes working at the state scale more manageable.

One major risk to taking a state-level approach in Acre is the possibility that the program will get too far ahead of the national program, resulting in discrepancies across the two approaches. Acre is attempting to avoid this problem by closely aligning its policies with those in place at the national level; however, the possibility of future inconsistencies exists because the national program is still in development. Acre's program is also heavily dependent on development of large-scale carbon markets, which have not yet come to fruition.

Challenges and opportunities

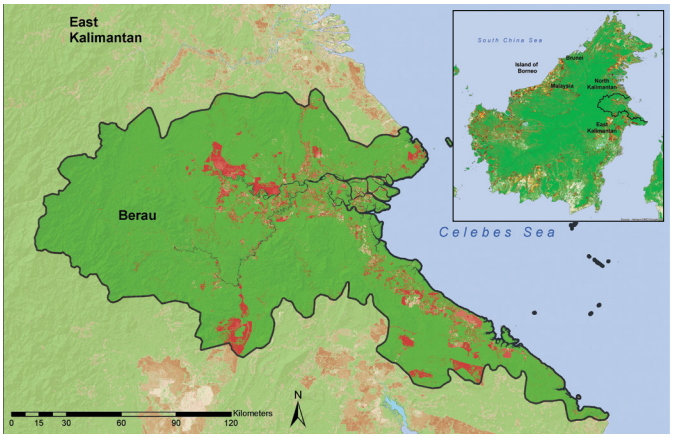
Key challenges:

- Farming and cattle ranching are becoming more attractive as more paved roads increase access to markets;
- Uncertainties exist around how the Acre program will be incorporated into a national program (e.g., nesting, reference levels);
- There is a need for more upfront financing to catalyze capacity building;
- Technical capacity must be built up, as the program currently only has a small number of experts;
- Preliminary 2014 data from Brazil's Institute for Space Research (INPE) suggests an unexplained 41 percent increase in deforestation, raising questions about the sustainability of deforestation reductions.

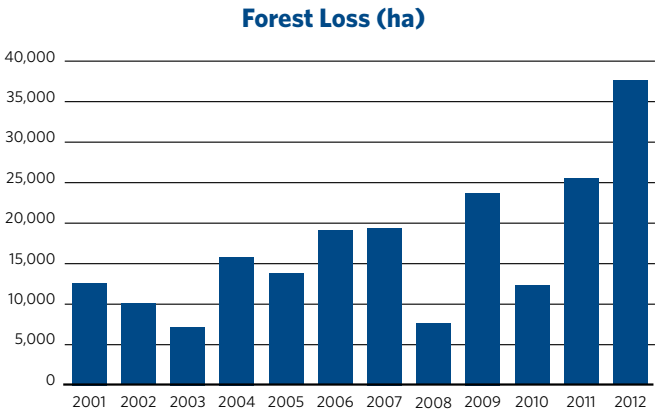
Key opportunities:

- The Workers' Party has been in power for almost two decades, which has resulted in consistent support of sustainable green development by the state government;
- "Florestania" culture, in which people place importance on forests for their intrinsic and sustainable extractive values, has led to broad public support of the Acre program;
- Acre has a strong suite of public policies in support of green development, which reduces uncertainty and makes the program a less risky investment;
- The program has created a vehicle for public/private partnerships through the Environmental Services Development Company and is able to attract private capital for sustainable development.
- Acre is recognized as one of the most advanced REDD+/LED programs in the world, which has enabled it to attract substantial technical and financial support globally.

BERAU, INDONESIA



Green represents forest cover as of 2012; red represents forest loss from 2000 to 20012



Basic information

Size: 2.2 million hectares

Forest cover: 1.9 million hectares (17% under protection)

Population: 201,565 people

Economy: Mining 53% of GDP, forestry 10% of GDP—with roughly 5% of land allocated for mining, 10% for plantation agriculture, and 60% for production forestry

Jurisdictional boundary: District in the province of East Kalimantan, two below national.

Program status: A REDD+ program has been in development since 2008 and became an official country pilot in 2010 (as the first REDD+ district-level program in Indonesia); one of several districts included in Indonesia's Carbon Fund proposal, which was conditionally accepted into the pipeline in 2014.

Deforestation and its drivers

Deforestation and forest degradation in Berau is caused by multiple drivers, including conversion to oil palm, timber plantations, commercial logging, coal mining activities, and swidden-fallow agriculture. Deforestation due to these drivers represented 83 percent of total estimated forest carbon emissions. Emissions from forest degradation due to legal logging activities (skidding, felling, and haul roads) constituted the remaining estimated emissions in Berau, or 17 percent of historic emissions. Between 2000 and 2010, an average of 17,000 hectares of forest was lost annually, at a rate of 0.81 percent.

REDD+/LED strategy

***Combining enabling conditions with site-based investments**: Berau intends to achieve its goals through a set of low-carbon development strategies that include both strengthening the enabling conditions for success as well as investing in specific site-based activities to demonstrate tangible outcomes.*

Strengthening enabling conditions

- ***Planning***: Support economic development strategies, spatial plans, permitting approaches, and private land-use practices to promote low-carbon development, e.g., optimizing the use of degraded land for palm oil and timber plantations.
- ***Governance:*** Support capacity building of key public institutions, strengthen the legal and regulatory framework to support low-carbon development, and enhance transparency and accountability, e.g., pilot the Forest Management Unit (KPH) approach to introduce field-level governance and management of forest landscapes.
- ***Stakeholder engagement:*** Work with local stakeholders to build support, understanding and involvement in low-carbon development strategies. Empower local communities to participate in decision-making.
- ***Finance and benefit sharing:*** Attract upfront funding for the five-year demonstration phase, access pay-for-performance mechanisms for longer term sustainable program funding,

and equitably invest and distribute funds that flow through the program among stakeholders.
- ***Carbon accounting:*** Enhance ability to measure and monitor avoided emissions from multiple strategies across different sites under a unified carbon accounting framework.

Key site-based investments
- ***Communities:*** Engage at least 20 villages in green growth development by investing systematically in village land use and development planning processes, improved governance, capacity building, improved livelihood opportunities (e.g., sustainable timber, agriculture, and agro-forestry businesses), access to basic services, and enhanced tenure security.
- ***Production forest:*** Engage with 13 timber concessions to support a transition to legal, sustainable, and lower-carbon timber management practices and to achieve the new government mandatory certification requirement. Work closely with and support Forest Management Unit (KPH) in monitoring the performance of timber concessions and strengthening community-timber concession collaborative management.
- ***Oil palm:*** Support mapping of suitable sites for oil palm development [with focus on previously degraded areas], integrate information into land-use planning decisions, and pilot incentive agreements to relocate at least 20,000 hectares of existing oil palm permits on forested land to these low-carbon areas. Develop programs to improve the efficiency of oil palm production, reduce its impact on biodiversity and environmental services, and increase benefits to communities.
- ***Protection and conservation:*** Strengthen key district government agencies in charge of overseeing or coordinating the management of the 380,000 hectares of protection forests in the district, support private companies in identifying and managing high conservation value forests within their concessions, and effectively engage NGOs and local communities in the management of protected forests.

Incentives: Communities see incentives to improve livelihoods through the village green development approach, and timber concessions have been moving toward legality and certification thanks to regulatory and market pressures. Incentives to reduce palm oil conversion are challenging—the district government currently gains many benefits by issuing palm oil permits, including tax revenues, job opportunities, and resident income. Many do not yet envision a value proposition strong enough to change practices. Results-based finance may offer a new incentive and opportunity for a shift away from business-as-usual.

Benefits and risks of a jurisdictional approach

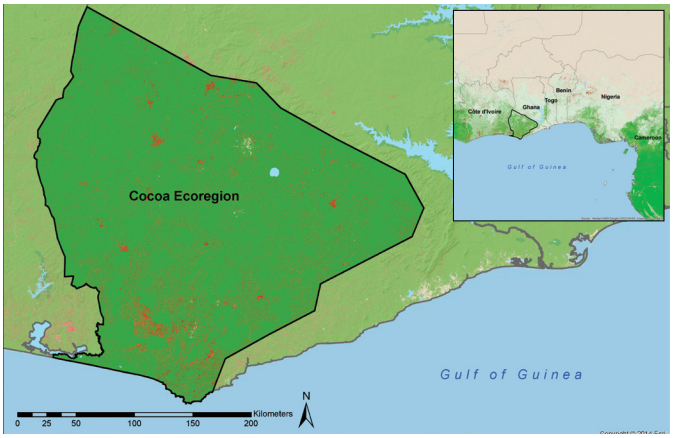
A district boundary was chosen because districts in Indonesia have predominant authority over many land-use decisions as a result of post-Suharto decentralization. Indonesia will need to implement REDD+ at multiple scales, including national, subnational, and project or local levels. Although each level is critical, a district-level approach allows work on enabling conditions, not just site-based activities. This includes development planning and licensing but also technical activities that are more efficient at scale such as district-wide measurement and monitoring of forest loss and associated emissions. A district-level approach also allows for more effective scaling of activities—for example, the program may pilot reduced impact logging in a single concession but over time scale up its plans to multiple concessions by creating streamlined performance monitoring, effective delivery of technical assistance, and an overall regulatory context offering incentives to all concessions in the district.

Challenges and opportunities

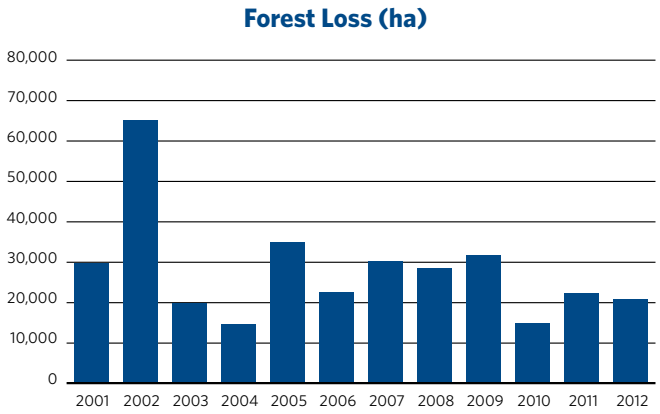
Key challenges:
- Difficulty coordinating across various initiatives in Berau and levels of government in Indonesia;
- Unclear and shifting authority of district and other levels of government;
- Low transparency in licensing and decision-making over land use; low capacity of district government and civil society to implement at the ground level;
- Various policies to support REDD+ implementation—carbon rights, reference emission levels, benefit sharing mechanisms—are not yet established in Indonesia.

Key opportunities:
- Demonstrate how sustainable oil palm development can provide local and national development benefits without high carbon emissions and other environmental impacts;
- Demonstrate how to scale up village green development approaches for the empowerment of communities, improved well-being, and stronger rights and influence over decision-making and land use planning;
- Demonstrate success at the ground level through small grants to NGOs and community groups funded by the Tropical Forest Conservation Act debt-for-nature swap;
- Shape the design of the national REDD+ program based on lessons and experience in Berau, which is currently the most advanced and visible district-level program in Indonesia;
- Access results-based finance through the Carbon Fund or Fund for REDD+ Indonesia.

COCOA ECOREGION, GHANA



Green represents forest cover as of 2012; red represents forest loss from 2000 to 20012



Basic information

Size: 6.1 million hectares (25% of country)

Forest cover: 5.2 million hectares (including 32% closed forest and 68% "open" forest); open forest includes degraded forests, secondary forests, and shaded cocoa farms

Population: 18 million people

Economy: Agriculture (including cocoa, timber, palm oil, food crops)

Jurisdictional boundary: High-forest zone ecoregion, overlaps five administrative regions

Program status: Ghana has been working on REDD+ "readiness" since 2010; was accepted into the FCPF Carbon Fund in 2014, and expects to begin implementation and demonstrate measurable results by 2017.

Deforestation and its drivers

Over the past century, Ghana's economic growth, driven by cocoa and timber production, has come at a cost to its forests. In 1911, Ghana became the top global producer of cocoa and had around 8 million hectares of high forests. Today it produces around a million tons of cocoa per year, but as a result, closed forests have been reduced to 1.5 million hectares. Mining, population growth, and illegal and over-harvesting of wood are more recent drivers of deforestation and forest degradation in Ghana. Between 2000 and 2010, the annual rate of forest loss in the cocoa ecoregion was .51%. Average forest loss exceeded 28,000 hectares a year.

REDD+/LED strategy

***Expanding supply of an internationally traded commodity while enhancing forest carbon stocks**: Ghana's program is defined by the production of a globally traded agricultural commodity: cocoa. Therefore, it requires cooperation from multiple actors—including government, farmers, and the corporate sector. The program seeks to significantly reduce emissions that are driven by the expansion of cocoa into forest areas, while also improving income and livelihood opportunities for farmers and forest users.*

Ghana's strategy, as expressed in its ER-Program Idea Note to the FCPF Carbon Fund, is to achieve emissions reductions through the following interventions, with an understanding that no single intervention will yield the expected results on its own:

1. Facilitate multi-stakeholder dialogue and institutional collaboration;

2. Improve rights and tenure regimes through forward-thinking, innovative implementation of forestry policies to foster a positive change in *de facto* management of trees and forests;

3. Link farmers' and farming communities' access to packages of critical farming resources, which work together to improve yields and incomes, with their adoption of climate-smart practices on-farm and emission reductions management systems across the landscape

4. Manage risks by designing insurance coverage for disease, pests, fire, and climate variability.

5. Implement localized landscape-level planning, develop local by-laws to guide sustainable use of land, agriculture and forest resource use, and support forest law enforcement;

6. Develop an integrated data management platform and MRV system that supports results-based implementation and monitoring at different scales.

Incentives: Tree tenure is one of the most important incentives for the program. Currently, farmers do not own trees on their land, and vesting ownership to them will encourage them to keep trees standing. Additional incentives to farmers are improved access to farming inputs at reasonable prices that help them adopt climate-smart cocoa, and cooperation with the insurance sector in Ghana to mitigate the risk of, for example, variable rainfall patterns. The main incentive for the cocoa industry (including the national cocoa board and international buyers such as Olam) to cooperate in the program is to improve yields and maintain a sustainable cocoa supply in the long term. For communities, food security and maintenance of their livelihoods are key incentives. And for the Forestry Commission, the program is a way to achieve its basic objectives around forest conservation and management, which historically has been a challenge to achieve.

Benefits and risks of a jurisdictional approach

Ghana's choice of an ecoregional (versus political) boundary for its REDD+ program is largely due to the key driver of deforestation—cocoa—as the ecoregion was drawn around the country's cocoa production region. The decision to pursue a programmatic, landscape strategy was largely influenced by recognition of the lack of coordination and planning among implementing agencies, companies, organizations and governance bodies across the landscape. Institutional collaboration is one of the key benefits to taking a larger-scale approach.

Farmers' and forest users' decision-making is driven by economic and policy constraints, including limited access to resources (information, economic, agronomic) and tree tenure regimes that do not incentivize retention of trees on-farm. These barriers could not be addressed at a project level or by any single institution. Integrated approaches can foster large-scale changes in farming practices and land-use decision making, which are required to reduce deforestation and degradation and to foster the growth of forests and trees in the off-reserve farming landscape.

Challenges and opportunities

Key challenges:

- Cocoa is a globally traded commodity and risks fluctuations in demand and pressure on production based on global price;

- Increasing yields and income of cocoa farmers could fuel further expansion—so activities must be accompanied by regulation and enforcement;

- There exists a need for upfront finance, for example to provide extension support at a large scale and for spatial planning;

- The program suffers from low technical capacity and high turnover rate of competent staff, especially those who understand the multidisciplinary nature of the program.

Key opportunities:

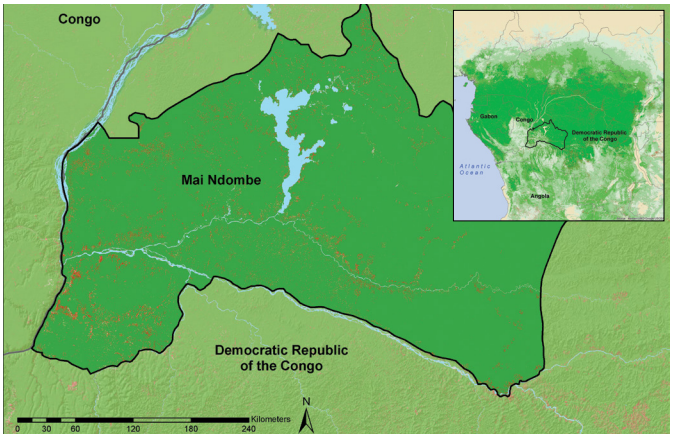
- Reform of tree tenure laws which have created negative incentives to maintain trees on farms;

- Improving the productivity of millions of farmers, and providing them with climate-smart production methods for the future;

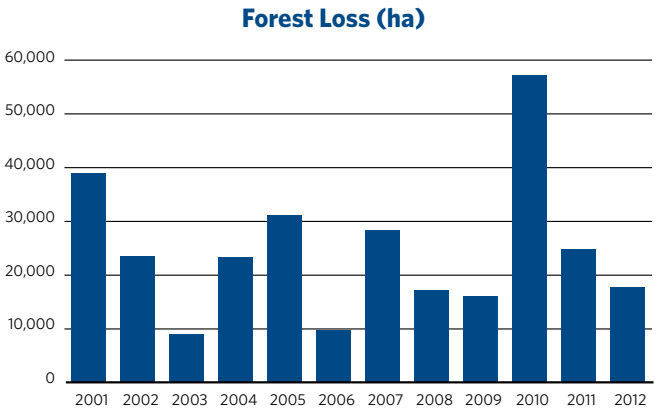
- Institutionalizing cooperation among multi-stakeholders, facilitating future good governance of the sector;

- Demonstrating forest protection while meeting the demand for sustainable supply of an internationally traded commodity.

MAI NDOMBE, DEMOCRATIC REPUBLIC OF THE CONGO (DRC)



Green represents forest cover as of 2012; red represents forest loss from 2000 to 20012



Basic information

Size: 12.6 million hectares (6% of the country)

Forest cover: 10.6 million hectares, mostly primary forest

Population: 1.5 million people

Economy: Traditional, subsistence lifestyles; some logging; many people living in extreme poverty

Jurisdictional boundary: Province, one level down from national

Program status: The Democratic Republic of the Congo (DRC) has been working on its national REDD+ program since 2008. Mai Ndombe was one of the first Emission Reduction programs accepted into the FCPF Carbon Fund pipeline.

Deforestation and its drivers

Despite a relatively low level of historic deforestation (.23% rate of annual forest loss between 2000 and 2010, or an average of 24,800 hectares/year), Mai Ndombe has one of the highest potentials for deforestation in the Congo Basin due to its proximity to Kinshasa and its growing population of 8 million people. Wood energy and charcoal meets 95% of national energy needs. Other direct causes of deforestation and forest degradation include slash-and-burn agriculture, uncontrolled bush fires, industrial and illegal artisanal logging, and improved infrastructure for transportation. Indirect causes include population growth, poverty, weak governance, and low land productivity.

REDD+/LED strategy

REDD+ program designed to directly reward performance of actors: *One unique feature of the Mai Ndombe program in the DRC is results-based payments to specific actors. Similar to Berau, the design of the Mai Ndombe program involves both enabling activities plus emissions reduction activities.*

Enabling and noncarbon activities

- Prioritization of locations and activities;
- Climate change and REDD+ socialization;
- Local governance support, ensuring effective participation, representation ownership, and transparency;
- Strengthening compliance and law enforcement;
- Improved land use planning and management;
- Securing land tenure: (1) reform of the legal and regulatory framework, (2) clarification of land rights, (3) registration of land rights, (4) strengthening of the capacity, and (5) conflict resolution;
- Validation of community forest maps;
- Protection of biodiversity and anti-poaching enforcement.

Emission reducing activities

- Reduced-impact logging;
- Re/afforestation to address demands for timber, fuel wood, and other wood-based products;
- Agroforestry and agricultural intensification;
- Bushfire control for protection of natural regeneration;
- Creation and management of conservation concessions and conservation areas;
- Community forest management to help communities stop slash and burn agriculture, intensify production, move to already deforested lands, adopt agroforestry practices, and improve enforcement;
- Improved energy efficiency, including use of cookstoves.

Incentives: The Mai Ndombe region witnesses many different land uses: forest concessions, agribusiness concessions, mining concessions, protected areas, community customary lands, areas expected to have public infrastructure (such as road construction), and a conservation concession with an existing REDD+ project. Specific incentives are being considered for each land-use type, including potential payments based on actual emissions reductions as well as proxies (such as hectares of reduced deforestation) calculated for each land unit. In this regard, the DRC is considering a REDD+ program that rewards performance in each unit (e.g., individual concessions) that directly contributes to emissions reductions.

Benefits and risks of a jurisdictional approach

A key benefit to taking a jurisdictional approach in the DRC is that it encourages the strengthening of governance and can facilitate clarification of land tenure (which project-scale efforts would be unable to do). In addition, a jurisdictional approach allows the country to pilot an integrated landscape-level program at a manageable scale and create models for the country. Mai Ndombe covers about 5.5 percent of the total area of the country. Even so, those we interviewed suggested that the lack of resources—financial, human, and technical—is a major risk for the program, which has to date been driven largely by external finance and technical support.

While Mai Ndombe is a subnational program, it is largely designed, and will be implemented, by the national government, given weak governance at the subnational level. This could also be seen as a benefit, ensuring coherence with national policies, and also allows the national government to coordinate and prioritize activities that meet the multiple goal of the program (i.e. both carbon and non-carbon benefits).

Challenges and opportunities

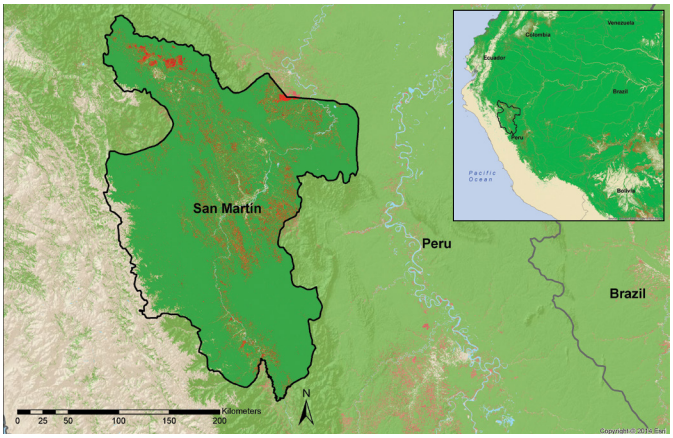
Key challenges:

- Ambitious program covering an extremely large area with insecure land tenure, weak governance and law enforcement, a poor business environment, and high levels of poverty;
- Program requires upfront finance, as well as human and technical capacity to implement program activities—for example, the development of land-use plans for over a thousand villages;
- Cost-benefit analysis is needed for each actor before a benefit-sharing plan can be negotiated among a diverse set of stakeholders who have no experience in working together; will require an unprecedented level of buy-in.

Key opportunities:

- Accessing carbon finance has been a key incentive;
- Beyond emissions reductions, the program seeks to maintain and enhance biodiversity and ecosystem services and improve rural development at a large scale;
- The program also seeks to strengthen statutory and customary rights to lands, territories and resources;
- The structure of the REDD+ program allows for piloting of direct rewards for performance in forest areas.

SAN MARTÍN, PERU



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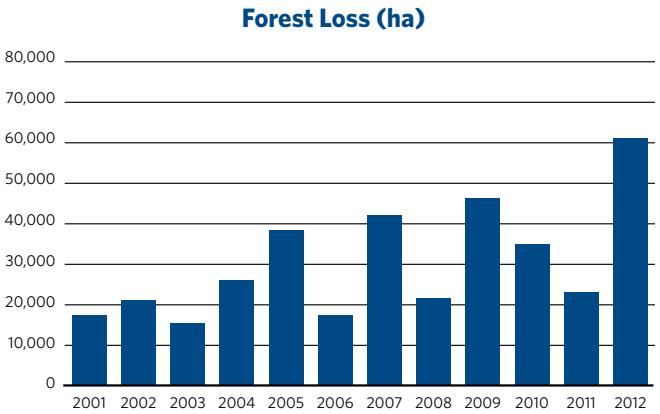


Basic information

Size: 5.1 million hectares

Forest cover: 4.4 million hectares

Population: 818,061 people

Economy: Agriculture 27%, Industry 10%, Services 29% of GDP

Jurisdictional boundary: Region, one level below national

Program status: Peru first applied to FCPF in 2008; chosen as Forest Investment Program pilot country 2010, accepted into Carbon Fund 2014.

Deforestation and its drivers

Deforestation and forest degradation in San Martín are caused by multiple drivers, mainly shifting small-scale agriculture and raising livestock, commercial crops (coffee, cacao, and oil palm), infrastructure development, and mining. Such drivers caused an average annual forest loss of 30,400 hectares and a rate of 0.63 percent between 2000 and 2012. By land category, deforestation rates are highest on farms and in indigenous lands.

REDD+/LED strategy

Generating enabling conditions, capacity building, and sustainable agriculture/forestry*: San Martín intends to achieve its goals through an integrated sustainable landscapes approach aimed at the direct drivers of deforestation and degradation. Here a jurisdictional approach will include command-and-control systems, access to results-based funds, and incentives for adoption of sustainable production systems.*

Strengthening enabling conditions

- ***Planning***: Establishing land-use zoning, formalizing forest concessions and illegal mines.

- ***Governance:*** Providing land title (particularly in indigenous communities), developing systems of land-use monitoring and enforcement , assessing national policies and eliminating those that favor deforestation, strengthening institutional capacities and budgets, and increasing enforcement against illegal harvesting activities.

- ***Stakeholder engagement:*** Including civil society actors in local land-use monitoring and data collection, conducting public workshops, REDD+ Roundtables, and coordinating with indigenous organizations.

- ***Finance and benefit sharing:*** Making access to public funds conditional on deforestation performance, developing financial instruments aligned with forest sector needs, improving inter-institutional capacity for managing shared financial resources, promoting nonmonetary benefits in the form of titling, infrastructure, technical assistance, and other services (details of benefit sharing plan are still being articulated).

Key site-based investments

- ***Communities:*** Building capacity of indigenous communities in community forest management, promoting use of improved farming systems and technical assistance, improving access to credit aligned with agroforestry and conditioned on forest conservation, strengthening farmer organizations, facilitating and improving access to markets for low carbon agricultural products.

- ***Production forest:*** Training in Reduced Impact Logging techniques, improving timber tracking.

Incentives: The San Martín economy has not historically been deeply connected to global or national commodity markets; however, the emergence of cacao, coffee, and palm oil as important products from the region offer opportunities for sustainable supply chain efforts to play a role in the future. Peru is accessing results-based finance from both the Carbon Fund and a multilateral agreement with Norway and Germany. In-country public funding and incentives will also be aligned with the green development agenda.

Benefits and risks of a jurisdictional approach

Typically, REDD+ projects and regional programs have developed more rapidly than the national REDD+ program. More recently, though, the national government has advanced a nationwide approach, including a $300 million multilateral agreement with Norway and Germany and the creation of a national fund, similar to the Amazon Fund in Brazil.

Political will at the subnational level has been critical from the beginning. Initially, political will within the national government for regional efforts existed, but support has recently changed toward a national REDD+ approach that would put subnational jurisdictional efforts in Peru on hold. It is still unclear how subnational jurisdictions will operate in Peru. Also unclear is how existing and validated verified site-level REDD+ projects would be integrated into a national system.

In some cases, clarity about whether authority over natural resources rests with national or subnational governments and also across different sectors is lacking. Although not particularly so in the case of San Martín, corruption is a problem in many subnational governments in Peru.

Challenges and opportunities

Key challenges:

- Regions were established relatively recently, and capacity and resources are limited;

- Lack of continuity in government policies and high turnover of government officials can stall progress;

- Limited government control over land use, due to limited land titling, forest governance, and monitoring;

- Complexity of coordinating across sectors (e.g., to address road construction) and with national government.

Key opportunities:

- Community-level natural resource planning, including for indigenous lands;

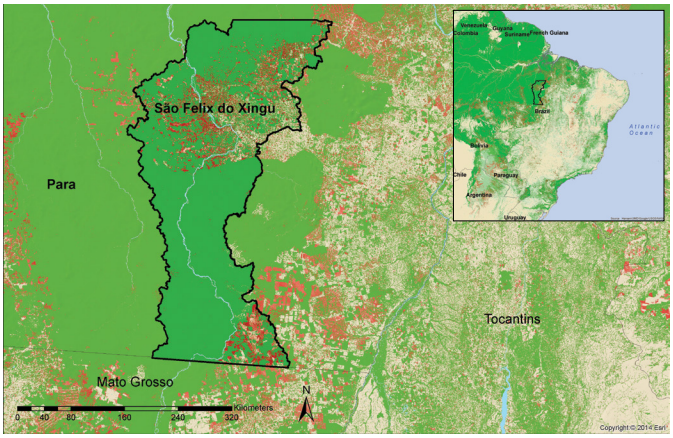
- Availability of degraded lands to expand production;

- Recent results-based finance opportunities with Norway and Germany and World Bank Carbon Fund;

- Recent enactment of regional policies to promote investments in green economic development and to adopt social and environmental safeguards;

- Pilot effort to incorporate ecosystem services values into national accounting systems, planning, and decision-making.

SÃO FÉLIX DO XINGU, BRAZIL



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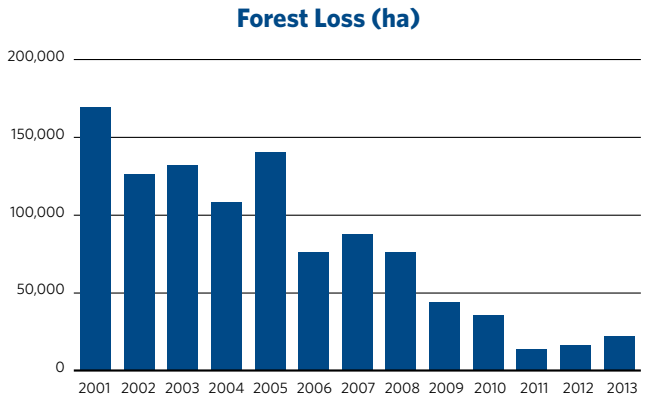


Basic information

Size: 8.4 million hectares

Forest cover: 6.1 million hectares

Population: 106,940 people

Economy: Major production is beef (more than 10,000 family farms) and mining.

Jurisdictional boundary: Municipality in the state of Para, two levels down from national

Program status: São Félix has been taking actions to reduce deforestation ever since being ranked #2 on the national government's "blacklist" of high deforestation municipalities in 2008. The municipality does not refer to its efforts as a REDD+ program and is not pursuing emission reduction "credits," but is instead focused on sustainable green development.

Deforestation and its drivers

Deforestation is driven mainly by cattle ranching. São Félix do Xingu has the largest herd of cattle in Brazil—more than 2.2 million head—and one of Pará state's highest deforestation rates (1.19 percent from 2000 to 2013). Furthermore, the municipality is located on the front line of uncontrolled beef expansion—at the frontier of the arc of deforestation in the Amazon. Traditional cattle ranching in the municipality typically follows the same trajectory: removal of timber, soil exhaustion, land degradation, abandonment, and deforestation of new areas. This has resulted in an average 85,500 hectares of forest lost each year from 2000 to 2012. It is important to note that deforestation in the municipality of São Félix do Xingu has been on the decline, particularly between 2009 and 2013 (average annual forest loss 26,400 hectares per year), due largely to many of the efforts described below.

REDD+/LED strategy

From "command-and-control" to positive incentives and green growth: *The success to date of São Félix do Xingu has largely been driven by national and state government policies and enforcement that discourage high levels of deforestation; going forward the focus will be on creating positive incentives, such as intensified cattle ranching, expansion of high-value crops such as cocoa for settlement communities, and green development planning for indigenous communities.*

São Félix do Xingu was among the first entries on the Brazilian government's "priority municipalities" (sometimes called the black list). This program targeted municipalities with the highest deforestation rates in the Amazon, including an embargo on the sale of goods produced on illegally deforested areas, reduced access to credit lines for farmers from the Bank of Brazil, and active enforcement by IBAMA (the agency responsible for issuing environmental fines). In 2011, more than 40 local institutions signed a Pact for Ending Illegal Deforestation, in part to aid the municipality in removal from the black list, and a commission was formed to oversee the Pact and to coordinate land registration, monitoring, and sustainable development activities.

The São Félix do Xingu program has developed a strategy around intensification of cattle production, which is the biggest driver of deforestation in the municipality. Standard practices for both small- and large-scale cattle production are low intensity and highly degrading to the landscape, requiring new forest to be cleared every seven years. Through the program, cattle producers are receiving support to implement more efficient practices that avoid soil degradation and allow more cattle to be raised on the same amount of land, reducing the need to clear additional forest. Commitments from corporations to eliminate deforestation from their beef supply chains (e.g., Walmart and Marfrig), have aided in promoting these more sustainable practices.

Additionally, cacao fruit production is being promoted among smallholders. Since cacao is a shade grown crop, its production serves as a driver of reforestation on previously degraded lands. Additionally, it provides smallholders with an alternative to unsustainable cattle production. Partnerships have been formed with corporations such as Cargill, who are interested in purchasing cacao produced in São Félix do Xingu, creating increased demand for this sustainable alternative.

Incentives: As private lands are registered through the CAR system, deforestation is linked with actual properties and property owners, creating accountability for deforestation. In addition to government-imposed regulations such as this, the municipality will require positive incentives to shift to more sustainable production if drops in deforestation are to be sustained. In 2013, the State of Pará established the Green Value Added Tax formula, in which existing forest area, percent of CAR registration, and deforestation trends were added as criteria for allocating tax revenues to municipalities. This source of additional revenue (potentially climbing to $1 million USD per year for São Félix do Xingu over the next three years) serves to provide further incentives to reduce deforestation. Additionally, the state-level Pará Green Municipalities Program aims to reduce deforestation and support sustainable agriculture and ranching, landscape planning, and land titling. Finally, a financial mechanism called the "São Félix do Xingu Green Development Program" is investing in sustainable development activities including the sustainable agriculture and ranching mentioned above, improved land use planning, and implementation of Territorial and Environmental Management Plans by indigenous communities.

Benefits and Risks of a jurisdictional program

Pará covers 125 million hectares; therefore starting at the scale of a municipality is a more manageable size. Moreover, key government programs are implemented at the municipal scale, such as the federally driven "priority municipalities" list, the Green Value Added Tax and Pará's Green Municipalities Program. The São Félix do Xingu program has the support of the municipal government, which is trying to align policies with the goals of the program. Companies that purchase commodities produced in the region also support the program.

A major challenge of managing a program in São Félix do Xingu is the multiple types of land in question. São Félix do Xingu includes municipality-controlled conservation areas (parks and reserves), federal indigenous territories, private lands, as well as settlement areas—some of them extending beyond São Felix do Xingu municipal boundaries. Creating a coherent and coordinated municipal plan, with multiple stakeholders—indigenous communities, ranchers, smallholders and others—and finding common ground in a region with a history of land conflicts, is an ongoing challenge.

Challenges and opportunities

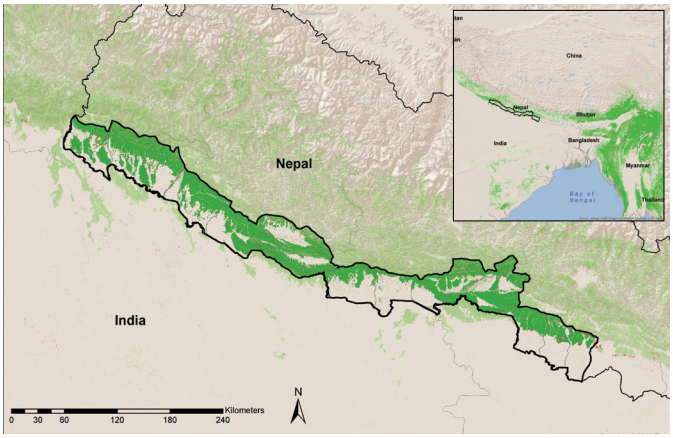
Key Challenges:

- São Félix do Xingu is far from any major urban area and has limited capacity, including municipal government staff, to implement across the entire municipality;
- Need for additional extension services to increase productivity at scale;
- Over 200,000 hectares of previously deforested land continue to be out of compliance with the Forest Code, and these landowners face exclusion from the responsible beef supply program if they do not reforest mandated areas;
- Clear land titling remains a barrier to accessing credit.

Key Opportunities:

- Integration of international supply chains into sustainable green development through partnerships with corporations committed to purchasing deforestation-free beef.
- Piloting of sustainable cocoa production with 100 local farms in cooperation with Cargill and local cooperatives, which has the potential to be scaled across the Amazon and targets a source of deforestation (properties smaller than 25 hectares) that had not previously been successfully addressed;
- Progress made by indigenous peoples in developing sustainable management plans for their traditional lands and reducing the outside encroachment that results in deforestation;
- New market for "forest offsets," in which farmers can satisfy their Forest Code requirements by protecting forested areas in other locations.

TERAI ARC, NEPAL



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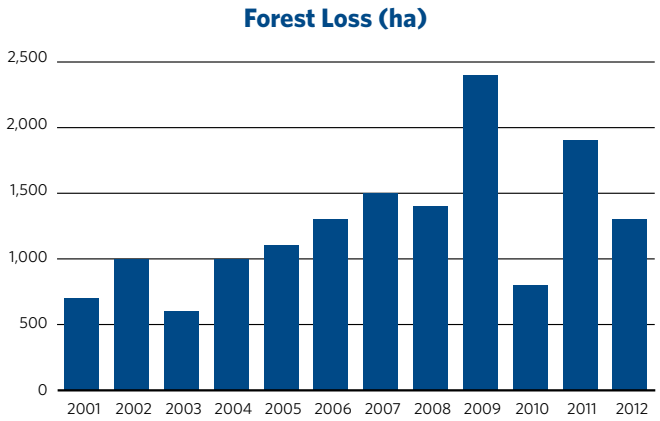

Basic information

Size: 2.3 million hectares (15% of country)

Forest cover: 1.1 million hectares (21% in protected area)

Population: 7.35 million people

Economy: Largely agricultural, subsistence, and commercial

Jurisdictional boundary: Combination of twelve districts across six zones, two levels down from national

Program status: Nepal began its readiness process in 2008 and has progressed through the FCPF process, submitting an R-PP in 2010 and getting admitted into the Carbon Fund pipeline in 2014.

Deforestation and its drivers

Forest degradation is the largest source of emissions in the Terai Arc Landscape. Direct drivers of degradation include unsustainable and illegal harvesting of forest products, overgrazing, and forest fires. Deforestation also occurs, averaging 1,200 hectares per year (a rate of .11%), and conversion is largely due to encroachment, resettlement (people moving from the mid-hills to areas with more productive soils) and infrastructure development. Other reasons why deforestation and forest degradation have been increasing include: insufficient resources and capacity to implement improved land use planning, weak forest monitoring and law enforcement, rapid political transformation and high expectation of people for economic opportunities.

REDD+/LED strategy

Building on a history of successful conservation and community forestry practices*: Actions taken in the 1990s were successful in reducing Nepal's deforestation rates in the Terai Arc landscape. More recently, the Terai has come under new pressures (described in the main report), and emissions from forests have begun to rise again in the past decade. That said, a number of active NGOs, development partners, and government programs provide a legacy and tradition of forest conservation and governance, as well as capacity and institutions—a foundation that a new program in the Terai to reverse recent upward trends can build upon.*

The ER-Program that Nepal has proposed for the Terai Arc landscape includes five major intervention strategies:

1. Increasing supply of forest products, conserving forests and enhancing carbon stocks through sustainable management of forests, improvement in forest law enforcement and governance, and maintenance of conservation in protected areas.

2. Reducing demand of fuelwood with expansion of alternative energy, e.g., biogas plants and cookstoves.

3. Integrated land-use planning to reduce forest conversion while advancing needed infrastructure.

4. Increasing supply by engaging the private sector in sustainable production and value chain of forest products to bring new forest production to degraded lands.

5. Enhancing alternative livelihood opportunities to address underlying drivers.

Incentives: Our survey and interviews indicated that the two most important incentives for success in the Terai are supportive, well-enforced domestic policies and results-based finance. As a least developed country, external incentives and support such as climate finance provide strong motivation to promote additional activities that protect forests—particularly where no countervailing government actions are at play, such as the large subsidy programs found in emerging economies. Success to date in Nepal has been attributed most strongly to community-based approaches and the role of external finance, particularly overseas development assistance.

Benefits and risks of a jurisdictional approach

Nepal has chosen to begin at a multi-jurisdictional scale, i.e., the 12 districts of the Terai Arc landscape, which is an ecoregion with similar characteristics and a manageable scale to succeed. Another reason is that forests in other areas—for example, Nepal's mountainous regions—have low carbon stock and therefore low mitigation potential; emissions reductions programs in such regions might have heavy burdens in their costs of monitoring, reporting, and verifying emissions. Furthermore, starting at a national scale would introduce complexities given the ways the natural resource use and management differ in the country's various regions and ecosystems. Therefore, it was a practical choice to begin in the Terai before considering scaling up to a national level.

Nepal's ER-PIN lists further reasons why the Terai Arc is a good choice. These include its high biodiversity significance, the strong linkage between forests and livelihoods (and therefore benefit of implementing programs that increase the sustainability of forests), the economic importance of both tourism and high-value timber species in the landscape, and finally its cultural significance, as the Terai is home to indigenous peoples with traditional values associated with natural resource management.

Challenges and opportunities

Key challenges:

- The level of political commitment of the government is not yet clear;
- The program will need upfront investments that have yet to be identified;
- Human and technical capacity to implement program activities is lacking, particularly within government, which has many programs similar to those in the ER program already in its mandate but which have not yet been implemented;
- Implementation will be at the district level, where institutional structures exist; however, the 12 districts' circumstances differ somewhat, presenting a challenge if performance were to be rewarded across the entire Terai Arc and not to individual districts.

Key opportunities:

- Combining conservation with improving rural development and livelihoods of communities who depend on forests;
- Leveraging existing local institutions and NGOs that have capacity and a track record of successful conservation activities;
- Harmonizing domestic and donor finance to implement activities under the ER program;
- Accessing climate finance and demonstrating how results-based payments can provide incentives for forest protection.

YUCATAN PENINSULA, MEXICO

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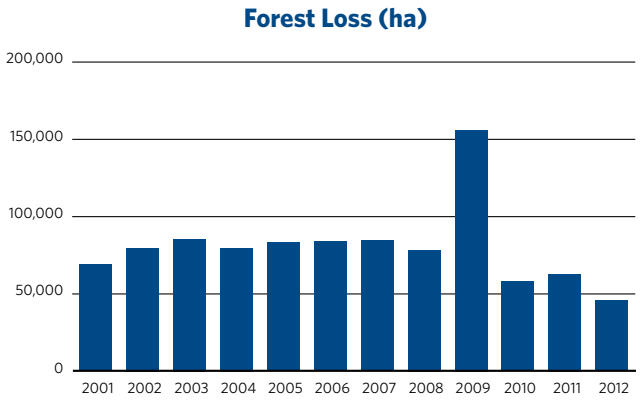

Basic information

Size: 13.8 million hectares

Forest cover: 6.1 million hectares

Population: 4.1 million people

Economy: Mixed; forestry, agriculture, ranching, mining, and tourism

Jurisdictional boundary: Three states, including Campeche, Quintana Roo, and Yucatan; one level down from national

Program status: Agreement to cooperate signed 2010, joint strategy developed in 2011; has accessed funds through Mexico's Special Program for the Yucatan, the Forest Investment Program and USAID; in 2014, Mexico accepted into the Carbon Fund pipeline—its proposal covers five states, including the three Yucatan states.

Deforestation and its drivers

Annual forest loss in the Yucatan Peninsula has been estimated at 80,600 hectares between 2000 and 2012, or a rate of about .72%. Conversion to agriculture is the main driver of deforestation. The expansion of cattle ranching, tourism and urban development are also a drivers, although to a lesser degree. Forest degradation is driven by unsustainable forest management, overgrazing, firewood extraction, fires, forest diseases and pest infestations.

REDD+/LED strategy

Achieving net-zero emissions from deforestation while promoting sustainable rural development: Through the Yucatan Peninsula Sustainable Rural Development Initiative, the three states aim to halt deforestation across the Peninsula by 2020 while adopting high-productivity, sustainable practices in forestry, ranching, and agriculture. Under Mexico's community land tenure ("ejido") system, 70 percent of forests are owned and managed by indigenous peoples and local communities, who depend on agriculture for their living. However, incomes are low, causing people to seek opportunities elsewhere. As migration increases, ejidos face pressure to convert traditional forest-friendly practices to other less-friendly practices (e.g., ranching)—which requires less labor and are supported by government subsidies.

The Yucatan Peninsula Sustainable Rural Development Initiative is made up of a number of activities that include local-level or site-based demonstration activities, as well as collaborative work at the jurisdictional scale, such as:

Undertaking landscape-scale planning and zoning processes:

- Finalizing a map of Go/No-Go Zones to prioritize areas for intensification of agriculture and ranching versus conservation and sustainable management in the Peninsula, with buy-in of government and the private sector;

- Completing state and regional REDD+ strategies, aligned with the national REDD+ Strategy.

Piloting climate-effective sustainable rural development activities:
- Launching a small grants program to test site-based implementation of improved productive practices in agriculture, ranching, and forestry throughout the Peninsula;
- Promoting replication of successful activities through the Yucatan Peninsula REDD+ Learning Community and commodity-specific Communities of Practice.

Providing sustainable finance:
- Designing a Peninsula Climate Change Action Fund, which will invest in catalytic activities identified in the Yucatan Regional Climate Change Plan;
- Piloting "Procampo Verde," a sustainable agriculture subsidy program that aims to provide concrete lessons for reforming other rural subsidies;
- Piloting a "green ejido" methodology, in which participating ejidos obtain preferred access to sources of economic support (e.g., state-managed rural incentive programs, climate financing).

Measuring and monitoring results:
- Launching Maya Forest Watch, a collaborative forest monitoring system to guide land-use decisions and provide an alert system to monitor and respond to deforestation events in real time;
- Creating a statewide social and environmental safeguards system to reduce risks of negative impacts and maximize potential co-benefits.

Incentives: The three states of the Yucatan are driven by multiple incentives, including a desire to join the national government's leadership on climate change mitigation and address concerns about adaptation. Leaders also see opportunities to access new finance for the environment—through domestic funding opportunities, but also international payments for results (e.g., the FCPF Carbon Fund). Also, states have a strong interest in being able to influence the federal government's decision-making on how larger funds are spent—rural subsidy programs, for example—to meet the states' climate change and development goals.

Benefits and risks of a jurisdictional approach

In 2010, the three governors of the states of the Yucatan Peninsula signed an agreement committing to work together on a regional approach to climate change, an agreement which would reduce deforestation while increasing agricultural production. The three states were a natural partnership, as they share the Selva Maya ecosystem and face similar drivers of deforestation and forest degradation across boundaries. The states also believed that a joint program would be a more attractive proposition to the international donor community.

Although the three states share commonalities, their differences include different sets of laws, governors, histories (Campeche is much younger than the other two), capacities, extent of forested lands, and economic interests (Quintana Roo, home to Cancun, is largely interested in tourism). Such differences can introduce complexities in coordination. Demonstration projects have proven to move faster than jurisdictional level work—partly because the states must ensure compliance with federal law, which makes for a stronger, but slower process. State-level transparency is an additional challenge. However, politicians have shown interest in the regional program and recognize the potential benefits that such a program can provide.

Challenges and opportunities

Key challenges:
- Government has ambitious targets on production to meet domestic demand:
  - » Aim is to double timber production by 2018;
  - » Agricultural subsidies to the Peninsula exceed $1 billion per year; influencing them is a critical element of the program, but one of the hardest;
- State-level capacity is lacking, including ability to manage and participate in multiple processes;
- National government is slow to provide guidance on state-level REDD+ plans and clarifying responsibilities at national vs. state level;
- Degradation accounts for much of the carbon loss but remains hard to measure.

Key opportunities:
- Ecosystem-wide aspect to the strategy provides synergies and has also been attractive to donors;
- Potential to demonstrate the use of results-based finance to catalyze a broader suite of actions (e.g., reform of land management, subsidies);
- Improving rural poverty, and connecting this priority of the national government with the climate change agenda;
- Demonstrating environmentally sustainable land-based production that requires transition costs but is economically sustainable in the long term.


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WORLD BANK GROUP
Climate Change