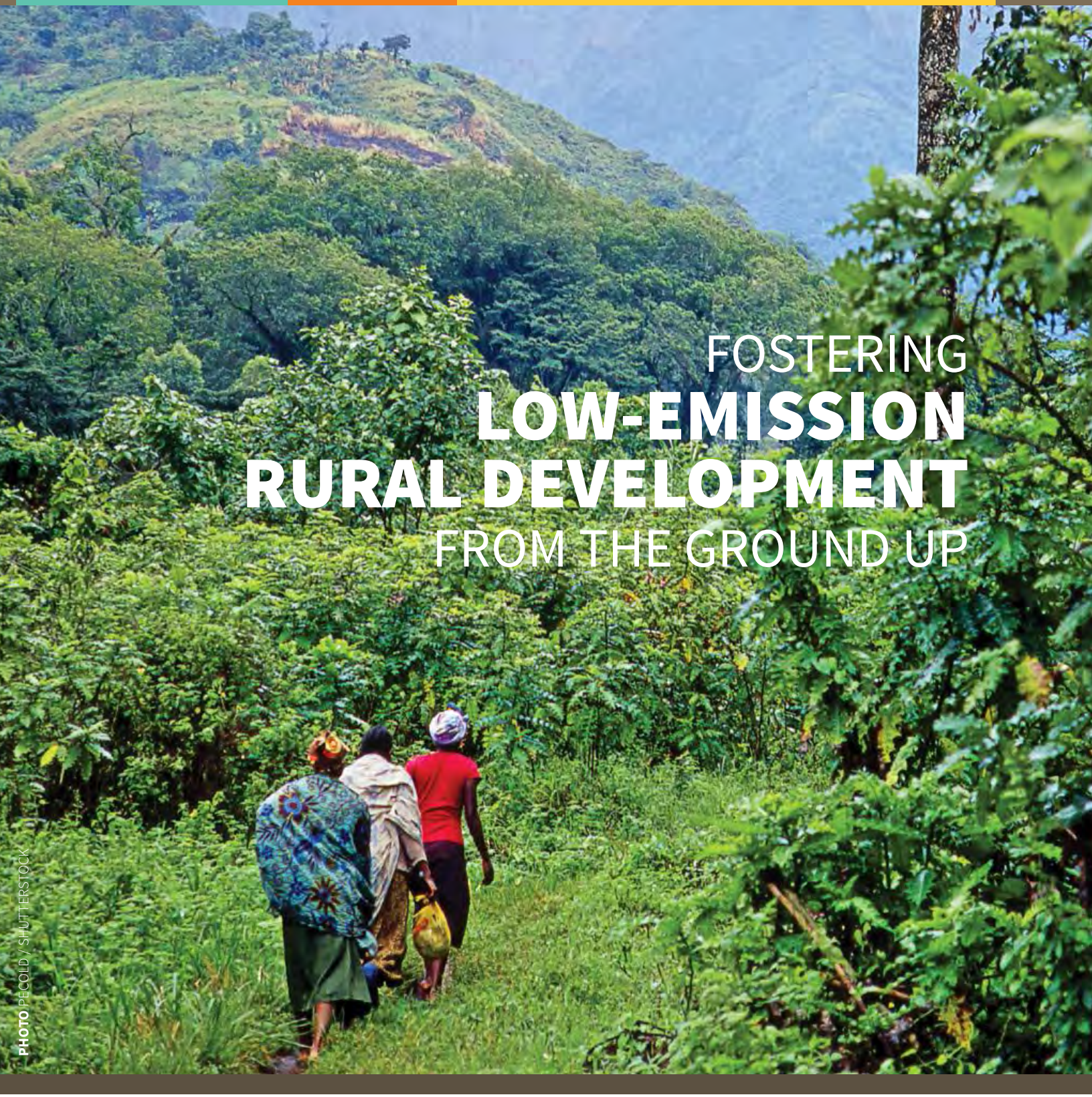

FOSTERING LOW-EMISSION RURAL DEVELOPMENT FROM THE GROUND UP

PHOTO PECOLD / SHUTTERSTOCK

SUSTAINABLE TROPICS ALLIANCE

Earth Innovation Institute

IPAM Instituto de Pesquisa Ambiental da Amazônia

the green belt movement

INSTITUTO DEL BIEN COMÚN

FIELD

pro natura sur, a.c.

FOR MORE INFORMATION http:/earthinnovation.org/our-work/global/sustainable-tropics-alliance/

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EXECUTIVE SUMMARY

- **No Silver Bullets:** Corporate and national government commitments to reduce deforestation are extremely difficult to implement on the ground. Governments, businesses, farmers, communities and civil society must be at the table to drive the transition to low-emission rural development (LED-R).
- **Many Jurisdictions Still Lack Performance Targets and Reference Levels:** Acre and Mato Grosso, Brazil and Chiapas, Mexico are important exceptions.
- **Lack of Alignment Across Policies & Initiatives:** Many policies and initiatives that influence land-user decisions are still at odds with one another. Multi-stakeholder dialogues can broaden support for shared regional performance reference levels and milestones, especially if the incentives for achieving those milestones are part of the discussion.
- **REDD Finance has Not Reached Most Jurisdictions:** REDD finance has been slow to reach subnational jurisdictions, with important exceptions. Incentives for supporting LED-R must also be found in domestic policies and programs.
- **Performance-Based Incentives Could Play Critical Role:** Be they financial, regulatory or contractual, these incentives systems can reward performance at the farm and jurisdictional level, pushing progress towards time-bound performance milestones.
- **Forest Monitoring Weak Outside of Brazil:** Most nations have developed forest monitoring systems, but only Brazil makes reliable, annual maps of new deforestation available on the internet. Others could follow soon.
- **Land Rights Advanced in Latin America and Progressing in Indonesia:** Legal protection of indigenous and community rights to land is more advanced in Latin America. However, in Indonesia a recent Constitutional Court decision on customary land rights provides a foundation for progress. Border defense is usually still the communities' responsibility.
- **Smallholders Neglected:** Small-scale farmers are generally excluded from LED-R processes. With numerous small landholdings, usually without formal land titles, it is more difficult to include them in supply chain initiatives, support them through rural extension, or finance them through credit programs.
- **Multi-Stakeholder Dialogues Patchy:** Several regions have multi-stakeholder processes underway, while some are just beginning. Indigenous people and smallholders generally have less decision-making power than governments and private sector actors, such as large-scale farmers and financers.

BUILDING A COMMON AGENDA FOR SUSTAINABLE RURAL DEVELOPMENT AND CLIMATE CHANGE IN THE TROPICS

- The impacts of climate change are and will be most acutely felt by rural populations who are dependent on ecosystem goods and services to meet a broad range of their needs.
- In the Tropics, conversion of native vegetation to pasture and croplands is a double-edged sword: it is a way for people to secure or improve their livelihoods, but also a source of 1/6 of global greenhouse gas emissions that may exacerbate local and regional impacts of climate change.
- Tropical regions face an increasingly complex challenge: How can societies successfully advance rural development in a way that improves local and regional well-being while also meeting their expanded role in terms of climate change and food security?

Climate change is predicted to have severe impacts on communities around the world, affecting water availability, food security and agricultural incomes.[1] These impacts are most acutely felt by rural populations whose vulnerabilities and exposure to climate change may be exacerbated by their dependence on ecosystems and the services they provide in order to meet a broad range of needs. Tropical forest regions are especially critical. Rural populations, historically on the social, political and economic margins of society, are now increasingly in the spotlight with growing international attention to the contribution of GHG emissions from land use change, especially deforestation, to climate change. At the same time, these regions face increasing environmental and social pressures in the global scramble to meet growing demands for food, fuel and fiber production. Struggles over access and rights to land and natural resources, sometime violent, further hinder the alignment of diverse interests around a long-term vision for rural development.

THREATS TO TROPICAL FOREST REGIONS

In the Amazon, cattle and soy producers and family farmers push further into forested regions in the south and east, while oil and mining corporations cut new roads into the basin from the West.

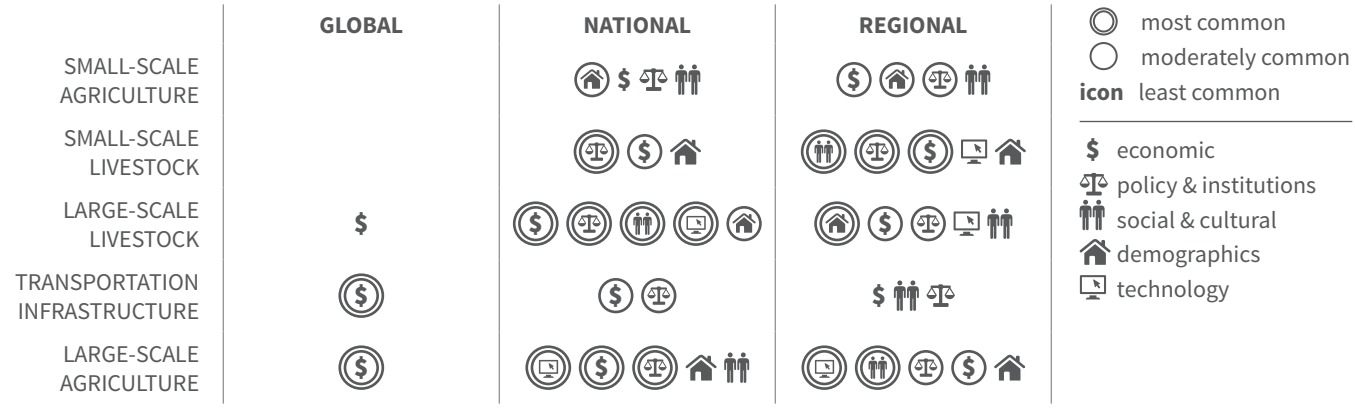
In Indonesia, large swathes of primary forest—often on carbon-rich peat soils— are cleared to establish new oil palm plantations.

Within these dynamic contexts, sustainable development and climate change adaptation and mitigation may remain at odds. On the one hand, narrowly defined climate mitigation and adaption policies (such as the Clean Development Mechanism) do not necessarily support sustainable development agendas, and may even exacerbate existing inequalities[2]. On the other hand, development agendas (such as the Millennium Development Goals and myriad national and regional plans) aim to improve human well-being without

1 **IPCC**, 2014: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1132 pp.

2 Boyd, E., 2009. Governing the Clean Development Mechanism: global rhetoric versus local realities in carbon sequestration projects. Environment and Planning A 41,2380–2395; Sutter, C., Parreño, J., 2007. Does the current Clean Development Mechanism (CDM) deliver its sustainable development claim? An analysis of offcially registeredCDM projects. Climatic Change 84: 75-90.

THE MAIN DRIVERS OF DEFORESTATION ACROSS EIGHT TROPICAL REGIONS



+ Figure 1 Each icon represent an array of underlying factors driving deforestation that may operate at global, national or regional scales: *Economic* (markets, economic costs/returns of land use activities, poverty and economic shocks); *Policy & Institutions* (formal policies, policy climate, property rights, and regime change); *Social & Cultural* (public attitudes and beliefs, household, individual or firm behavior); *Demographic* (population growth, migration and urbanization); *Technology* (technological change; agricultural production factors). The gradient of most common to least common indicates the degree to which the underlying factors contribute to each of the most significant drivers of deforestation in our analysis of 8 tropical forest regions.

- Small-scale agriculture (farming & livestock) is the most universal high-impact driver of deforestation across all focus regions.
- The underlying causes of smallholder drivers of deforestation are predominantly demographic, economic, and political and are overwhelmingly regional and national in character.
- Large-scale agriculture, ranching and transportation infrastructure reflect national and regional responses to global market demands.
- Road construction into new forest frontiers is driven largely by market demands and national and regional policy objectives.
- Economic, political and institutional, cultural, and demographic factors are more common drivers of deforestation than are social and technological factors, except in the case of large-scale agriculture.
- While commercial logging, household wood consumption, charcoal and illegal crops are the least common high-impact drivers of deforestation across regions, they are highly significant in some regions (such as Kenya and Colombia). In many areas, these activities indicate an active pre-agricultural frontier.

specifically targeting emissions reductions (although the Rio+20 Sustainable Development Goals aim to rectify this). It is widely acknowledged that fundamental transformations are needed to mitigate climate change impacts and to forge new models of climate resilient rural development. Yet to date efforts to integrate climate policies into the development agendas of tropical forest regions have been stymied by lack of coordination and collaboration across sectors and scales of government, technical capacity, and long-term vision for rural development, as well as difficulties connecting global finance for climate change mitigation and adaptation to local development agendas.[3]

Ultimately, resource management hinges upon the day-to-day decisions made locally by farmers, ranchers, policy-makers, investors and others. Too often, however, policies in tropical forest regions are made by the minority of affected parties or may be imposed from the outside by national or even international actors ("top down"). Recent declarations by influential multi-national companies (with support from major national governments)—including Unilever, Cargill, IKEA and other members of the Consumer Goods Forum and the Tropical Forest Alliance—to eliminate deforestation and human rights abuses from their supply chains have garnered substantial attention. However, on their own, these commitments are not enough. Innovative, holistic approaches are needed to integrate climate change mitigation and adaptation goals with concerns for human well-being. These approaches, developed and applied at a regional or jurisdictional scale, must be both pragmatic and visionary, engage all sectors, and eventually form part of a comprehensive policy framework.

3 **IPCC**, 2014: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1132 pp.

WHY

LOW-EMISSION RURAL DEVELOPMENT?

A FRAMEWORK FOR LARGE-SCALE, BOTTOM-UP SOLUTIONS

- Top-down strategies for slowing deforestation and reducing greenhouse gas emissions are failing to penetrate regional development strategies and improve well-being.
- Innovative, holistic approaches that integrate climate change mitigation and adaptation goals with the concerns for human well-being and that engage a range of relevant actors are needed.
- Solutions to deforestation, fisheries depletion and other challenges must be anchored in local societies, economies, policies, and business models.
- Low-emission rural development (LED-R) is sustainable development, designed to reduce impacts on climate.

CHARACTERISTICS

OF REGIONAL LOW-EMISSION RURAL DEVELOPMENT

- Climate stability through reductions in greenhouse gas emissions from land-based activities is an explicit goal
- Encompasses regions or jurisdictions (natural or political)
- Engages the range of actors through multi-sector, participatory approaches
- Seeks to align policies, institutions and initiatives to improve natural resource governance
- Recognizes the need for territorial security and the role of traditional forest stewards
- Empowers local institutions to drive positive change at scale
- Emphasizes bottom-up approaches
- Uses sound research to support decision-making

Low-Emission Rural Development (LED-R) is an example of this new approach in which climate stability is an explicit goal, which focuses on rural populations and that integrates concerns for both socioeconomic development and environment. The principle aims of LED-R are to contribute to lowering greenhouse gas emissions associated with land use (especially deforestation), while empowering local actors and institutions to maintain healthy ecosystems, respond to climate change, ensure human well-being, promote equitable social systems and achieve sustainable economic development. While similar to government regional planning initiatives in its scale and extent, LED-R is distinguished by its focus on multi-sector, participatory approaches that incorporate robust research into decision-making processes, engage industry, build local capacity and empower local institutions and civil society to drive positive change at scale. LED-R also has an implicit objective of ensuring that traditional resource management systems do not fall victim to a focus on carbon.

THE GOAL OF THIS REPORT

In this report, we describe the characteristics of low-emission rural development (LED-R)—a jurisdictional or regional approach to sustainability—using examples from eight regions in the Tropics. We assess each region's potential for and progress in moving toward LED-R. We identify the key actor groups in each region, describe their dynamics, and discuss the potential roles each group could play in the transition to LED-R. We summarize the barriers and opportunities for LED-R to take hold across the regions. We conclude by compiling the key messages of our analysis and provide recommendations for policy-makers and stakeholders alike to consider.

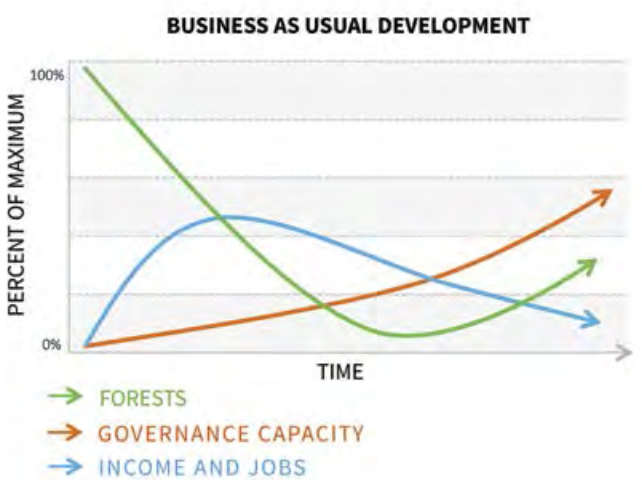
Throughout this report, we provide examples from among eight tropical regions in which Sustainable Tropics Alliance[4]

4 The Sustainable Tropics Alliance is a strategic partnership of independent, non-governmental organizations that focus on fostering sustainable low emissions land use and natural resource management in key regions of the Tropics. The founding members of the Alliance are Earth Innovation Institute (Brazil, Indonesia, Colombia), Pronatura-Sur (Mexico), the Instituto del Bien Común (Peru), the Instituto de Pesquisa Ambiental da Amazônia (Brazil), and the Greenbelt Movement (Kenya).

members are facilitating multi-stakeholder processes to develop and implement low-emissions rural development strategies at jurisdictional or other sub-national scales: Acre, Mato Grosso and the Lower Amazon of Pará States in Brazil, the Pachitea Watershed in the Peruvian Amazon, Chiapas State in Mexico, Central Kalimantan Province in Indonesia, the Five Water Towers of Kenya (Mt Kenya, Aberdare Range, Mau Complex forests, Cherangani Hills and Mt Elgon), and Colombia's forest regions.

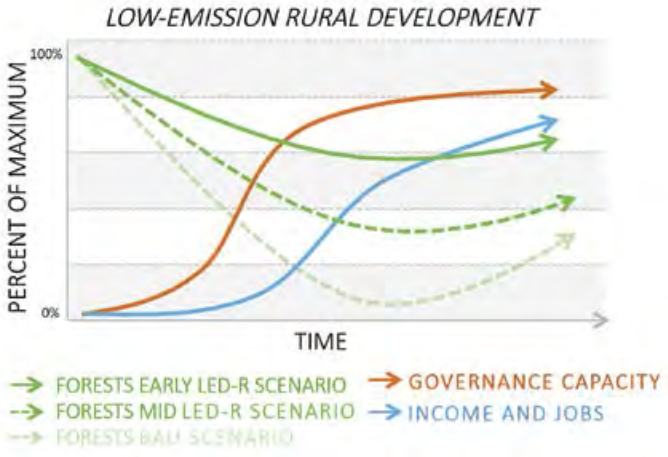
WHAT IS
THE PATHWAY TO CHANGE?

Patterns of forest conversion for agricultural and livestock expansion are considered to be predictable enough that they have led to the concept of the "forest transition"[5] (Figure 2). As nations or regions progress along their economic development trajectory—typically fuelled by agricultural expansion and industrialization—they tend to clear native vegetation. This brings a variety of benefits associated with increased agricultural production. But it is also accompanied by many negative impacts, including increased carbon emissions, changes in water quality, loss of forest connectivity, and potential destabilization of regional hydrological and climate systems, increasing rural-to-urban migration (particularly away from family farms), and, often, increased income disparity and political tension. Eventually, as incomes rise and political stability increases, the forest transition model posits that forest cover will begin to increase. The overall trend describes something of a Kuznets curve for forest cover.[6]



+ Figure 2

Because of the negative impacts of following this path and the urgency of reducing greenhouse gas emissions, more benign alternative sustainable agricultural and livestock systems are preferable. These are characterized by low emissions, efficient use of water, good soil management, with small- and medium-scale production tuned to local and regional markets, recognition of and support for traditional and indigenous rights and with buffers against internal and external shocks in place. The LED-R model is proposed to serve as a bridge to this alternative system, in effect attenuating the forest transition curve (Figure 3). For those regions that have already cleared significant areas of their forest cover, the goal is to slow or halt deforestation, increase agricultural yields through intensification, and the recovery of native vegetation. For those regions that have not yet converted extensive areas of forest and other native vegetation to pasture- and croplands, the goal is similar, but the region's "bridge" would be higher.



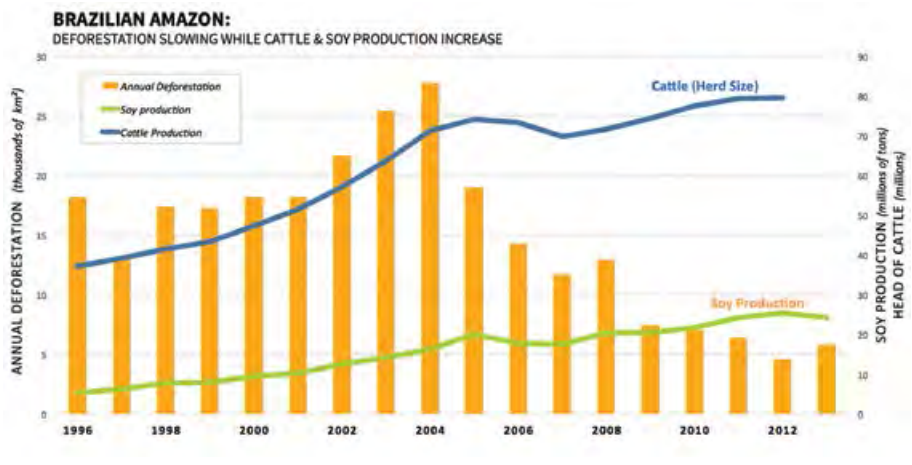
+ Figure 3

The Brazilian Amazon provides an example of the case where a region known for forest clearing in the pursuit of ever more crop- and pasturelands has changed course, reducing deforestation by 70% between 2005 and 2013, while simultaneously increasing the productivity of cattle and soy—mainstays of the Brazilian domestic and export economies (Figure 4). This is a rare example of a tropical region that still has 80% of its original forest cover and that is showing signs that it may be able to alter the typical forest transition path. The decline in deforestation in the region was the result of several mutually reinforcing factors, including regulations, fines and embargos for illegal activities, changing market conditions, voluntary agreements to eliminate deforestation from supply chains, among others that decreased the demand for new deforestation, and reduced the supply of undesignated or loosely claimed forestland that is the target of land speculators.[7] Whether this decline in deforestation is sustainable remains to be seen. The challenge is to build

5 Mather, A., 1992. The forest transition. Area 24, 367–379.; Thomas K. Rudel, 2005, Tropical Forests: Regional Paths of Destruction and Regeneration in the Late 20th Century. New York: Columbia University Press.

6 Mather 1992; Rudel 2005

7 Nepstad, D.C. et al. 2014. Slowing Amazon deforestation through public policy and interventions in beef and soy supply chains. *Science* 344(6188): 1118-1123.



+ Figure 4

upon this progress to construct a strategy for promoting a new model of rural development in which punitive measures are complemented by positive incentives and finance at scale for landholders, indigenous communities, counties, and states to make the transition to low deforestation, productive, sustainable rural development.

PROGRESS TOWARDS LED-R

FIVE PILLARS of Low-Emission Rural Development

Five principal pillars define progress toward LED-R: 1) sustainable economic development, 2) healthy ecosystems 3) manageable climate, 4) equitable social systems, and 5) improved human well-being (Figure 5).

SUSTAINABLE ECONOMIC DEVELOPMENT

- Prevailing agricultural production and infrastructure development models lead to resource depletion, declines in human well-being, and ultimately undermine continued economic growth.
- LED-R is predicated on resource efficiency, increased productivity, and greater accountability regarding social and environmental impacts.
- Includes a broad range of actors and ensures more equitable distribution of economic benefits to rural populations.
- LED-R economic model is built upon diverse funding mechanisms that provide positive incentives for sustainable resource use to neutralize negative incentives for land-use practices that are at odds with the LED-R agenda.

Healthy Ecosystems

- Integral to reducing emissions and to the well-being of millions dependent on ecosystem goods and services.
- Tropical forests are especially important due to high carbon stocks, species diversity, cultural diversity, and other co-benefits they confer.
- LED-R supports or maintains healthy, productive and diverse ecosystems.

ALTERNATIVE FINANCE FOR SMALLHOLDERS IN CHIAPAS, MEXICO

Financial barriers may limit the ability of resource managers to adopt alternative livelihood strategies that help reduce GHG emissions. In Chiapas, Mexico, access to formal finance is very limited for smallholders. To address this issue, Pronatura-Sur has developed a program (Econfía) to help smallholders implement sustainable resource management practices while they participate in a capacity building process that enables them to take advantage of formal finance systems. To date, the project has disbursed 25 loans affecting nearly 400 local producers (farmers, peasants, foresters), who have received MEX 2,513,605 (USD 192,248) in loans since 2011.

+ Figure 5

REFORESTATION

OF KENYA'S CRITICAL WATERSHEDS

Over 90% of Kenya's water supply originates in five forested mountains, also known as "Five Water Towers". Rivers flowing from these mountains generate over 50% of the country's electricity. Greenbelt Movement is targeting reforestation efforts in this critical region, with a focus on fostering a sense of shared responsibility and connectedness within the communities bounded by watersheds. Their shift to a watershed approach from a political jurisdiction-focused approach is exemplary of the kind of landscape level interventions needed to secure and monitor critical environmental services.

MANAGEABLE CLIMATE

- Tropical forests play a pivotal role in stabilizing global and regional climates; lowering emissions from land-use (especially deforestation) and maintaining tropical forest roles in rainfall regimes are central to managing climate.
- Resource degradation threatens climate stability and peoples' ability to mitigate and adapt to climate change.
- Through LED-R, climate change mitigation and adaptation strategies are harnessed to work in concert with development policies and alternative livelihood strategies.

EQUITABLE SOCIAL SYSTEMS

- Policies in tropical forest regions are often made by a minority of affected parties or may be imposed from the outside by national or even international actors ("top down").
- LED-R seeks to reconcile competing interests, resolve inconsistencies in disjointed policies, and improve enforcement and widespread non-compliance in the use of natural resources.
- Achieving LED-R requires genuine participation of diverse stakeholders, secure rights to resources and increasing governance capacity of local institutions.

HUMAN WELL-BEING

- The current economic growth model often marginalizes sectors of society that are most dependent on natural resources for their livelihoods.
- LED-R seeks to improve the well-being of those living in tropical forest regions by ensuring access to land, resources, and services to fulfill basic needs.
- Encompasses rights to self-determination for individuals and communities.
- Human well-being must be central to LED-R and should be part of a comprehensive policy approach.

IMPROVING BRAZILIAN AMAZON STATES' CAPACITY

TO MONITOR AND EVALUATE DEFORESTATION POLICIES

The states of Pará, Mato Grosso, Acre and Amazonas together are responsible for three-quarters of all deforestation in the Brazilian Amazon. To help support the states' environmental agencies in implementing policies to control deforestation, the Instituto de Pesquisa Ambiental da Amazônia (IPAM) has developed the INDICAR monitoring system. IPAM is working together with policy makers and civil society in each state to develop indicators to evaluate the impact of state-level policies related to forests and land-use. In addition to improving interactions between federal and state governments regarding deforestation policy, INDICAR has facilitated and stimulated exchanges and engagement among state-level institutions, including increasing the perceived importance of monitoring, transparency and social control of deforestation policies.

SHARING THE BENEFITS
OF CLIMATE FINANCE WITH TRADITIONAL STEWARDS OF TROPICAL FORESTS

Earth Innovation Institute (EII) is working with partners to convene indigenous organizations, sub-national governments and the private sector to develop agreements among commodity supply chain actors, governments and indigenous peoples to (1) achieve substantial reductions in GHG emissions from deforestation in the tropics, (2) increase the percent of internationally traded agricultural commodities that are guaranteed to be deforestation-free, and (3) develop innovative and equitable mechanisms to share the benefits from linked climate finance with the traditional stewards of tropical forests. Most recently, in the Rio Branco Declaration, the Governors' Climate and Forests Task Force (GCF) members pledged to reduce deforestation 80% by 2020, calling for stronger commitments from governments, companies and donors to slow deforestation to achieve this reduction. With EII's support, the governments included a commitment to channel a substantial share of benefits to indigenous, traditional and other forest-dependent communities living in tropical forest regions.

PRIORITIZING COMMUNITY NEEDS
THROUGH "GOOD LIFE PLANS" IN THE PERUVIAN AMAZON

The Instituto del Bien Común (IBC) has been working with the National Association of the Ashaninka of the Pichis Valley (ANAP) to develop a "Good Life Plan", a mechanism with a specific emphasis on the sustainable management of indigenous territories at local, municipal, and regional levels, that will help the communities prioritize their needs within a ten-year timeframe. ANAP recently voted unanimously to include IBC as a strategic ally in the management of community resources, an important step towards integrating LED-R objectives with initiatives on the ground and at the jurisdictional level in Peru.

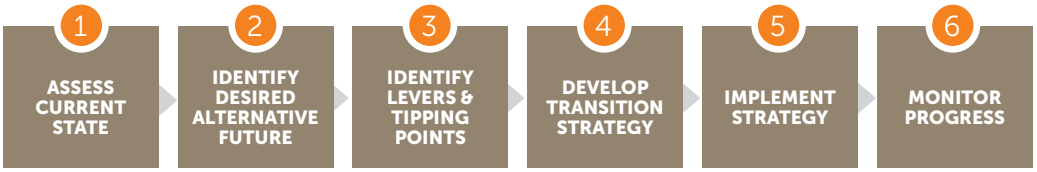
THE WAY TO LED-R

LED-R must be tailored to local contexts, acknowledging that current development paradigms are a product of specific histories, and interacting social and cultural, political, economic and biophysical processes. The approach should be evidence-based and participatory: each step should be carried out with multi-stakeholder input, as well as with rigorous research and analysis. The process for designing and implementing LED-R plans at the regional or jurisdictional scales involves six basic steps (Figure 6).

LED-R READINESS

We assessed focal regions' "LED-R readiness" by investigating the status of six key measures of progress:

1. **Policies:** the extent to which formal policies explicitly address climate change, i.e. national or jurisdictional climate action legislation, plans or targets for GHG emissions reductions and/or reducing deforestation rates. In addition, we examined institutional capacity for implementing climate change action plans, alignment of LED-R policies with other agricultural, forestry and economic development policies, and policy compliance.
2. **Innovative LED-R Initiatives:** the extent and range of innovative programs and initiatives that support the transition to LED-R among small-scale farmers, indigenous and traditional communities and commodity producers, such as REDD+ initiatives, sustainable agriculture programs, commodity roundtables and supply chain certification schemes.
3. **LED-R finance:** refers to the level and source of funding for LED-R types of programs and initiatives, including REDD+, Payments for Environmental Services and sustainable agriculture and cattle ranching credit lines.
4. **Monitoring:** the extent to which regions have established platforms for monitoring environmental and/or social indicators, along with baselines or "reference levels" that may serve as the basis for a jurisdictional system for monitoring progress towards LED-R.
5. **Indigenous and Community Territorial Security:** Indigenous peoples and traditional communities are recognized as important forest stewards. We assess the extent to which indigenous peoples and community land rights are recognized and secure.
6. **Stakeholders:** Our theory of change is rooted in the idea that multiple stakeholders must engage in



+ Figure 6

dialogue to develop a shared vision for LED-R. As a measure of LED-R readiness, we assess the extent to which multiple stakeholder processes exist in focal regions.

KEY FINDINGS ON LED-R READINESS

- **Many Jurisdictions Still Lack Performance Targets and Reference Levels:** National-level targets and reference levels related to climate change have been set for many of the regions studied; however, few exist at the subnational level, with the exception of Acre and Mato Grosso in Brazil and Chiapas in Mexico.
- **Lack of Policy Alignment:** Policy fragmentation, a lack of institutional capacity and low levels of compliance are significant roadblocks to achieving those targets and moving towards LED-R. Many of these deficits are systemic and will require significant effort and political will to overcome.
- **REDD Finance has Not Reached Most Jurisdictions:** With a focus on national finance mechanisms and slow processes, REDD finance has been slow to reach subnational jurisdictions, with the important exception of the Brazilian Amazon Fund, the German REDD Early Movers Program and the State of Acre.
- **Many LED-R Pieces are in Place, But Separated by Metrics:** Regions have several initiatives that could be harnessed and connected to achieve LED-R, including REDD+ initiatives, certification under commodity roundtables and other standards and sustainable agriculture and cattle ranching programs. Many deforestation initiatives have established different definitions and metrics of success, impeding alignment. Brazil's Territorial Performance System could serve as a model for achieving this alignment.
- **Forest Monitoring Weak Outside of Brazil:** Most nations have developed forest monitoring systems, but only Brazil makes available reliable, annual maps of deforestation. This official deforestation monitoring system has been instrumental to Brazil's decline in deforestation.
- **Land Rights Advanced in Latin America, with**

+ Table 1 Summary of LED-R readiness across regions.

	ACRE BRAZIL	**CENTRAL KALIMANTAN** INDONESIA	**CHIAPAS** MEXICO	**FIVE WATER TOWERS** KENYA	**LOWER AMAZON** BRAZIL	**MATO GROSSO** BRAZIL	**PACHITEA** PERU
Policies	●	◐	◐	○	◐	●	○
Innovative LED-R Initiatives	●	◐	◐	◐	●	●	◐
LED-R Finance	●	◐	◐	◐	◐	◐	◐
Monitoring	●	○	◐	○	◐	●	◐
Indigenous & Community Territorial Security	●	○	●	◐	◐	●	◐
Stakeholders	●	◐	◐	○	●	◐	◐
Overall LED-R Readiness	●	◐	◐	○	◐	●	◐

○ EARLY ◐ INTERMEDIATE ● ADVANCED

THE GOVERNORS' CLIMATE AND FORESTS TASK FORCE

The world's single most important partnership for strengthening LED-R programs in tropical states and provinces is the Governors' Climate and Forests Task Force (GCF). Its 26 member states and provinces include 1/4th of the world's tropical forests. The GCF was launched in the context of California's climate policy in 2008. With member states in Brazil, Peru, Indonesia, Mexico and Nigeria, the GCF has been a laboratory for innovative policies and approaches for lowering deforestation while increasing agricultural production. In 2013, the GCF Fund was established, channeling nearly $1 million in grants in support of GCF member governments in less than a year. Twenty-six of the GCF states and provinces announced the Rio Branco Declaration at the New York Climate Summit, September 23rd, 2014, pledging to reduce deforestation 80% by 2020 if adequate finance and company partnerships are in place. This commitment would result in nearly 4 billion tons of emissions reductions by 2020.

Progress in Indonesia: Legal protection of indigenous and community rights to land is more advanced in Latin America, while in Indonesia a recent Constitutional Court decision on customary land rights provides a foundation for progress. Despite the progress made in Latin America, legal protections are still fragile, and communities are on their own in fighting encroachment by land grabbers and loggers. Securing land rights for those on the frontlines of conservation will be critical to advancing the progress of LED-R.

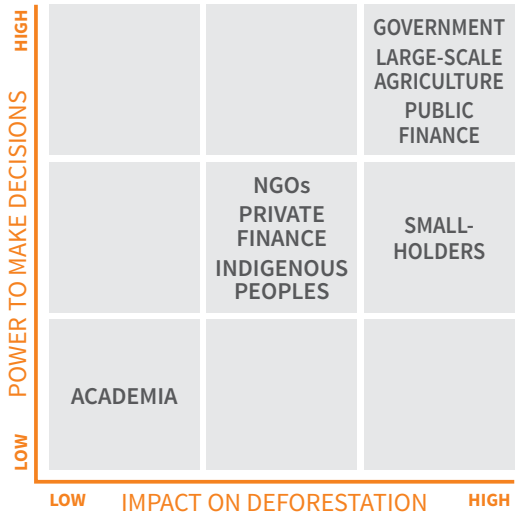
- **Multi-Stakeholder Dialogues Patchy:** Several regions have multi-stakeholder processes underway, while some are just beginning. Indigenous people and smallholders generally have less decision-making power than governments and private sector actors, such as large-scale farmers and financers (Figure 7). Multi-stakeholder processes must engage both those actors who are generally excluded from dialogue about climate change, as well as those powerful actors who chose not to come to the table.

WHO IS INVOLVED IN LED-R?

Explicit multi-stakeholder, participatory approaches that empower local actors, including marginalized actor groups, are critical to bringing about a transition to low-emission rural development. LED-R processes must engage a range of actors with diverse and sometimes opposing interests in decision-making processes related to agriculture, deforestation and land-use more generally.

Under the "business as usual" model of rural development, actors tend to have the following characteristics:

- **Governments** (national, state, local) make laws, policies and programs, enforce the law, and provide services to rural communities and other groups. Often, their effectiveness suffers from lack of alignment between levels of government and among agencies, weak and/or corrupt enforcement, and the prominence of political cycles. They are also frequently "captured" by elite minorities that accumulate wealth by grabbing natural resources.
- **Large-scale farming, forestry, extraction:** Large-scale producers, businesses and companies are often highly capitalized and politically powerful, and frequently opposed to the REDD+ or LED-R agenda.
- **Smallholders** are critical because they are often important producers of food for local consumption, but often also lack access to capital, technology and other support to make the necessary farm-level investments that would reduce their impact on forests and accompanying ecosystem services.
- **Indigenous peoples, traditional communities** and other traditional stewards of forests continue to be key



+ Figure 7

defenders of forests and healthy ecosystems because their livelihoods and cultures depend on them. They are frequently marginalized by centralized government planning and private interests and activities (e.g., farming, logging, infrastructure development), and may be subject to organized invasions of their territories.

- **Financial institutions and private investors'** programs and strategies influence the types of rural production and infrastructure activities that will be capitalized.
- **Civil society** (non-governmental organizations, universities and research institutions) provides long-term continuity (e.g., when government administrations change), pressures governments to carry out their responsibilities, influences public opinion through the media and grassroots mobilization, and provides education and training to develop critical human resources.

In a survey of eight regions, Government, Finance and representatives of Large-Scale Agriculture tended to have both the highest impact on deforestation and related land-cover change, as well as the highest degree of influence over decision-making (Figure 7).

Smallholder or family agriculture was generally rated as having the highest impact in terms of land-cover change (except in Mato Grosso). This group's level of decision-making power was highly variable across regions. They are rated as having minimal power in Mato Grosso and Colombia, but as having a high degree of influence in Central Kalimantan and Kenya.

Generally, Indigenous Peoples were rated as having minimal to moderate power to influence decisions although their impact on deforestation varied widely. In some regions (including Chiapas and the Pachitea Watershed), indigenous and traditional communities are often similar to small-scale or family farmers and thus were rated as having a high impact on deforestation. In others, their impact was relatively low (Mato Grosso, Acre, Colombia).

Civil society groups including non-governmental organizations and academia ranged widely in both their impact on deforestation and their power to influence decision-making.

We identified the needed changes in behavior or role of each actor group in order to support the transformation of the current model of rural development (Figure 8):

- **Governments:** To facilitate the transition to LED-R, governments and political actors must realize the benefits of LED-R and provide leadership to broaden the base of political support and overcome inter-agency barriers to achieving integration and alignment across relevant ministries and sectors (agriculture, forestry, environment, climate, agrarian reform, transportation, energy, finance).

+ Table 2

STAKEHOLDERS' POTENTIAL ROLES IN THE TRANSITION TO LED-R

Dark circles signify stakeholders' potential roles identified in all eight regions. Lighter circles signify those identified by four or more regions.

	GOVERNMENT	PUBLIC FINANCE	LARGE-SCALE AGRICULTURE	SMALLHOLDERS	PRIVATE FINANCE	NGOS	INDIGENOUS PEOPLES	ACADEMIA
Facilitate	●					●		○
Provide Information	○		○	○	○	●	○	○
Monitor	●		○			●	○	○
Change Land Use Behavior	○		●	●	○		○	
Maintain Land Use Behavior	○			○			○	
Create Incentives	●	○			○			

- **Large-scale farming, forestry, extraction:** Large-scale individual producers, businesses and companies can rapidly innovate and mobilize finance when they identify a profitable or lucrative opportunity in rural production systems. A growing number of these businesses are striving to expand their production in a way that is consistent with LED-R. This front-runner leadership is an important building block for changing the production and/or extraction systems of entire sectors, making the commitment to forego deforestation and reduce forest degradation as they make the necessary investments and technological innovations to achieve greater production while maintaining and restoring native ecosystems, soils, and streams.
- **Smallholders:** They need technical support and finance to make the transition to low emission, high yield production systems as they adopt new technologies and practice improved land stewardship.
- **Indigenous peoples and traditional communities** must be empowered to participate in discussions and planning processes that lead to improvements in their livelihoods; their legitimate claims to territories and natural resources must be recognized and protected
- **Financial institutions and investors** can eliminate policies that promote unsustainable land use and extraction, identify clear entry points for farmers and others to access capital for sustainable production, and develop innovative financial instruments for providing capital for the shifts in production and extraction systems that are at the core of LED-R.
- **Civil society** actors generally must become more pragmatic and evidence-based in their strategic interventions in support of LED-R as they improve their ability to facilitate the transition, convene multiple actors, interact with corporate sectors, and support political processes.

BARRIERS TO & OPPORTUNITIES FOR LED-R

BARRIERS

1. **Rural development programs are shortsighted.** Prevailing visions for rural development in tropical forest nations have focused on natural resource extraction, agrarian reform and economic integration. National-level climate change and environmental policies can come into conflict with policies driving economic development. LED-R model seeks to integrate policies with a longer-term vision for regional development.
2. **Drivers of deforestation are not being adequately addressed by climate change programs and development programs are not adequately addressing climate change.** Top-down strategies are failing to slow the most critical drivers of deforestation in tropical forest regions, which are usually regional and national markets and policies. Solutions to deforestation and increasing GHG emissions must be anchored in local cultures, economies, policies and business models. This means paying attention to how forest resources support diverse actors' well-being and providing appropriate incentives for forest conservation.
3. **Small-scale farmers have been left out of LED-R dialogue.** Small-scale farmers represent critical actors in land use change in many tropical forest regions as they convert forests to agricultural and pasture lands and harvest fuel and construction wood to achieve food security and ensure their well-being.
4. **Moving beyond projects to a jurisdictional mindset.** LED-R cannot be achieved with a project mindset, in which the level of involvement of governments is minimized. LED-R vision must unite initiatives across entire regions behind common metrics of success with progress towards these milestones supported by positive incentives (market access, credit, regulatory incentives).
5. **Legal protections for indigenous and community lands are fragile.** Indigenous peoples and traditional communities are recognized as key defenders of forests in most regions, and much progress has been made in recognizing rights. However this progress is fragile and still limited in its scope.

OPPORTUNITIES

1. **Strong potential for increasing agricultural productivity, improving livelihoods while restoring landscapes across the tropics.** Brazil, with its recent decline in deforestation while increasing agricultural output, has demonstrated the enormous potential for

success. Virtually all of the jurisdictions covered in this report could increase agricultural production on cleared lands for decades while rapidly slowing agricultural expansion into forestlands.

2. **National and regional climate change targets have the potential to strengthen political will.** Political will and momentum generated by recent national and regional climate change targets in tropical forest nations must be strengthened through linkages to greater investments, job creation, and reputational benefits for the target jurisdiction. Targets should be leveraged to create action plans, attract investors, and foster dialogue among diverse groups regarding how to achieve those goals.
3. **Opportunities for consensus around new vision of development.** Political changes, such as Kenya's new constitution and regime changes at the jurisdictional level in Brazil, present opportunities to develop LED-R as a political platform that merges economic growth, climate change mitigation and social inclusion.
4. **The race to the top for zero deforestation commodity supply chains.** There is growing momentum in the private sector by commodity producers who want to eliminate deforestation from their supply chains, and a growing recognition that these supply chain targets will only be achieved through collaboration with regional governments. Sustainable supply chain initiatives have been effective in places like Brazil, and are poised to have an impact in Central Kalimantan. However, they also run the risk of scaring away investments and excluding smallholders who depend upon slash-and-burn agriculture.
5. **Multi-stakeholder processes are under development.** Led by state and civil society actors, these processes present tremendous opportunities to engage actors in designing regionally-relevant LED-R models. As our stakeholder analysis demonstrates, actor groups have varying levels of decision-making power and impact on deforestation in the region, and therefore a range of actors must be considered in multi-stakeholder processes.
6. **Jurisdictional monitoring systems underway.** These are critical first steps to fostering dialogue among diverse stakeholders, establishing shared reference levels and definitions of success with regards to emissions reductions, and developing performance-based incentives at regional, rather than national, scales. They are particularly powerful when they link corporate risk assessment, financial institution risk assessment and governmental programs.

LED-R AND INTERNATIONAL CLIMATE CHANGE NEGOTIATIONS

LED-R offers a framework for holistic implementation of the UNFCCC on the ground, one that is responsive to rural needs and realities. By aligning with and advancing the UNFCCC, LED-R can help overcome challenges to implementation, both in relation to scaling up REDD+ and sustainable agriculture. Nationally Appropriate Mitigation Actions (NAMAs) have potential to be particularly important tools for implementing LED-R. For example agricultural NAMAs can complement REDD+ policies and help support an integrated, holistic national or jurisdictional level LED-R approach. The 2015 climate agreement, to be concluded in Paris next year, could facilitate and encourage LED-R. In the meantime, NAMAS can become relevant within domestic processes as a strategic tool for supporting transitions to LED-R.

TOWARDS A GLOBAL MODEL OF LED-R

Dominant rural development paradigms in the tropics could shift towards a more holistic, long-term vision for

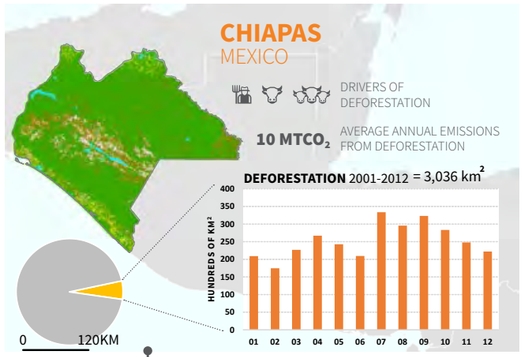
development in order to manage climate change and sustain rural populations. Low-Emission Rural Development is a model-in-progress for realizing these goals, addressing global challenges of climate change and food supply through regionally-tailored strategies that are focused on the key needs and concerns of regional society. The way forward for LED-R presents many challenges, but could be accelerated through a more broadly-shared set of performance milestones—including regional reference levels—that are reinforced by incentive systems.

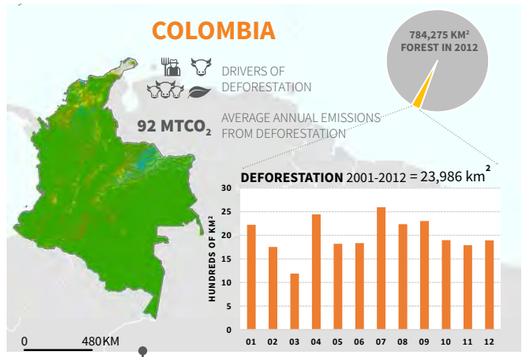
KEY MESSAGES

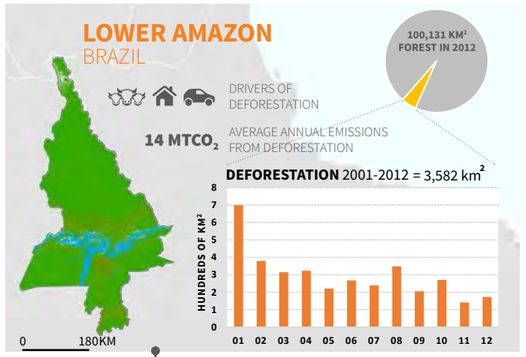
- **Importance of Sub-National Government:** Sub-national governments are closer to the farmers and communities who manage the land, and often have substantial powers to shape land-user behavior—especially in large nations such as Brazil, Indonesia and Mexico.
- **No silver bullets:** LED-R will succeed when multiple initiatives converge around broadly shared milestones of success. Company commitments to reduce deforestation in their commodity supply chains, national commitments to lower emissions, financial incentive systems and domestic policies are insufficient to drive the transition to LED-R unless they are inter-connected.
- **The real work is about to begin:** Rural development pathways are messy struggles that often involve powerful elites and low governance capacity. However, important progress is being made to change this scenario in several jurisdictions.
- **Prevalence of national and regional drivers of deforestation:** In most jurisdictions, the global market and related global factors are not the dominant causes of forest clearing and degradation.
- **Abandoned smallholders:** Most jurisdictions are still not effectively pulling smallholders into LED-R.
- **Missing Reference Levels:** There is tremendous potential to unify disparate deforestation and LED-R initiatives around jurisdictional reference levels, with progress monitored and reported annually.
- **REDD still limited in its effect:** In most jurisdictions, REDD+ has had little influence on the main drivers of deforestation; REDD+ finance has not yet reached many jurisdictions.
- **Key role of performance-based incentives:** A critical contribution of REDD+ to LED-R is performance-based incentives that operate across entire jurisdictions.
- **LED-R is technically feasible:** In every region, there is tremendous scope for increasing agricultural production and livelihoods while restoring the landscape.

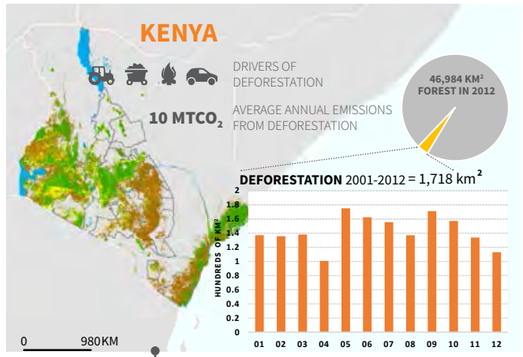
THE STUDY REGIONS AND THEIR LED-R READINESS

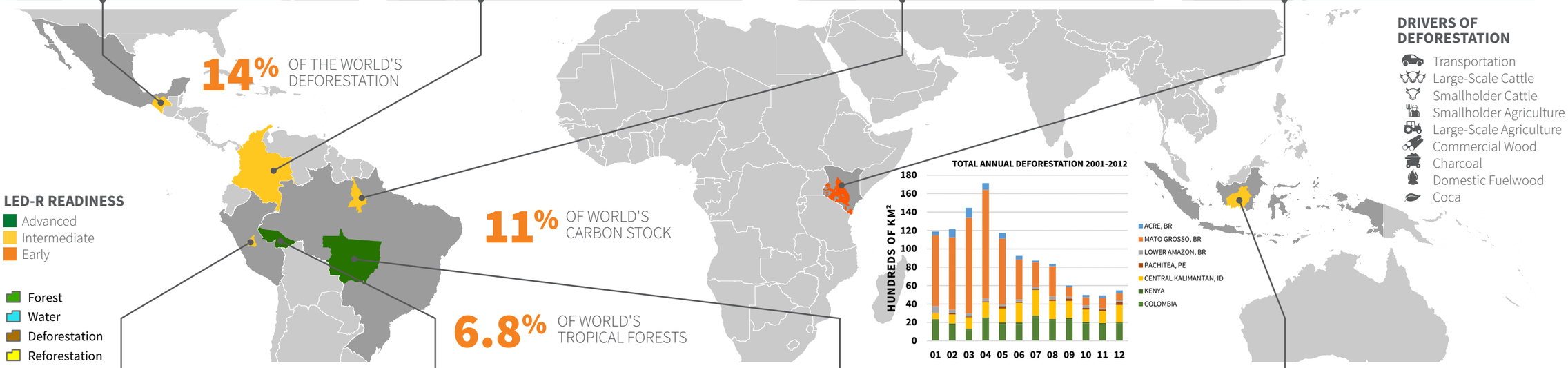
All deforestation and forest cover data is from Hansen et al.[1], except for Brazilian regions which are from PRODES[2]. Emissions and carbon stocks data in the report are calculated by using an average forest carbon content for the forested portion of the region calculated from Baccini et al[3].

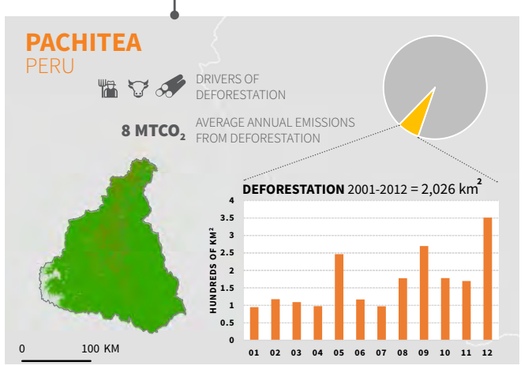


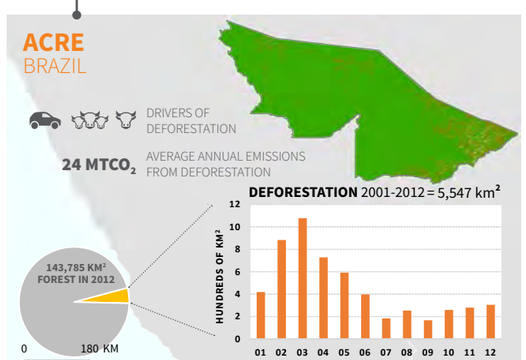


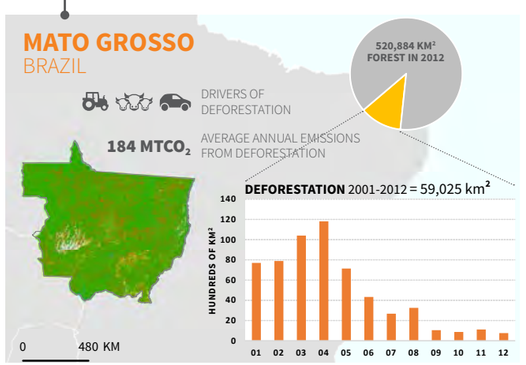


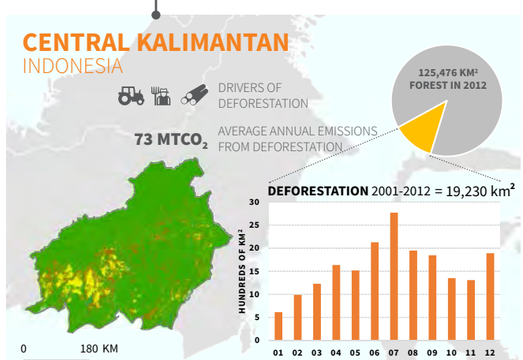












1 M. C. Hansen *et al*., High-Resolution Global Maps of 21st-Century Forest Cover Change. Science 342, 850 (2013).
2 INPE. (INPE, http://www.obt.inpe.br/prodes/ 2013) 2013.
3 A. Baccini et al., Estimated carbon dioxide emissions from tropical deforestation improved by carbon-density maps. Nature Climate Change, 2(3), 182–185 (2012), doi:10.1038/nclimate1354.

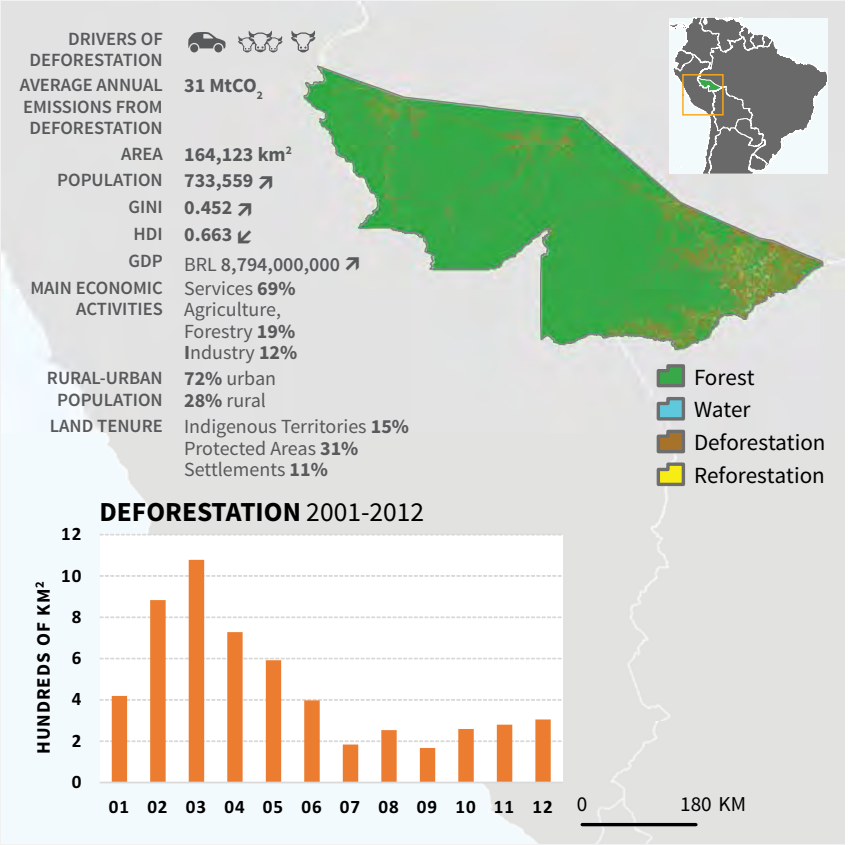
spotlight on acre

PHOTO MARTIN VALIGURSKY / SHUTTERSTOCK

LED-R AT A GLANCE

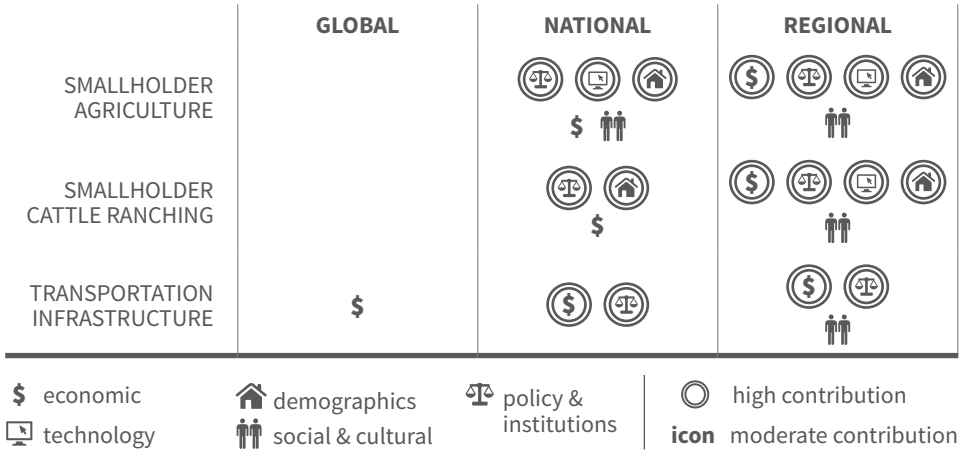
One of world's most advanced state-wide programs for supporting the transition to LED-R

- Legal framework for incentives for ecosystem services (SISA)
- Public-private "Company for Ecosystem Service Development" brokering deals
- Forest management for timber largely FSC certified
- Funds flowing to indigenous peoples
- Strong grass-roots movements
- Nearing validation under the VCS Jurisdictional Nested REDD standard
- REDD Social and Environmental Safeguards implemented
- Little progress with smallholders



DRIVERS OF DEFORESTATION

- With decline in forest clearing by large-scale cattle operations, smallholders have become the main proximate drivers of deforestation
- Smallholders are concentrated in agrarian reform settlements *(assentamentos)*
- Acre has paved the BR-364 highway, opening up new forest landscapes to colonization
- Acre is vulnerable to severe drought episodes and forest fire



Each icon represents an array of underlying factors behind the main drivers of deforestation listed on the left (See Figure 1 for detailed description of underlying factors). Underlying factors that made a high contribution to the main drivers are noted by a circle around the icon. Those factors that made moderate, but still important, contributions to the proximate driver are represented by just the icon.

PROGRESS TO LED-R

POLICIES	●	• *Advanced state legislation to provide incentives for protection of environmental services (SISA)* • *High levels of enforcement and compliance* • *State-wide ecological/economic land-use zoning plan approved*
INNOVATIVE LED-R INITIATIVES	●	• *Forest-friendly enterprises* • *Awarded German REDD Early Mover grant, committing to allocate 70% of revenues to communities* • *VCS JNR validation; REDD+ SES criteria established*
LED-R FINANCE	●	• *Progressive allocation of tax revenues ("ICMS Verde") to reward counties with high levels of protected areas*
MONITORING SYSTEMS	●	• *National-level forest monitoring system for deforestation (PRODES)* • *State-level monitoring system for deforestation (UCGeo)* • *State-level institutions regulate and monitor SISA*
LAND TENURE SECURITY	●	• *Indigenous rights and community rights to forests secured by the Brazilian Constitution* • *Over 50% of the state is designated as protected areas, indigenous reserves or agrarian settlements*
STAKEHOLDERS	●	• *High level of dialogue between civil society and state government via jurisdictional REDD planning processes* • *Private sector engagement is still limited*

○ EARLY ◐ INTERMEDIATE ● ADVANCED

BARRIERS & RISKS

- Highway paving including link to Pacific coast could create new deforestation pressure
- Engagement of large-scale cattle producers and agrarian reform settlements in LED-R still weak

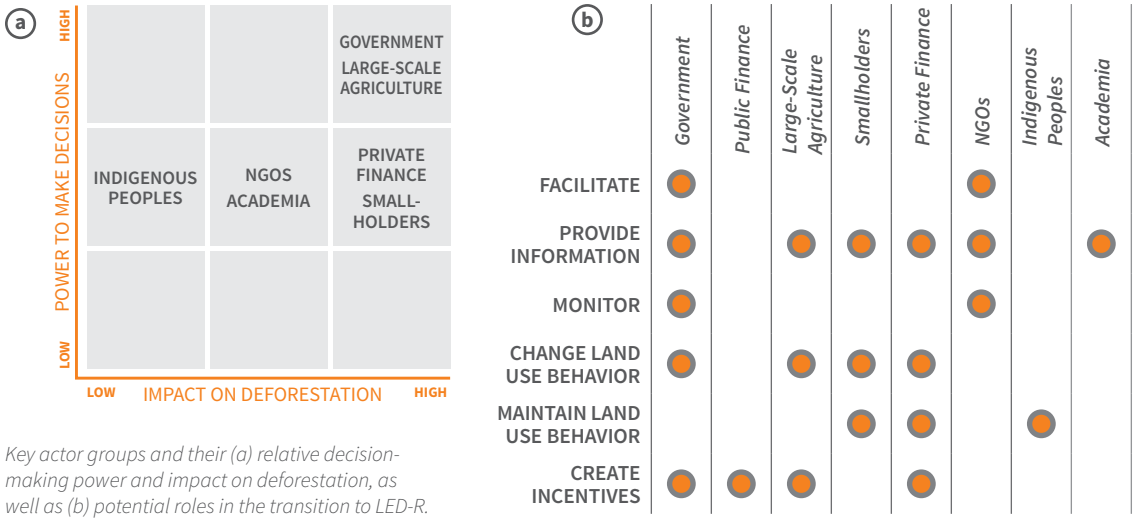
OPPORTUNITIES

- Acre likely to be first to attract investments through California's REDD provision, if implemented
- Cattle industry could continue to expand beef production on existing pasture through intensification

MULTI-STAKEHOLDER PROCESSES

The Acre Government led an extensive multi-stakeholder process on its state-wide LED-R agenda through the development of its SISA legislation and the REDD+ Social and Environmental Safeguards process.

The SISA law institutionalizes consultation on its LED-R program through a permanent government/civil society body, the "Comission for Monitoring and Validation" that is already functioning

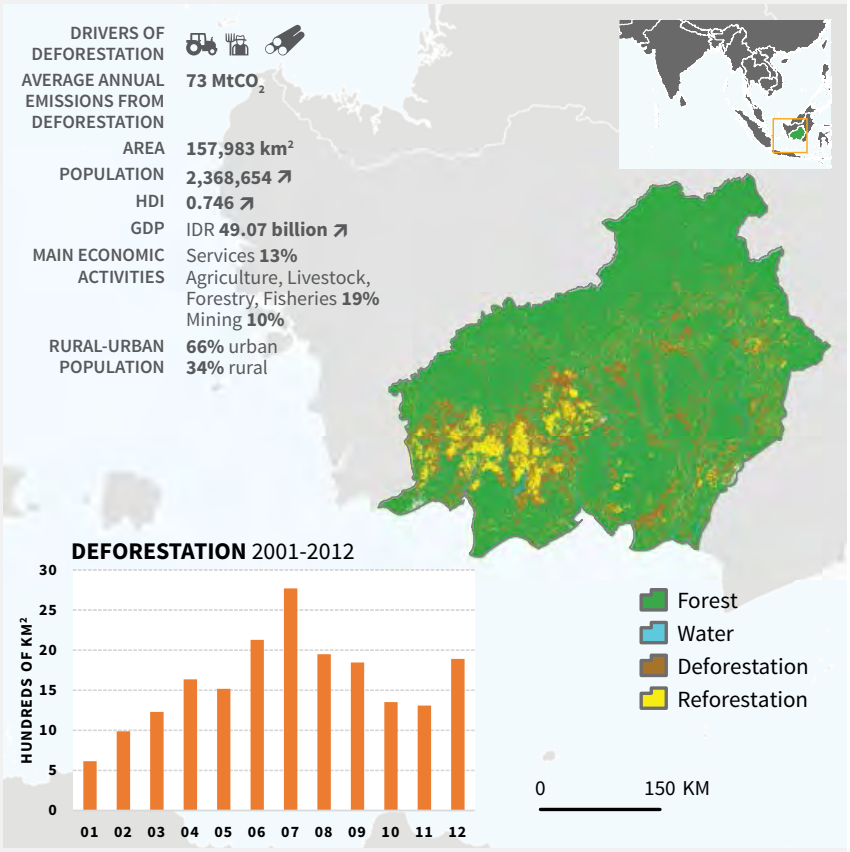


Key actor groups and their (a) relative decision-making power and impact on deforestation, as well as (b) potential roles in the transition to LED-R.

spotlight on central kalimantan

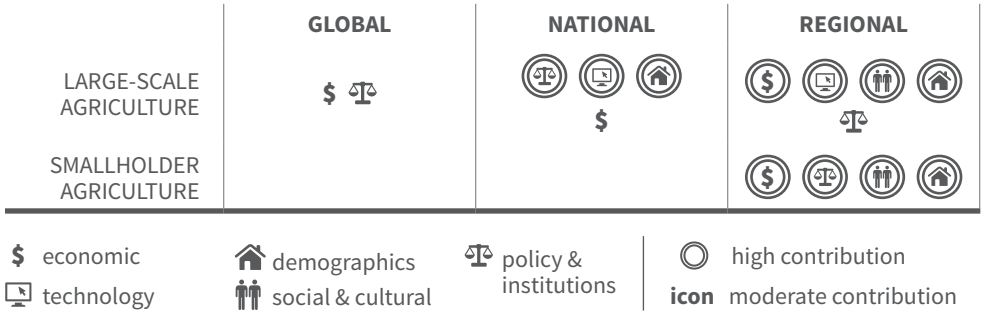
LED-R AT A GLANCE

- Third largest producer of palm oil in Indonesia.
- Deforestation declined in 2012
- Pilot province for REDD+ under the $1 billion Norway pledge
- Smallholders still largely untouched by deforestation agenda
- Member of Governors' Climate and Forests task force (GCF)
- Key Innovative Initiatives:
  - *Sustainable plantation regulation: Provincial Decree 5/2011*
  - *Governor's Roadmap for Low-Deforestation, Productive Development establishes target for reducing deforestation 80% by 2020 while increasing participation of smallholders from 11 to 20% of total production*



DRIVERS OF DEFORESTATION

- Most of Central Kalimantan's deforestation is linked to global markets for timber, pulp and palm oil
- Semi-subsistence crop production also drives deforestation



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PROGRESS TO LED-R

POLICIES	◐	• *Ambitious national targets to reduce emissions 26% alone and 41% with international assistance* • *Lack of integration between climate change goals and economic development policies driving oil palm expansion* • *Provincial legislation (Perda 5) provides legal framework for sustainable palm oil industry*
MECHANISMS FOR LED-R	◐	• *2011 National Forest Moratorium* • *Pilot region for UN-REDD and Norway commitment* • *Sustainable Supply Chain initiatives, such as RSPO, have engaged many palm oil companies*
LED-R FINANCE	◐	• *Funds for REDD have not yet reached the ground*
MONITORING SYSTEMS	○	• *Ministry of Forestry deforestation monitoring system incomplete, but could easily be improved* • *Plantation monitoring system launched for Kotawaringin Barat District.*
LAND TENURE SECURITY	○	• *Recent legislation provides opportunities for securing community land rights* • *Land conflict common when plantation or logging concessions are granted on community lands*
MULTI-STAKEHOLDER PROCESSES	◐	• *The Central Kalimantan Roadmap to Low-Deforestation Rural Development provides basis for an incipient multi-stakeholder process.*

○ EARLY ◐ INTERMEDIATE ● ADVANCED

BARRIERS & RISKS

- **Opportunity Costs:** Approximately 2.4 million ha of forests could be legally cleared and converted to oil palm
- **Certification:** Inconsistent land-use zoning complicates companies' plans to set aside forest reserves
- **Incentives:** Absence of positive incentives for farmers and local governments striving for sustainability
- **Smallholders Excluded:** Insufficient technical assistance for Dayak communities and other smallholders to participate in lucrative palm oil industry

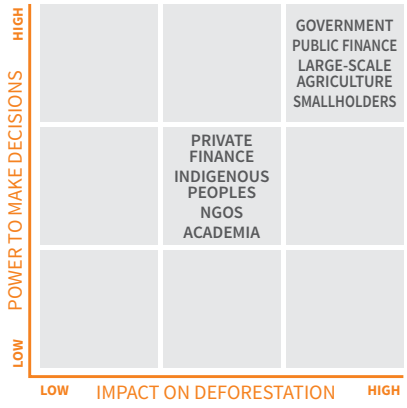
OPPORTUNITIES

- **Community land rights:** The new ruling of the Constitutional Court orders all customary lands to be excluded from state-controlled forests. This ruling creates opportunity for titling of customary lands and empowerment of communities
- **On-line Plantation Monitoring System** launched, facilitating deforestation and fire monitoring, and enabling the Government to assess companies on deforestation commitment and performance.
- **Commitments** of major multinational companies towards zero deforestation products.

MULTI-STAKEHOLDER PROCESSES

- Provincial REDD dialogue has had difficulties engaging palm oil companies
- Global dialogues on sustainability, such as the Roundtable for Sustainable Palm Oil, have no government involvement
- There is a need and opportunity for a Province-wide multi-stakeholder process that links the logic of sustainable supply chains with domestic policy

(a)



(b)

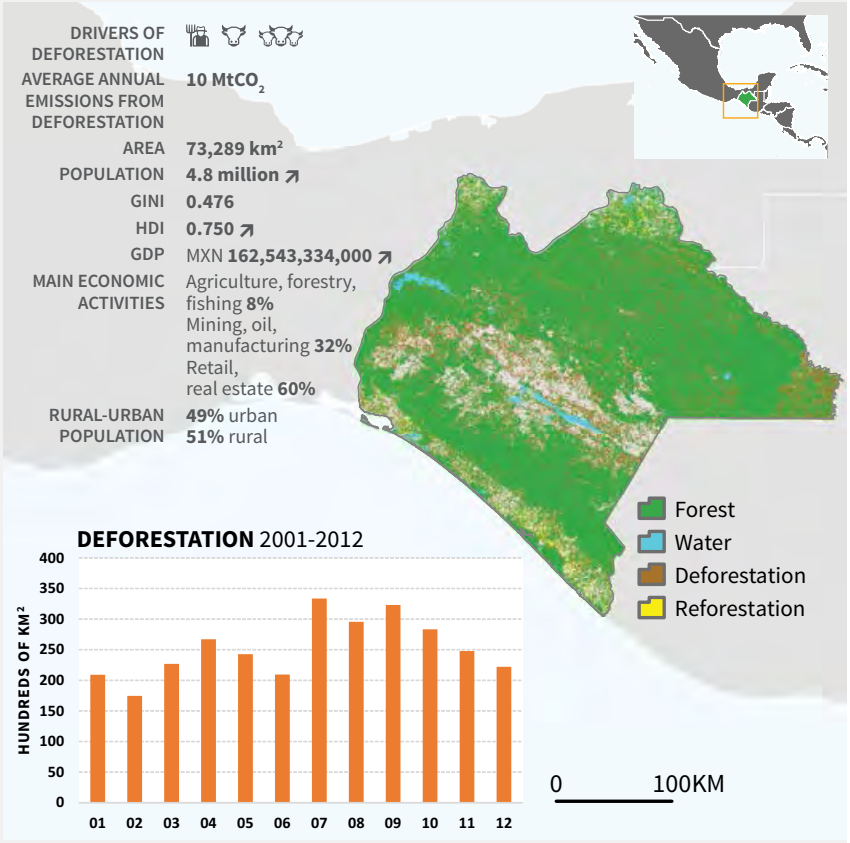
	Government	*Public Finance*	*Large-Scale Agriculture*	*Smallholders*	*Private Finance*	*NGOs*	*Indigenous Peoples*	*Academia*
FACILITATE	●					●		●
PROVIDE INFORMATION	●					●		●
MONITOR	●					●		●
CHANGE LAND USE BEHAVIOR	●		●	●	●		●	
MAINTAIN LAND USE BEHAVIOR	●				●			
CREATE INCENTIVES	●	●						

Key actor groups and their (a) relative decision-making power and impact on deforestation, as well as (b) potential roles in the transition to LED-R.

spotlight on chiapas

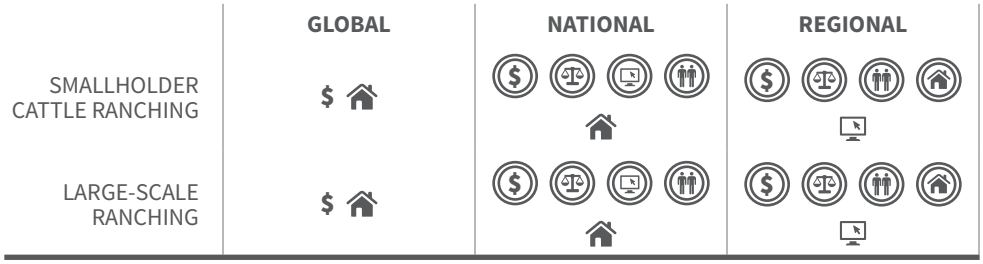
LED-R AT A GLANCE

- Ecologically and culturally diverse jurisdiction, with over a quarter indigenous population
- Majority of people live in rural areas, with the expansion of agriculture and cattle ranching driving forest conversion
- Deforestation and degradation account for 57% of state's GHG emissions
- One of Mexico's most advanced states in terms of LED-R readiness, with state emissions targets, climate change action plans and cross-sector coordination
- In 2010, Chiapas signed a Memorandum of Understanding with the state of California to link jurisdictional REDD programs with California's cap-and-trade program



DRIVERS OF DEFORESTATION

- Main drivers are conversion of forests to pasture and agriculture, accounting for bulk of state GHG emissions
- State subsidies and policies promote clearing land for agriculture and extensive cattle ranching expansion
- Oil palm cultivation has expanded from 13,861 ha in 2000 to 48,685 in 2013[1], representing a new threat to forests



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1 Servicio de Información Agroalimentaria y Pesquera, Mexico

PROGRESS TO LED-R

POLICIES	◑	• *State-level Climate Change Adaptation and Mitigation Law provides framework for cross-sector coordination* • *Competing policies and incentives for activities driving deforestation (e.g. cattle ranching)* • *Lack of capacity for monitoring and enforcement*
INNOVATIVE LED-R INITIATIVES	◑	• *Diverse experiments with voluntary carbon forestry, REDD+, and PES initiatives, some long standing* • *Currently, REDD + actions are taking place in only one of the regions of Chiapas.*
LED-R FINANCE	◑	• *Innovative state investments in lowering emissions (e.g. state vehicle tax to fund REDD+) have been dismantled* • *No specific budget has been allocated for LED-R policies or monitoring systems*
MONITORING SYSTEMS	◑	• *National-level monitoring of forest cover change* • *State-level monitoring methodology aligned with the national monitoring system is under development, but lacks funding* • *National monitoring system of environmental safeguards for REDD under development*
INDIGENOUS AND COMMUNITY TERRITORIAL SECURITY	●	• *Communal land rights recognized by Mexico's constitution* • *Communal land rights provide institutional structure for local environmental governance* • *Strong social mobilization of indigenous communities*
STAKEHOLDERS	◑	• *Little coordination among diverse sectors* • *State and municipal governments expend energy negotiating with individual sectors* • *Lack a platform for building consensus among groups*

○ EARLY ◑ INTERMEDIATE ● ADVANCED

BARRIERS & RISKS

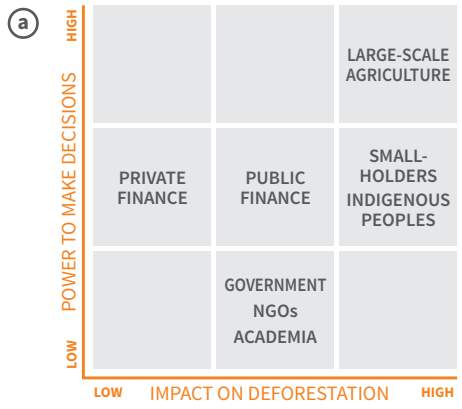
- Small-scale farming sector lacks livelihood alternatives and technical assistance, and many are dependent on state-led programs and incentives promoting forest conversion
- Oil palm rapidly expanding, presenting direct and indirect threats to forests. At the same time, potential opportunities to engage producers in sustainable supply chains
- Slow progress in developing a cohesive jurisdictional REDD or LED-R plan that could link to California's voluntary carbon market

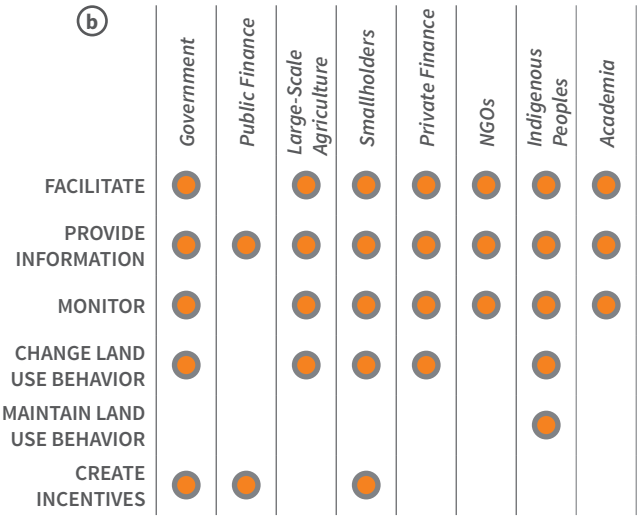
OPPORTUNITIES

- Much of the state is still forested- now is the time to get the incentives right, especially for the small-scale farming sector
- Communal land grants system provides robust institutional structure for including smallholders and indigenous communities in a LED-R jurisdictional model
- MOU between Chiapas and California is a tremendous opportunity to stimulate a voluntary carbon market, yet dependent on political will

MULTI-STAKEHOLDER PROCESSES

- Diverse sectors with little to no history of collaboration
- Sub-regional governments expend energy and resources negotiating with different sectors, undermining their ability to align interests and agendas
- Existing processes are led by civil society actors, with limited engagement from private sector who lack incentives to incorporate low-emissions practices into their production schemes





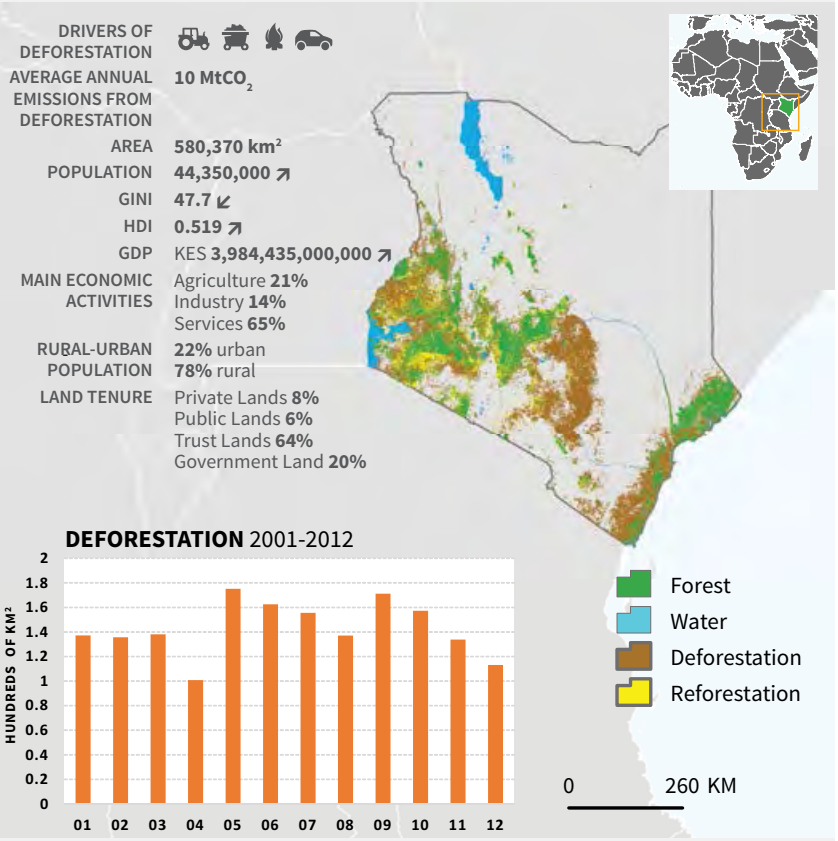
Key actor groups and their (a) relative decision-making power and impact on deforestation, as well as (b) potential roles in the transition to LED-R.

spotlight on kenya

LED-R AT A GLANCE

- The 2010 Constitution established a goal of increasing tree cover to 10%
- Kenya's economic blueprint, Vision 2030, aims to protect the five major water catchment areas (Mt. Kenya, Aberdares, Mau, Cherangani and Mt. Elgon) through support to other primary sectors of the economy
- Several legislative instruments and policies (Land Policy, Draft Environment Policy, National Climate Change Response Strategy & Action Plans, Forests Act, and Environmental Management & Coordination Act) interact to inform the country's legal approach to natural resource management

DRIVERS OF DEFORESTATION	
AVERAGE ANNUAL EMISSIONS FROM DEFORESTATION	10 $MtCO_2$
AREA	580,370 km^2
POPULATION	44,350,000 ↗
GINI	47.7 ↙
HDI	0.519 ↗
GDP	KES 3,984,435,000,000 ↗
MAIN ECONOMIC ACTIVITIES	Agriculture 21% Industry 14% Services 65%
RURAL-URBAN POPULATION	22% urban 78% rural
LAND TENURE	Private Lands 8% Public Lands 6% Trust Lands 64% Government Land 20%



DRIVERS OF DEFORESTATION

- Lack of fuel wood alternatives along with urban and rural population growth drive household wood and charcoal consumption
- Population growth inflates demand for staple foods grown by smallholders, while migration expands forest clearing
- Government policies accelerate expansion of large-scale agriculture (including tea, wheat, and corn), abetted by de facto degazetting of protected forest lands (including the Mau Forest Area)

	GLOBAL	NATIONAL	REGIONAL
LARGE-SCALE AGRICULTURE		$	$
SMALLHOLDER AGRICULTURE		$	$
SMALLHOLDER CATTLE RANCHING		$	$
TRANSPORTATION INFRASTRUCTURE	$	$	$

$ economic
technology
demographics
social & cultural
policy & institutions
high contribution
icon moderate contribution

Each icon represents an array of underlying factors behind the main drivers of deforestation listed on the left (See Figure 1 for detailed description of underlying factors). Underlying factors that made a high contribution to the main drivers are noted by a circle around the icon. Those factors that made moderate, but still important, contributions to the proximate driver are represented by just the icon.

PROGRESS TO LED-R

POLICIES	◐	• *2010 Constitution established goal of increasing tree cover to 10%* • *Current vision for development (Kenya Vision 2030) is anchored in a shift from subsistence agriculture to agribusiness that may run counter to a LED-R model* • *Recent reorganization of government institutions may help align policies and sectors*
MECHANISMS FOR LED-R	◐	• *Many REDD initiatives: voluntary carbon projects, CDM projects* • *Private sector engagement with commodity certification (tea) limited* • *Lack of coordination among projects*
LED-R FINANCE	◐	• *Diverse sources of international, bilateral and multilateral funding, most tied to REDD+*
MONITORING SYSTEMS	○	• *National carbon accounting system and forest cover change database under development*
INDIGENOUS AND COMMUNITY TERRITORIAL SECURITY	○	• *While land tenure for gazetted government forests is clear, community trust lands are still vulnerable* • *The newly created National Land commission seeks to clarify and strengthen community rights to land*
MULTI-STAKEHOLDER PROCESSES	◐	• *Few processes underway revolving around climate and forests (the Kenya Climate Working Group, the Mau stakeholders forum, and the Kenya Forest working group)* • *Led by civil society, with little, if any, private sector representation*

○ EARLY ◐ INTERMEDIATE ● ADVANCED

BARRIERS & RISKS

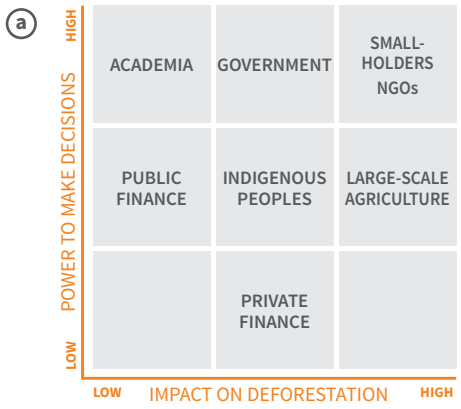
- **Decentralization** of forest governance to communities is still in early stages and few management plans have been approved, limiting communities' management options
- **Limited Technical Capacity** to develop and carry out monitoring hinders effective implementation of REDD+ and LED-R strategies
- **Private Sector Engagement** in multi-stakeholder processes related to REDD+ and LED-R is still limited

OPPORTUNITIES

- **Forests Act:** the new national forest policy provides new incentives for forest governance and improves enforcement
- **Hydropower Potential:** Kenya's populous coastal region depends on water generated in the Five Towers region, making it a focal point for innovative development initiatives and policies
- **National Reference Level:** A roadmap to develop a national reference level and forest monitoring system is underway

MULTI-STAKEHOLDER PROCESSES

Three stakeholder processes are addressing issues related to LED-R in the Five Towers region, which is an important focal point of national policy. These include the Kenya Climate Change Working Group, the Mau Stakeholders Forum, and the Kenya Forests Working Group. All of the processes involve Government, local communities, and civil society representatives, but do not yet engage the private sector.



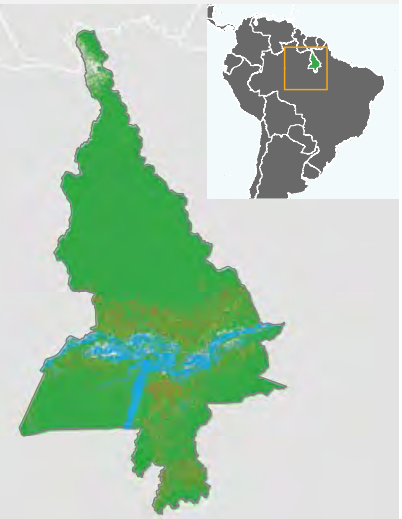
Key actor groups and their (a) relative decision-making power and impact on deforestation, as well as (b) potential roles in the transition to LED-R.

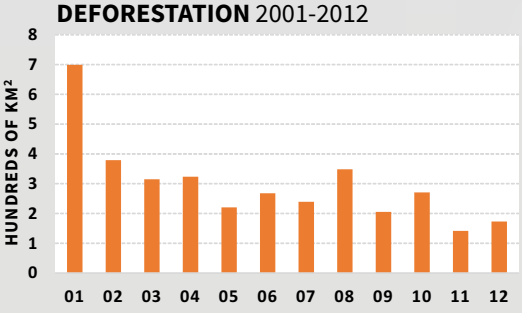
spotlight on the lower amazon

LED-R AT A GLANCE

- Pará committed to an 80% reduction in deforestation by 2020
- Deforestation declined 68% while the cattle herd increased
- Over 70,000 properties are now in the CAR (Rural Environmental Registry), the largest number of registrations in Brazil
- Innovative Initiatives
  - *Pará's Green Municipalities Program (GMP) provides financial incentives to landowners for lowering deforestation rates and registering in the CAR. 90% of Lower Amazon municipalities participate*
  - *Pará's Forum on Climate Change aims to define a legal framework for REDD+*
- Ecological, Economic Land-use zoning system approved

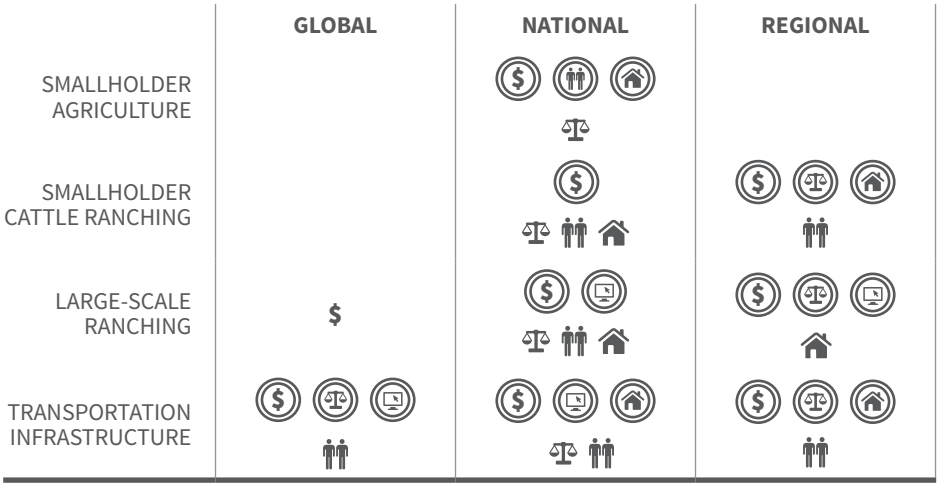
DRIVERS OF DEFORESTATION	
AVERAGE ANNUAL EMISSIONS FROM DEFORESTATION	**14 $MtCO_2$**
AREA	**133,989 km²**
POPULATION	**606,745** ↗
GINI	**0.6048** ↗
HDI	**0.586** ↗
GDP	BRL **3,841,041,000** ↗
RURAL-URBAN POPULATION	**58%** urban **42%** rural
LAND TENURE	Private Lands **44%** Public Lands **45%** Permanent Preservation Areas **7%**





DRIVERS OF DEFORESTATION

- Smallholder land use, ranching, and global demand for soy and grains drive deforestation
- Transportation infrastructure projects increase migration to frontier areas
- Southern farmers migrating north bring their large-scale grain production systems with them
- Low uptake of new technologies contributes to low yields and further agricultural expansion



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PROGRESS TO LED-R

POLICIES	◐	• *A state-level climate change law is stalled* • *Sector-specific policy goals often run counter to those of the national climate change policy*
INNOVATIVE LED-R INITIATIVES	●	• *Green Municipalities program, low carbon agriculture (ABC) & sustainable forestry initiatives with varying levels of adoption* • *Limited state support for enforcing agreements such as Green Municipalities*
LED-R FINANCE	◐	• *Smallholder adoption of credit lines for low carbon agriculture limited due to high interest rates* • *Public climate and PES funds to be part of state-climate law, if passed*
MONITORING SYSTEMS	◐	• *Deforestation monitoring available for Amazon basin* • *No state-level monitoring system*
INDIGENOUS & COMMUNITY TERRITORIAL SECURITY	◐	• *Formal colonist settlements or reserves cover much of the region* • *Most colonist settlements have not yet concluded the environmental licensing process*
MULTI-STAKEHOLDER PROCESSES	●	• *Tradition of grassroots mobilization in support of social and environmental causes.* • *Participatory regional land use planning processes include the BR-163, the Territórios da Cidadania and the Santarém area Sustainable Rural Development Plan*

○ EARLY ◐ INTERMEDIATE ● ADVANCED

BARRIERS & RISKS

Deforestation not under control statewide

- Little perception of mutual benefits that could be realized by reducing deforestation
- Smallholders are left out of the deforestation agenda and INCRA (agrarian reform) settlements have inadequate support
- GMP program is too dependent on political interest of mayor
- Weak state capacity to monitor and enforce Forest Code
- Infrastructure projects, such as the Belo Monte dam, are stimulating colonization and deforestation

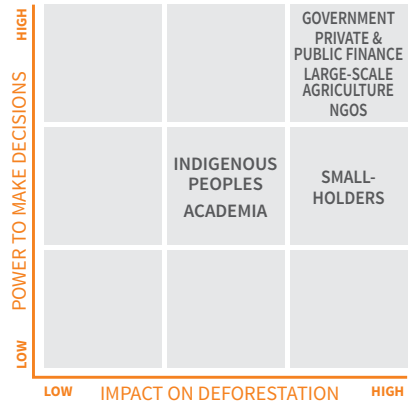
OPPORTUNITIES

- GMP program involves about 3/4 of Pará municipalities, meaning commitments to reduce deforestation and comply with the Forest Code
- GMP continuity enhanced because governor Jatene was re-elected and the Amazon Fund provided R$82 million
- State strong effort for CAR registration, >50% of the state is now in the CAR
- Potential to better integrate smallholder organizations into strategies to reduce deforestation

MULTI-STAKEHOLDER PROCESSES

- Absence of state-wide multi-stakeholder dialogue on LED-R
- Participatory regional planning processes along the BR-163 Santarém-Cuiabá highway resulted in "BR-163 Sustentável" program in 2005; not fully implemented
- Strong history of grassroots mobilization along the Transamazon Highway
- Beef sector has been engaged in regional planning in some *municípios* but generally not at the table

(a)



Key actor groups and their (a) relative decision-making power and impact on deforestation, as well as (b) potential roles in the transition to LED-R.

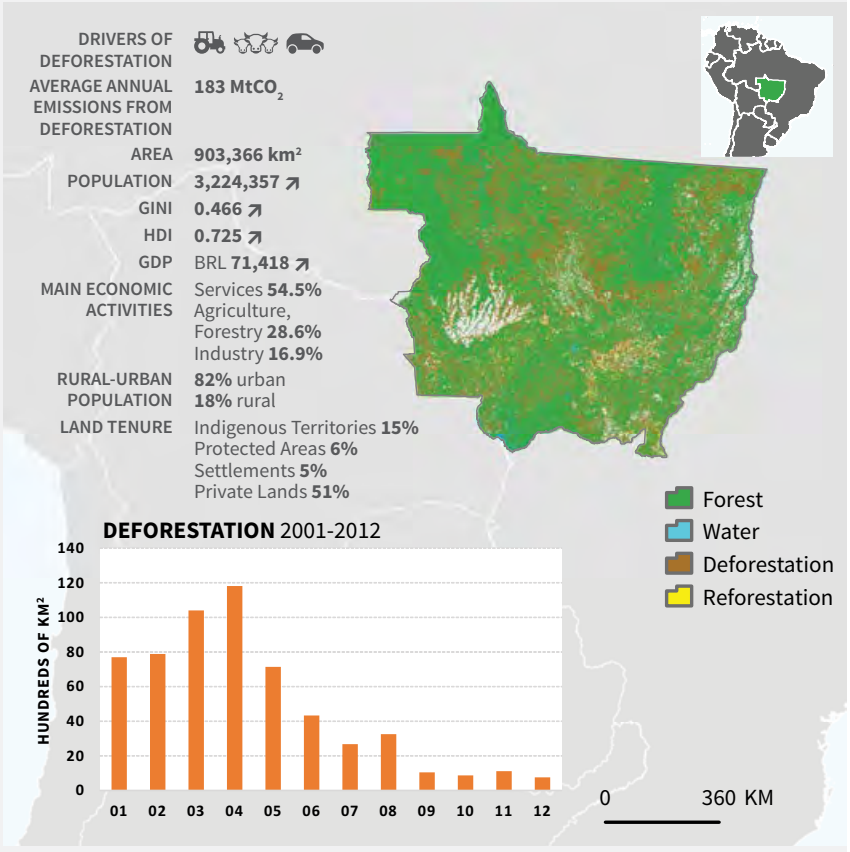
(b)

	Government	*Public Finance*	*Large-Scale Agriculture*	*Smallholders*	*Private Finance*	*NGOs*	*Indigenous Peoples*	*Academia*
FACILITATE	●	●			●	●		●
PROVIDE INFORMATION	●		●	●	●	●	●	●
MONITOR	●		●	●		●	●	●
CHANGE LAND USE BEHAVIOR	●		●	●			●	
MAINTAIN LAND USE BEHAVIOR	●		●	●			●	
CREATE INCENTIVES	●	●			●			

spotlight on mato grosso

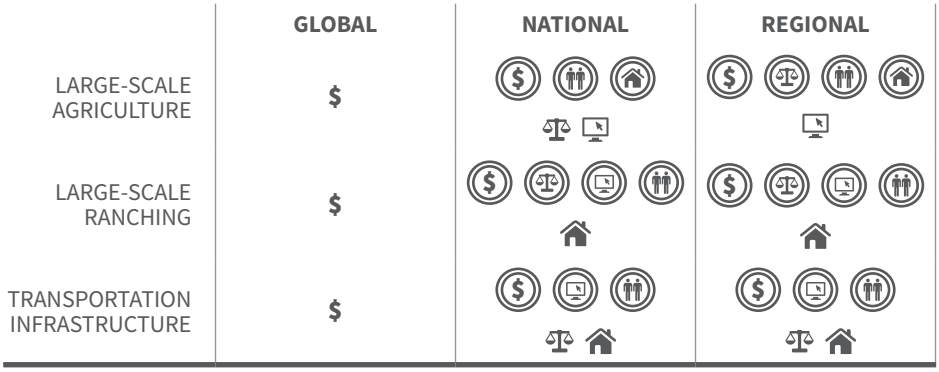
LED-R AT A GLANCE

- Brazil's agricultural powerhouse; Mato Grosso contributed half of the 70% decline in Amazon deforestation while increasing soy and beef production
- State's deforestation declined 90% in 2012
- If it were a nation, Mato Grosso would be one of top contributors to climate change mitigation; but hasn't received climate finance
- Smallholders still largely untouched by deforestation agenda
- Key Innovative Initiatives:
  - *Comprehensive state-wide REDD legislation, awaiting implementation*
  - *Birthplace of the "CAR" (Rural Environmental Registry); Soy Moratorium*



DRIVERS OF DEFORESTATION

- Mato Grosso deforestation linked to global markets for soy, corn, cotton
- These crops rarely planted on newly cleared land, but influence deforestation by raising land value
- Government incentives for road-building and cattle ranching, migration due to land scarcity elsewhere in Brazil are strong contributors to deforestation
- Recent technological advances have led to intensification of cattle and crop production, reducing need for new forest clearing



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PROGRESS TOWARD LED-R

POLICIES	●	• *Comprehensive state REDD law awaiting implementation; little private sector involvement* • *Current focus on farm-level compliance with New Forest Code*
INNOVATIVE LED-R INITIATIVES	●	• *Soy Moratorium renewed through 2015* • *Cattle Agreement continues* • *RTRS & ProTerra certification progressing slowly*
LED-R FINANCE	◐	• *Abundant finance available for farm-level investments, but difficult to access* • *Lack of positive incentive mechanism to reward farm-, county- & state-level success*
MONITORING SYSTEMS	●	• *National deforestation monitoring for Amazon forests available online* • *State system for Cerrado deforestation*
INDIGENOUS & COMMUNITY TERRITORIAL SECURITY	●	• *Indigenous and community land rights recognized by the Brazilian Constitution* • *Most territories are formally recognized/demarcated, with important exceptions*
MULTI-STAKEHOLDER PROCESSES	◐	• *Absence of effective, state-wide, multi-stakeholder dialogue on LED-R* • *REDD Working Group holds potential, but has not engaged private sector* • *Multi-sector dialogues beginning to fill this role*

○ EARLY ◐ INTERMEDIATE ● ADVANCED

BARRIERS & RISKS

Deforestation decline is vulnerable

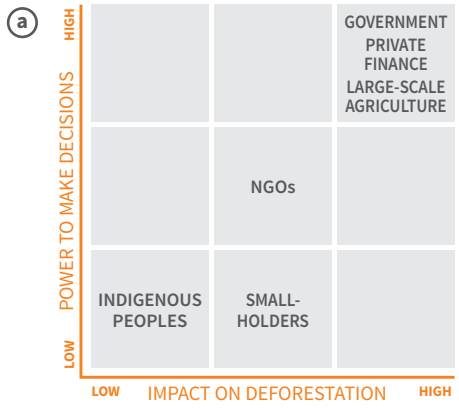
- **Opportunity Costs:** Five million hectares of forest on prime soy land
- **Fragmentation:** many initiatives designed to lower deforestation, each with its own definition of success
- **Incentives:** lack of positive incentives for farmers and local governments striving for sustainability
- **Smallholders Left Out:** Agrarian reform settlements still abandoned; growing share of deforestation

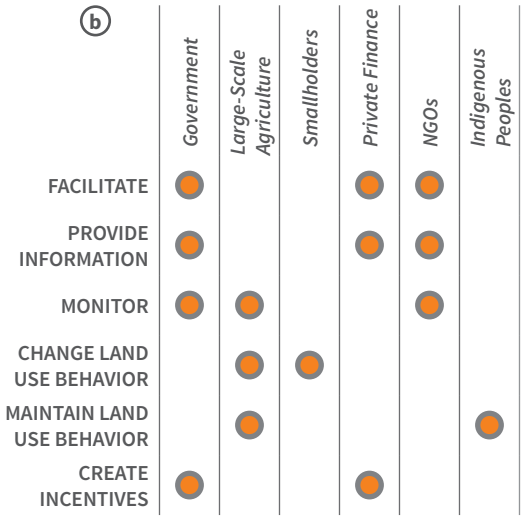
OPPORTUNITIES

- **New Governor:** Opportunity to implement REDD law and launch the REDD Fund with farm sector involvement
- **Multi-Sector Consensus on Definition of Success:** Soy, beef and finance sectors converging on time-bound, state-wide milestones for reducing deforestation, labor infractions, while increasing productivity
- **Launch State-Wide Multi-Stakeholder Dialogue:** Link logic of sustainable supply chains with domestic policy.

MULTI-STAKEHOLDER PROCESSES

Stakeholder processes are fragmented among voluntary agreements (Soy Moratorium, Cattle Agreement), policies (REDD, Forest Code, Ecological/ Economic Zoning Plan), governance initiatives (CAR), with a growing risk that implementation of the New Forest Code will absorb most of the time and energy that government, businesses and civil society have available.



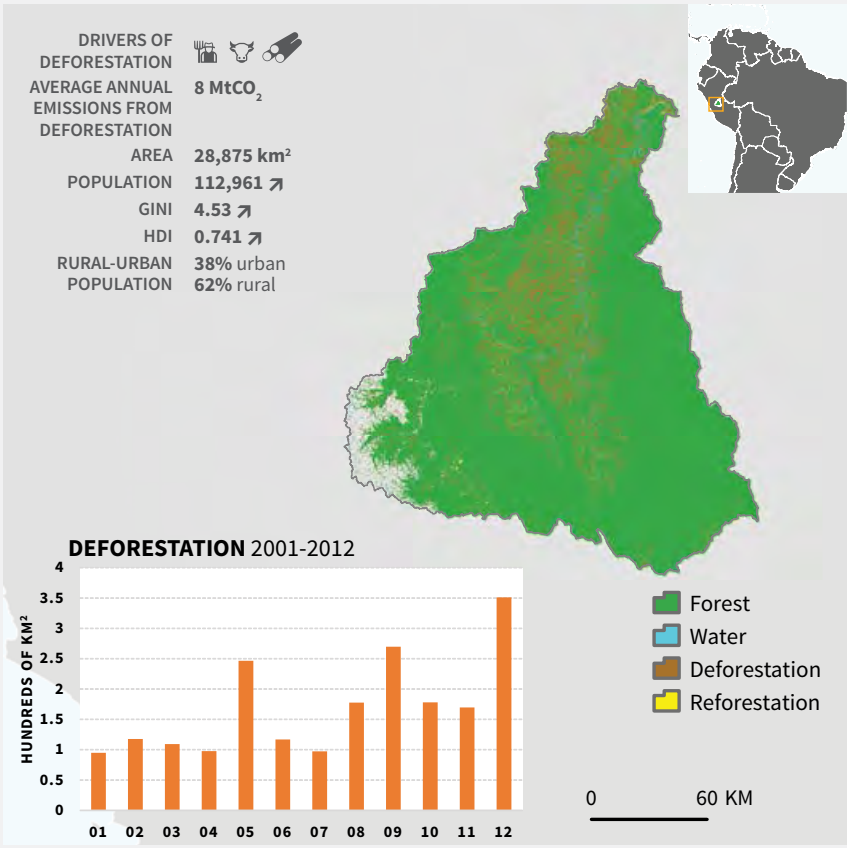


Key actor groups and their (a) relative decision-making power and impact on deforestation, as well as (b) potential roles in the transition to LED-R.

spotlight on the pachitea watershed

LED-R AT A GLANCE

- Peru has a national target of preserving 54 million hectares of forest and reducing the rate of deforestation to zero by 2021.
- Lack of unified legal framework for REDD+
- Key innovative initiatives:
  - *Protected natural areas like the **Oxapampa Biosphere Reserve** represent valuable areas for fostering sustainable land use planning and multi-stakeholder collaboration.*
  - *Local governments have started creating **Coordinated Development Plans** to enhance collaboration across different areas of the watershed*



DRIVERS OF DEFORESTATION

- Expansion of small-scale agriculture and cattle ranching operations in response to expanding markets and population growth drive deforestation
- Illegal cocoa leaf production and informal mining operations, exacerbated by weak governance capacity and land tenure insecurity, also contribute to deforestation

	GLOBAL	NATIONAL	REGIONAL
SMALLHOLDER AGRICULTURE		$	$
SMALLHOLDER CATTLE RANCHING		$	$

$ economic
technology
demographics
social & cultural
policy & institutions
high contribution
icon moderate contribution

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PROGRESS TO LED-R

POLICIES	○	• *Implementation of climate change policies hindered by powerful interests in activities driving deforestation* • *Gaps in sustainable development policies* • *Low institutional capacity for monitoring and enforcement*
INNOVATIVE LED-R INITIATIVES	◐	• *REDD+ initiatives and agroforestry programs function in isolation.* • *New Biosphere Reserve, Oxapampa-Asháninka-Yánesha Biosphere Reserve (RBOAY) could help link diverse initiatives under a LED-R model*
LED-R FINANCE	◐	• *Federal initiatives (e.g. Forest Conservation & Anti-narcotics Programs) investing in conservation-oriented partnerships with communities, agrarian reform and agriculture* • *More positive incentives needed from public and private finance sectors*
MONITORING SYSTEMS	◐	• *National system for satellite monitoring of forest cover* • *Civil society organizations play an important role in mapping and monitoring of indigenous territories*
LAND TENURE SECURITY	◐	• *Indigenous peoples and communities have legal rights to forests; however, government retains rights to subsurface minerals* • *Growing insecurity of collective land rights*
MULTI-STAKEHOLDER PROCESSES	◐	• *Multi-stakeholder dialogues associated with RBOAY and Local-level Concerted Development Plans (Oxapampa province) at the beginning stages*

○ EARLY ◐ INTERMEDIATE ● ADVANCED

BARRIERS & RISKS

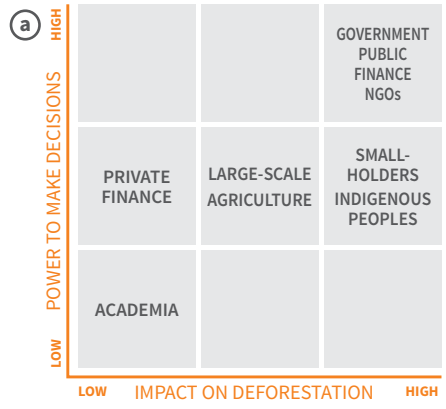
- **Political Disconnect:** Lack of alignment between respective local governments of lower (Pasco) and upper (Huánuco) regions of the Pachitea Watershed impedes improved land-use management
- **Public Finance:** Planning for sustainable planning currently not integral to the Watershed's economic development projects (i.e. road networks and irrigation)
- **Incentives:** insufficient financial and other incentives to encourage forest conservation through agroforestry systems, silviculture, ecotourism and more.

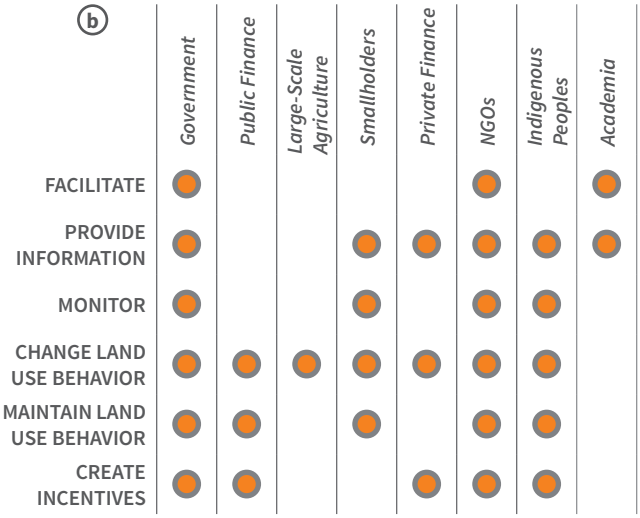
OPPORTUNITIES

- **Multi-stakeholder dialogues** associated with the Oxapampa Asháninka Yánesha Biosphere Reserve can be aligned with the LED-R agenda.
- **National Programs** (i.e.,the Forest Conservation program; Central Jungle MACC program) are applying a multi-stakeholder approach to sustainable development in the watershed
- **Municipal credit banks** provide an opportunity to promote sustainable land use change if they can adopt appropriate criteria for financing environmentally friendly activities.

MULTI-STAKEHOLDER PROCESSES

The regional Mancomunidad (an association of municipalities in the watershed) has aided in the formal recognition of the Oxapampa Biosphere Reserve. This initiative presents an opportunity to enhance collaboration across different regions and integrate LED-R planning. Other districts within the watershed have already expressed a desire to join the association.





Key actor groups and their (a) relative decision-making power and impact on deforestation, as well as (b) potential roles in the transition to LED-R.

PHOTO FILIPE FRAZAO / SHUTTERSTOCK

The **Sustainable Tropics Alliance** is a strategic partnership of independent, non-governmental organizations that draw on research, multi-stakeholder engagement, and local knowledge to develop alternative, low-emission rural development (LED-R) models in the Tropics. The founding members of the Alliance are Earth Innovation Institute (Brazil, Indonesia, Colombia), Pronatura-Sur (Mexico), the Instituto del Bien Común (Peru), the Instituto de Pesquisa Ambiental da Amazônia (Brazil), and Green Belt Movement (Kenya), with collaboration from the Foundation for International Environmental Law & Development. Together, the Alliance seeks to improve rural livelihoods and natural resource management in key region of the Tropics through innovative approaches to LED-R. These approaches emphasize locally informed and designed solutions that integrate into or can scale up to sub-national and national level policies and programs. The Alliance serves as a platform for partners to work together at a global scale in support of policies, institutional arrangements and market mechanisms that support sustainable, low-emission rural development throughout the Tropics. The strength of this network lies in its ability to share lessons learned and to collectively design low emissions rural development strategies that may serve as models for other regions.

FOR MORE INFORMATION http:/earthinnovation.org/our-work/global/sustainable-tropics-alliance/
CONTACT Claudia Stickler cstickler@earthinnovation.org

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