



Subnational jurisdictional approaches

Policy innovation and partnerships for change

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Key messages

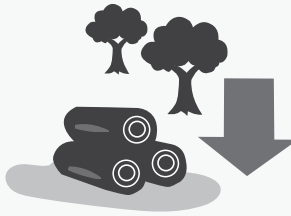
- In a study of subnational jurisdictions across 12 countries, which together contain 28% of the world's tropical forests, all 39 jurisdictions had made formal commitments to reducing deforestation. Most (38 of 39) had also taken concrete actions to implement these pledges.
- The majority of these sampled jurisdictions have developed and implemented integrated jurisdictional strategies, robust jurisdiction-wide multistakeholder processes, and quantifiable, time-bound targets that define their vision of sustainability – despite a scarcity of international climate finance to support these and other interventions.
- Annual deforestation decreased between 2012 and 2017 in just under half of jurisdictions (17 of 39), although any links between actions taken by subnational governments and observed trends in deforestation are yet to be analysed.

Subnational jurisdictional approaches in a nutshell

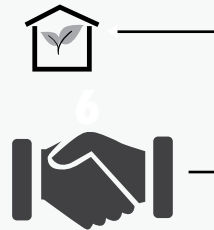
Jurisdictional approaches (JAs) to sustainable development seek to protect forests, reduce emissions, and improve livelihoods and other social, environmental and economic dimensions across entire governmental territories: states, provinces, districts, counties and other political administrative units.



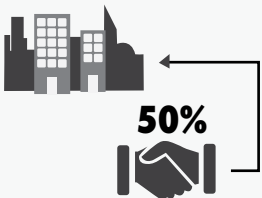
Thirty-nine subnational jurisdictions, containing 28% of the world's tropical forests, made formal commitments to reduce deforestation. Most have taken concrete actions to implement these pledges.



Annual deforestation decreased from 2012 to 2017 in almost half (17 of 39) of these jurisdictions, despite scarce international climate finance.



35 of the 39 jurisdictions have endorsed a set of guiding principles committing them to respecting the rights of forest peoples to their land and resources.



Nearly half of the 39 jurisdictions are partnering with companies seeking sustainably grown supplies of agricultural commodities through consortia or multi-sector processes.



Despite progress in developing sustainability policies and interventions, only a few jurisdictions have advanced policy and legal reforms, plans and actions.



A global framework is needed to drive progress towards jurisdictional sustainability. This should not assume significant new flows of finance are imminent.

12.1 What is a jurisdictional approach?

Jurisdictional approaches – in which a landscape is defined by policy-relevant boundaries, and a high level of governmental involvement is at the core – seek to protect forests, reduce emissions and improve livelihoods across entire governmental territories: nation-states, states, provinces, districts, counties and other political administrative units (Nepstad *et al.* 2013a, 2013b; McCall 2016; Boyd *et al.* 2018). This territorial focus facilitates a strategic alignment with public policies and programmes, and means that governments are usually leaders or active participants in strategy development and implementation. Placing environmental and social sustainability at the centre of efforts to develop and implement an integrated, cross-sectoral and jurisdiction-wide policy agenda is what sets jurisdictional sustainability apart from business-as-usual policy-making.

Subnational jurisdictional approaches grew out of the perceived limitations of both early implementations of REDD+, and agricultural commodity supply chain initiatives, in terms of their abilities to address tropical deforestation (Table 12.1). In the case of REDD+, national governments were slow to develop the policies and programmes necessary to address drivers of deforestation and to generate change on the ground. They were also, at least in the case of large countries, far removed from farmers and forest communities whose behaviours REDD+ was originally designed to influence. Numerous political and economic factors hindered progress, including the lack of incentives to counter business-as-usual deforestation (Seymour and Busch 2016; Angelsen *et al.* 2017; Brockhaus *et al.* 2017). REDD+ projects, meanwhile, proliferated rapidly, typically with little or no relationship to government agencies, public policies and programmes, and with a heavy focus on smallholders to the virtual exclusion of other agents of deforestation (Sills *et al.* 2014; Simonet *et al.* 2015; Table 12.1). These projects also tended to penalise traditional forest stewards (e.g., indigenous peoples) as ‘low performers’ in terms of earning the ‘avoided deforestation/emissions’ credits that are central to many REDD+ schemes.

A similar disconnect from public policies and programmes has slowed the effectiveness of supply chain initiatives (Lambin *et al.* 2018; Luttrell *et al.* 2018; Nepstad and Shimada 2018; Shimada and Nepstad 2018; Table 12.1; Chapter 13). To achieve their corporate zero deforestation pledges, the Tropical Forest Alliance 2020 (TFA 2020), certification bodies (e.g., Roundtable on Sustainable Palm Oil) and individual consumer goods companies (e.g., Unilever, Marks & Spencer and Walmart) have recently started exploring jurisdictional sourcing; i.e., the sourcing of soybeans, palm oil, beef and other ‘forest-risk commodities’ from jurisdictions that have and are able to achieve jurisdictional performance targets related to deforestation, reforestation and other sustainable development goals (Stickler *et al.* 2018).

Table 12.1 Comparison of approaches to reduce tropical deforestation

Approach	Supply chains	Project-level REDD+	National-level REDD+	Subnational jurisdictional
Borders	Farms, plantations and processors of a particular commodity	Local project-level boundaries	National boundaries	Subnational political, administrative boundaries (e.g., state, province, county, district)
Scale	From individual producer to entire commodity sector	Usually small	Medium to large	Small to medium
Stakeholder/actor involvement	Farmers, processors and buyers NGOs in watchdog role	Often limited to a small number of local actors	Should include all actor groups across country Representation may be patchy in large countries	Should include actor groups across subnational jurisdiction Greater potential for representation of diverse actors in a subnational jurisdiction
Key actors	Private sector	Project proponents	Government	Government
Role of government	None to small	None to small	Large	Intermediate to large
Ability of approach to address deforestation, forest degradation and forest restoration	Can provide incentives for farmers and others to reduce deforestation, reinforced by market actors Cannot overcome broader policy/legal issues	Can provide incentives for specific actors to reduce deforestation Can serve as testing ground for new approaches	Can support national policy innovation Can establish national rules for benefit-sharing with diverse actor groups	Can address regional-scale drivers Can experiment with innovative policies and programmes for addressing drivers Can create context for broader benefit-sharing with diverse actor groups
Challenges/barriers	The costs of traceability/ verification and the lack of incentives for farmers	High risk of leakage Carbon price signal and market demand still weak	Carbon price signal and market demand still weak Potentially distant from local and regional actors Bureaucratic, slow	Carbon price signal and market demand still weak Vulnerability to political turnover Subnational authority/autonomy very limited in some nations
Potential of approach to support broader transition to LED-R	Low to medium: new initiatives to link supply chain and jurisdictional strategies are promising	Low: generally isolated from broader policy processes and multistakeholder dialogues	High: can align market signals with regulatory and fiscal incentives to drive change	High: can align market signals with regulatory and fiscal incentives to drive change; can test innovations that are then adopted by national governments

Note: In practice, these approaches could overlap.

Box 12.1 Key concepts

- **Jurisdictional sustainability:** the successful transition to sustainable development – encompassing social, environmental and economic dimensions – across an entire political geography, such as a state, province, county, district or nation. Success is measured ‘wall-to-wall’ across the entire jurisdiction and therefore encompasses the full range of activities, production systems, ecosystems and actors.
- **Jurisdictional approach:** a type of integrated landscape management, with an important distinguishing feature: the landscape is defined by policy-relevant boundaries and the underlying strategy is designed to achieve a high level of governmental involvement.
- **Low-emission rural development (LED-R):** a jurisdictional approach to sustainability, in which climate stability is an explicit goal, there is a focus on rural populations, and both environmental and development concerns are integrated at the scale of the entire jurisdiction.

Unlike these isolated efforts, jurisdictional approaches encourage alignment between REDD+ incentives, sustainable supply chain initiatives, domestic policies and finance, to address the interconnected issues of deforestation, rural livelihoods and food security (Nepstad *et al.* 2013a). In decentralised systems, subnational jurisdictions have at least some legal authority and political power (Larson and Ribot 2009; Boyd *et al.* 2018). Their governments are also often better positioned to communicate with the farmers and communities making land-use decisions (Larson and Ribot 2009; Stickler *et al.* 2015). Because they have authority over more sectors and actors than isolated REDD+ projects or supply chain efforts, and are able to look beyond solitary projects with a typically narrow focus in terms of the actors, issues and goals involved, subnational jurisdictions can be more creative in their solutions when addressing agents of deforestation and/or recognising forest stewards. They also typically deal with a more restricted range and volume of socioeconomic and environmental issues than national-level governments, owing to their smaller scale, and can help advance and support national-level goals.

12.2 Assessment of jurisdictional sustainability across the tropics

Jurisdictional sustainability is achieved when an entire political geography completes the transition to sustainable development; this encompasses social, environmental and economic dimensions. Throughout the tropics, a growing number of subnational jurisdictions have embraced the jurisdictional approach as a framework for building durable programmes for low-emission rural development (LED-R). In this chapter, we examine the efforts of 39 subnational jurisdictions, which together are home to nearly a third of the world’s remaining tropical forests (see Box 12.2 for sample selection). Some of their efforts have been underway for more than a decade, whereas other locations have more recently committed to

comprehensive jurisdictional sustainability. It is difficult – and in many cases too early – to determine whether these efforts have directly contributed to reducing deforestation or emissions from other sources. In most cases, deep systemic changes in forest and land-use governance are needed to achieve these goals. As such, an important indicator of progress for subnational jurisdictional approaches is whether key elements are in place, including: robust multistakeholder processes; policies and programmes aimed at reducing emissions; time-bound and quantifiable targets; and accurate, transparent, and accessible monitoring and reporting systems.

In this chapter, we ask what progress subnational jurisdictions are making, in developing and implementing interventions to support their transition toward LED-R. We review the formal commitments made by each jurisdiction and assess their progress in advancing elements of jurisdictional strategic frameworks that are likely to be integral to achieving sustainability (see Box 12.2 for methods). As well as identifying programmes and interventions that are specifically designed to advance jurisdictional sustainability, we examine the potential for other interventions (not specifically designed with a goal of jurisdictional sustainability) to contribute to an overall jurisdictional sustainability strategy. We also report on deforestation rates and trends in the jurisdictions. However, because of the likely time lag between interventions (policy, market and other) and measurable effects

Box 12.2 Methods for jurisdictional sustainability assessment

In 2017–2018, a comprehensive assessment of 9 elements of jurisdictional sustainability was conducted across 39, mostly first-order, administrative divisions (e.g., states and provinces) within 12 tropical countries (Stickler *et al.* 2018; Figure 12.1). Thirty-five of these subnational jurisdictions are voluntary members of the Governors' Climate and Forests Task Force (GCF TF) and formally decided to develop and apply a jurisdiction-wide approach to LED-R, as did Sabah, Malaysia (not a member of the GCF TF). The remaining jurisdictions (Oromia, Ethiopia; Zambezia, Mozambique; and Mai-Ndombe, DRC) were selected by their national governments to pilot a jurisdictional approach that could be replicated or scaled up.

Secondary data were compiled and interviews conducted with key stakeholders in 33 jurisdictions. Oaxaca and Tabasco, Mexico; Pastaza, Ecuador; Piura, Peru; Papua, Indonesia; and Roraima, Brazil, were not included for most ratings. The full dataset obtained was used to generate progress ratings on the core elements of jurisdictional sustainability described in Section 12.2 and seen in Figure 12.3. These elements were identified through a series of workshops of the Sustainable Tropics Alliance, based on direct experiences with LED-R in 11 jurisdictions across 6 countries (Nepstad *et al.* 2013a; Stickler *et al.* 2014; DiGiano *et al.* 2016; Ell 2017). For each core element, a jurisdiction was rated as being 'early', 'intermediate' or 'advanced' in its progress, based on criteria detailed in Stickler *et al.* (2018). The ratings are best understood as indicating the types of support needed for jurisdictions to advance their LED-R strategies. These data were combined with an analysis of deforestation and emissions between 2000 and 2017 for all jurisdictions.

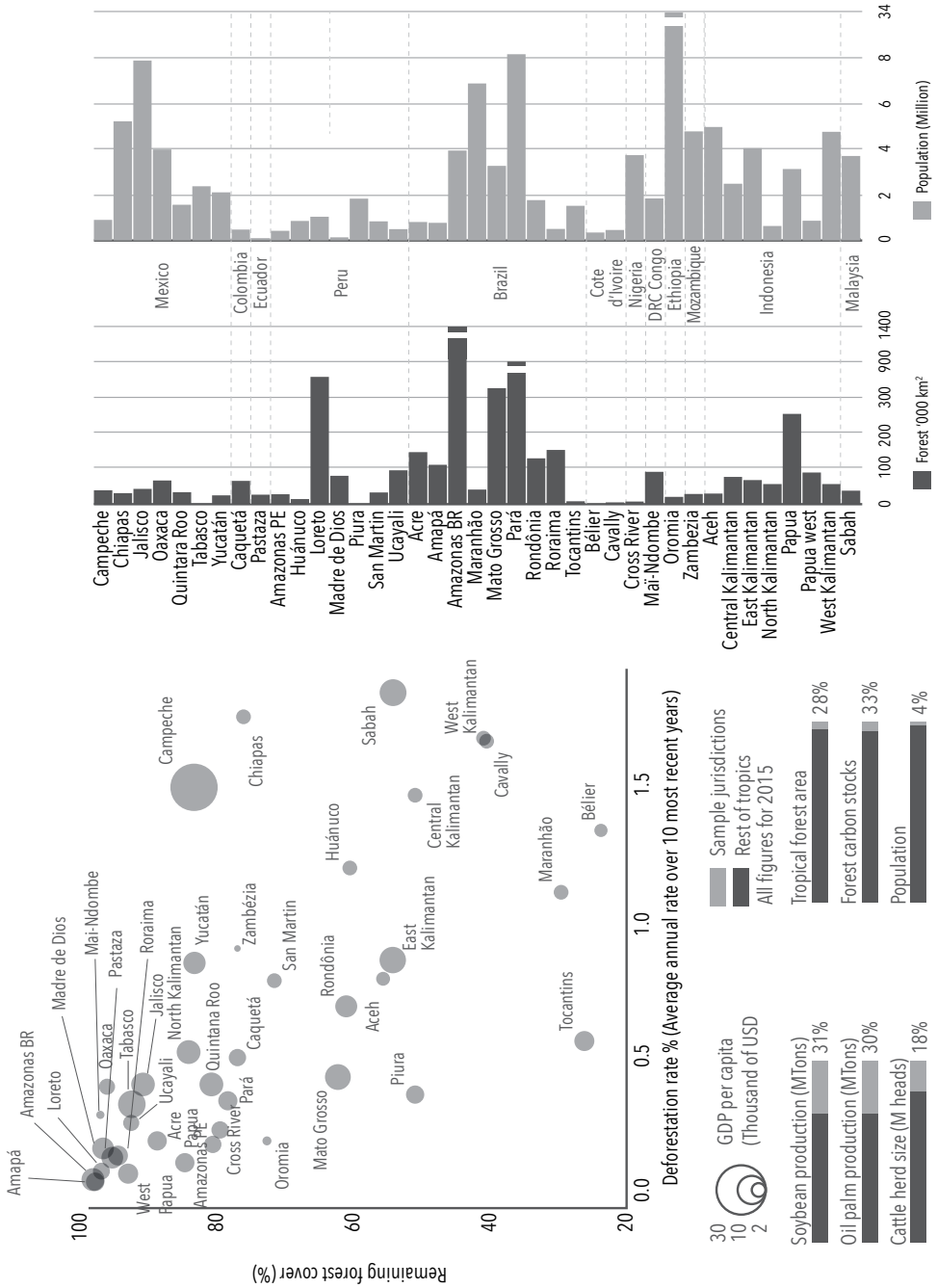


Figure 12.1 Key indicators related to forests and drivers of deforestation in the 39 studied jurisdictions

Source: Details at www.earthinnovation.org/state-of-jurisdictional-sustainability

on forest clearing, and because of the complex relationships and feedbacks between them, we did not attempt to establish causal links between deforestation rates and the actions that jurisdictions have undertaken. Figure 12.1 shows indicators of population, per capita GDP, deforestation rates, and forest cover (% and km²) across the 39 studied jurisdictions, alongside their collective share of selected commodity production, forest area and forest carbon in the jurisdictions, versus the tropics as a whole.

12.2.1 Formal commitments and early action

Across the sample of 39 global jurisdictions, the majority have made formal commitments to reducing deforestation, reducing emissions, restoring degraded lands, and promoting sustainable economic development and social inclusion. These commitments include:

- the Rio Branco Declaration (RBD), under which 35 of the studied jurisdictions committed to reducing deforestation by 80% by 2020, conditional on performance-based funding;
- the Under2 Memorandum of Understanding (U2MOU), under which 27 jurisdictions committed to reducing emissions by 80-95% below 1990 levels (or below 2 annual metric tons per capita) by 2050;
- the New York Declaration on Forests (NYDF), under which 18 jurisdictions committed to halving natural forest loss by 2020 and ending it by 2030; and
- the Bonn Challenge, under which 31 jurisdictions in 10 countries fall under commitments made at national level to restore 150 million ha of cleared and degraded land by 2020, and 350 million ha by 2030.

Such commitments represent formal, public expressions of intent, often serving as jurisdictions' first step towards developing comprehensive jurisdictional strategies for sustainability. Action on such commitments is likely to be critical to bridging the gap between current emissions reduction trajectories and Nationally Determined Contribution (NDC) objectives at the national level. Many of the studied jurisdictions had developed clear performance targets corresponding to these international pledges (Figure 12.2). Many also are financing and implementing policies and programmes, and prioritising indigenous peoples, local communities and smallholder farmers as key beneficiaries of these interventions (Stickler *et al.* 2018).

12.2.2 Progress on framework elements of jurisdictional sustainability

Nine framework elements are considered to be among the most important for the transition to jurisdictional sustainability: (i) an integrated LED-R strategy; (ii) a spatial plan; (iii) performance targets; (iv) measurement/monitoring, reporting and verification; (v) policies and incentives; (vi) multi-stakeholder governance; (vii) sustainable agriculture; (viii) indigenous peoples' and local communities' rights and engagement; and (ix) LED-R financing. Overall, the majority of jurisdictions

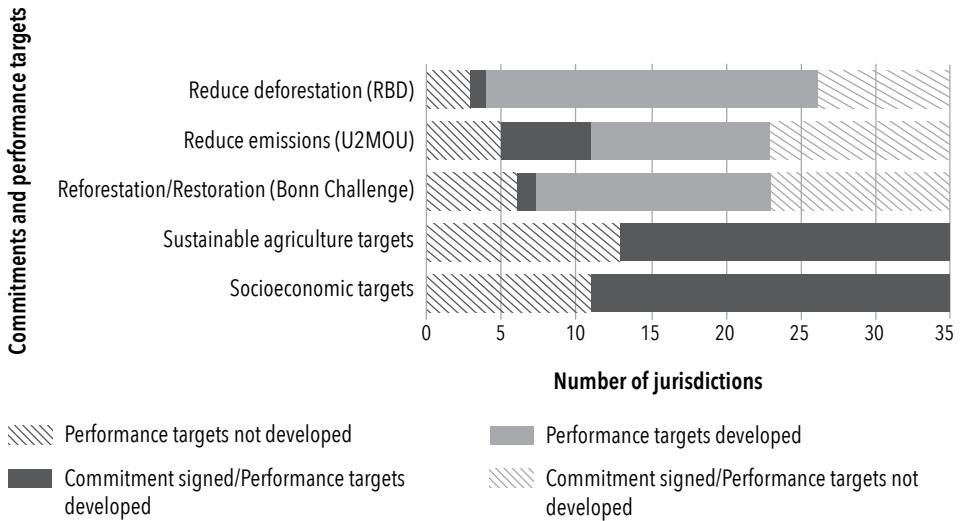


Figure 12.2 Number of jurisdictions with defined commitments and performance targets that correspond to their international-level commitments

Note: RBD = Rio Branco Declaration; U2MOU = Under2 Memorandum of Understanding. This analysis includes 35 jurisdictions (excluding Roraima, Piura, Pastaza, Papua).

Source: Based on Stickler *et al.* (2018)

received ‘intermediate’ and ‘advanced’ ratings for their progress in developing and implementing integrated jurisdictional strategies (21 of 33); relevant jurisdiction-wide multistakeholder processes (20 of 33); and quantifiable, time-bound targets that define jurisdictions’ vision of sustainability in terms of impact indicators (21 of 33) (Figure 12.3). In comparison, jurisdictions were slower at putting in place robust, transparent and accessible MRV systems; establishing the necessary policy, technical and financial support for the transition to sustainable agriculture; and securing the needed finance to advance LED-R readiness and implementation. The state of Acre, Brazil had made the most progress overall (Stickler *et al.* 2018). A summary of jurisdictions’ progress on each element is presented below.

Integrated low-emission rural development strategy: Nearly two thirds of the sampled jurisdictions (21 of 33) have jurisdiction-wide plans or strategies, but only three (Acre and Mato Grosso, Brazil; Sabah, Malaysia) broadly addressed causes of land-based emissions across sectors, and incorporated critical elements such as targets, MRV and incentives. In Brazil, Acre’s Multi-Year Governance and Sustainability Plan (2016–2019) integrates environmental and development objectives (de los Rios *et al.* 2018), and Mato Grosso’s Produce, Conserve, Include (PCI) initiative is linked to the state’s REDD+ law and has coherent strategies for all major sectors (Nepstad *et al.* 2018). In Malaysia, Sabah’s recent Long-Term Strategic Action Plan (LEAP 2016–2035) aligns all sectors and existing policies in a vision for a sustainable economy, and includes state-wide environmental, social and economic goals for 2035 that have been endorsed by most public

agencies (Bahar 2018). However, most jurisdictions still face the challenge of integrating policies and programmes across sectors with environmental and social sustainability as the main prerogative, although efforts are underway.

Spatial plan: Approximately half (17 of 33) of the jurisdictions have legally adopted spatial plans. However, all but 3 (Acre and Pará; Jalisco, Mexico) fail to adequately address indigenous/local community rights or to mitigate the effects of planned infrastructure developments; some plans were developed with a low level or quality of stakeholder participation. In many jurisdictions, spatial plans could support jurisdictional sustainability goals more effectively if they incorporated a broader range of ecological and social parameters, and were better linked to relevant land-use laws.

Performance targets: More than half of jurisdictions have time-bound, quantitative targets related to commitments made for reducing deforestation, forest recovery, sustainable agriculture, and various socioeconomic factors (Figure 12.2). Acre, Mato Grosso and Sabah have a broad range of jurisdiction-wide goals and milestones linked to the integrated LED-R strategies mentioned above. For many others, jurisdiction-specific performance targets are being developed within national-level frameworks, such as subnational implementation of national legislation (e.g., Concerted Regional Development Plans in Peru) and targets established in the context of multilateral financing agreements with tropical countries (e.g., the Letter of Intent between the Central African Forest Initiative and the Government of the Democratic Republic of the Congo). These examples demonstrate how national-level frameworks can foster subnational action towards international goals.

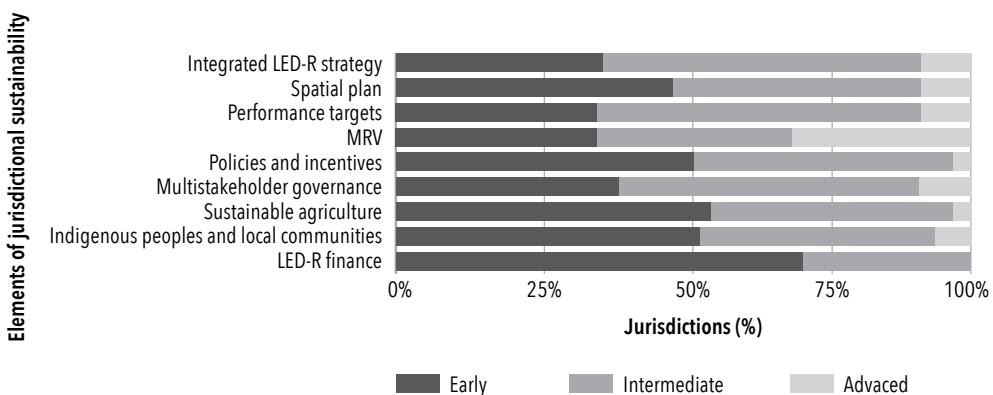


Figure 12.3 Progress on elements of jurisdictional sustainability (E = early; I = intermediate; A = advanced) indicated by percentage of 33 sample jurisdictions achieving each of the three rating levels (see Box 12.2)

Source: Stickler *et al.* (2018)

Measurement, reporting and verification: Although nearly all jurisdictions have measurement, reporting and verification (MRV) systems (primarily for tracking forest cover) under development or in place, most still fall short in one or more of the following areas: frequency, reliability, accuracy or transparency. Twelve jurisdictions were rated 'intermediate' because, despite having technically advanced systems (either jurisdiction-specific or as part of the national system), they failed to make their reports and data available to the public. While jurisdictions in Brazil, Colombia, Peru and Mexico were able to leverage the subnational data provided by national-level MRV systems, only one third of all jurisdictions in the sample had a preliminary or partial MRV system in place at the subnational level. Even fewer had systems (in place or under development) capable of monitoring progress towards a broader range of jurisdictional performance targets; notable exceptions include Mato Grosso and Acre, Brazil, along with San Martín and Ucayali, Peru. Limited institutional and political support and lack of capacity were major challenges hindering subnational-level MRV systems from being adapted or developed to align with jurisdictional performance targets. The majority of jurisdictions outside Brazil have struggled to make the data and methods used for monitoring forest clearing and other issues publicly accessible, whether for political or technical reasons.

Policies and incentives: Many jurisdictions have developed policies and programmes aimed at achieving LED-R. Interventions range from broad 'green growth' policies (e.g., East Kalimantan, Indonesia), to payment for ecosystem services programmes (e.g., Quintana Roo and Chiapas, Mexico), to initiatives that give value to sustainable agricultural and forestry products (e.g., cocoa in Huánuco, Peru; non-timber forest products in Amapá, Brazil). Although some jurisdictions have begun to coordinate their interventions through integrated LED-R strategies (e.g., Caquetá, Colombia; Jalisco, Mexico; Sabah, Malaysia; and Mato Grosso, Brazil), only Acre, Brazil, has coherent state policies that align with national policies for all relevant sectors affecting land use. In over half of the jurisdictions, interventions tend to be isolated and/or narrow in scope. Other important challenges to the development of durable LED-R interventions include political turnover, centralised national governance structures, powerful elites, and corruption at subnational and national levels.

Multistakeholder governance: Robust multistakeholder processes are considered a key element of successful jurisdictional approaches, and can help provide legitimacy and political durability to LED-R policies and programmes (Boyd *et al.* 2018). Recent or ongoing multistakeholder processes relevant to LED-R exist in 20 jurisdictions, but very few (Acre, Jalisco, Quintana Roo) have established broadly representative multistakeholder bodies with the specific goal of developing and implementing LED-R plans and activities. Most often, either indigenous peoples and local community representatives or private sector actors are left out of such processes. Governments do not typically have a model for carrying out consultations or engaging diverse stakeholders; likewise, broad participatory

consultations are time-consuming and expensive, which may make them less likely to be carried out than simple 'box-ticking' exercises. Multistakeholder processes are also often organised around a particular theme, instead of operating at the jurisdictional scale to support broader LED-R strategies (see also Chapter 7).

Sustainable agriculture: Fourteen of the 39 jurisdictions have started activities to support the transition to more sustainable agriculture. Only Mato Grosso, however, exhibits a wide range of more advanced initiatives addressing both large and smallholder crop and livestock production, including negotiations with major soybean markets for large-scale jurisdictional sourcing agreements aligned with the state's Produce, Conserve, Include initiative (Nepstad *et al.* 2018; Box 12.3). Nearly half of the 39 jurisdictions have established partnerships with companies (six of them with formal contracts) targeting formal preferential sourcing, financial investment, or technical assistance to the jurisdiction. The majority of jurisdictions, however, are hampered by a lack of incentives and support for sustainable agriculture (including weak market access) – for larger landholders and businesses and smallholders alike – along with low private sector engagement in the jurisdiction's sustainability agenda.

Indigenous peoples' and local communities' rights and engagement: Recognition of the rights of indigenous peoples and local communities, and equitable benefit sharing are key components of successful jurisdictional approaches to LED-R (DiGiano *et al.* 2016). In 18 of the 33 jurisdictions, land tenure and access rights for these populations are weak or poorly enforced, and/or their participation in jurisdictional dialogues is low. An important step to addressing this shortcoming was taken in 2018, when 35 of the 38 Governors' Climate and Forests Task Force

Box 12.3 Mato Grosso: Sustainable commodity production through public-private partnerships and a jurisdictional strategy

In 2015, a multistakeholder process in Mato Grosso, Brazil, spearheaded by the state government, resulted in the establishment of jurisdictional targets for increasing soy production and beef productivity. This sharply slowed deforestation and increased technical assistance to the state's many smallholder farmers. The Produce, Conserve, Include (PCI) strategy was announced at the Paris climate summit, with the PCI targets representing GHG emissions reductions of 4 GtCO₂ by 2030 in forest carbon, plus additional reductions in methane. Since that announcement, Mato Grosso was awarded a 'pay-for-performance' contract of approximately USD 50 million from the German REDD Early Movers (REM) programme and the UK Department for Business, Energy and Industrial Strategy, in recognition of both the PCI and the state's creation of a comprehensive jurisdiction-wide REDD+ law. Farm sector participation in the PCI has been the most challenging dimension of the strategy, but it could be strengthened if the state-wide goals are translated into sourcing partnerships with the EU or China that deliver benefits to the state's farmers. One of the most promising mechanisms for this is to translate a portion of the accumulated verified emissions reduction – roughly 700 MtCO₂ as of 2017 – into farm-level benefits.

(GCF TF) member-governments endorsed a set of guiding principles committing them to respecting the rights of forest peoples to their land and resources (GCF TF 2018). Implementation of these is already underway in Acre and Mato Grosso, Brazil; Quintana Roo, Mexico; and in Central Kalimantan and West Papua, Indonesia. The potential of subnational governments to support indigenous peoples is perhaps best illustrated by the 20-year partnership between the Government of Acre and the indigenous peoples of that state (DiGiano *et al.* 2018).

Finance: As of 2016, 29 of the 39 jurisdictions studied had received or were scheduled to receive approximately USD 2.3 billion in international climate finance. Most of this finance (88%) reaches jurisdictions without results-based conditionality. Six states in the Brazilian Amazon have received a total of USD 220 million in funding through the Amazon Fund, however performance requirements are the responsibility of the national government. Germany's REDD Early Movers programme has made important contributions to the jurisdictional REDD+ strategy of Acre and has established a contract with Mato Grosso – the only jurisdictions studied that received (or were scheduled to receive) direct results-based finance. These jurisdictions are also the best positioned to meet the proposed California Tropical Forest Standard (Box 12.4). There is an urgent need for adequate and diverse sources of finance to support states and provinces that are at early and intermediate stages of progress.

Box 12.4. California's long-awaited tropical forest carbon market

There are signs that new mechanisms to compensate tropical forest jurisdiction progress in slowing deforestation are on the near-term horizon. The California Cap-and-Trade regulation, which was adopted pursuant to the California Global Warming Solutions Act of 2006 (also known as Assembly Bill 32, or AB32), includes a framework for the inclusion of international offsets from sector-based programmes. Under this framework, the future approval of a sector-based tropical forest programme could allow capped entities in California, such as power companies, to account for a small share of their GHG emissions by purchasing verified emissions reduction from qualifying jurisdictional programmes that reduce emissions from tropical deforestation. This regulatory framework was an important motivating factor for the creation of the Governors' Climate and Forests Task Force (GCF TF), the largest and oldest network of jurisdictions focused on slowing tropical deforestation to reduce carbon emissions. In September 2018, Governor Jerry Brown gave the go-ahead for opening the draft California Tropical Forest Standard to public consultation (CARB 2018). The standard establishes the requirements for MRV, reference levels, social and environmental safeguards, and carbon accounting of the eventual California market. If endorsed by the California Air Resources Board, the standard would establish the conditions under which tropical forest jurisdictions could link to the California carbon market through a future regulatory amendment process, thus establishing the world's first compliance market for emissions reduction achieved by slowing tropical deforestation.

12.2.3 Deforestation and emissions trends

Overall, 346,615 km² of forests – an area about the size of Germany – were cleared between 2000 and 2017 in the 39 jurisdictions combined. This area represents 6.6% of the primary forest cover remaining in the jurisdictions at the beginning of the period, and 32% of all forest lost in the tropics over the same time period. Annual deforestation increased between 2012 and 2017 in 18 of the 39 jurisdictions, remained stable in 9 jurisdictions and declined in another 12 jurisdictions. Aggregate deforestation over the five-year period in jurisdictions exhibiting an increase was 50,133 km², 1.7 times greater than in jurisdictions with decreasing and stable deforestation rates combined. In aggregate, the jurisdictions in the sample still retain 80% of their original forest cover (4.98 million km² remaining), with a total carbon stock of 69 GtC.

Overall, deforestation in half of the studied jurisdictions declined below projected subnational forest reference emission levels (FRELs). These were calculated using identical criteria to those defined by national or regional FRELs submitted to the UNFCCC as a measure of jurisdictional commitment and subsequent performance (Stickler *et al.* 2018; Chapter 4). From 2006 to 2017, deforestation in the Brazilian states declined by 115,000 km² (representing 6.2 GtCO_{2e} in avoided emissions – equivalent to about one tenth of annual global emissions) relative to the 1996–2005 average (FREL), an achievement attributable in large part to national policies and programmes (Nepstad *et al.* 2014). The 70–80% decline in deforestation in Brazil dominated the overall deforestation pattern. Smaller reductions in deforestation rates relative to FRELs were found in Peru (Huánuco, Loreto, San Martín, Ucayali), Indonesia (Aceh, Central Kalimantan, East Kalimantan, Papua), Colombia, (Caquetá) and Ecuador (Pastaza) (Stickler *et al.* 2018).

12.3 Conclusions and recommendations

One third of the world’s tropical forests is located in subnational political geographies that have committed to jurisdictional sustainability agendas, and are making qualitatively measurable progress in building the strategies, public policies and programmes necessary to achieve low-emission rural development. Nearly half of these jurisdictions have seen declining deforestation rates in the last half-decade, although the link between actions taken by subnational governments and observed trends in deforestation is yet to be analysed.

Despite substantial progress in developing policies and interventions to support sustainability, truly advanced policy and legal reforms – and other plans and actions – have taken place in just a few jurisdictions, including Acre, Mato Grosso, Jalisco and Sabah. Acre is most advanced, in large part because it has a 10–20-year lead over other studied jurisdictions in developing a political platform (‘Florestania’) that puts forest conservation and support for sustainable livelihoods at its centre

(Schmink *et al.* 2014). Mato Grosso, Sabah, Jalisco and some of the other more advanced jurisdictions (e.g., East Kalimantan, San Martín, Quintana Roo) have also developed key policies and programmes, which only more recently evolved into more formal political platforms or jurisdictional strategies that prioritise environmental outcomes across all sectors.

How and why do jurisdictions with integrated programmes that place social-environmental sustainability at their core advance further? This is undoubtedly driven by many factors, which need to be analysed in detail. Among these may be the degree of decentralisation, the political and economic power and/or autonomy of a jurisdiction, the length of time over which the jurisdictional approach has been under development or implementation, key policies, incentives and programmes that are in place or under development, and human and financial capital.

The actions already taken by the studied jurisdictions are notable, given the scarcity of positive incentives for LED-R. The existing incentives for tropical forest states and provinces to mobilise the financial resources, public policy innovations, law enforcement, and political capital that are necessary to slow deforestation at scale are still relatively weak. The research presented here highlights the need for purposeful investments in jurisdictions at all stages of progress, not just those that are most advanced. Given the significant expanse of forests located in these jurisdictions, it is essential that they can continue to advance both enabling elements and strategies.

This assessment suggests the need for a global framework to drive progress towards jurisdictional sustainability, without assuming that large new flows of finance are imminent. Some of the main opportunities for accelerating transitions to LED-R include: (i) developing broadly-shared definitions of success in addressing tropical deforestation; (ii) developing better mechanisms for recognising the efforts of aspiring jurisdictions (e.g., via funding or other means); (iii) providing support for partnerships between government and indigenous peoples/local communities; and (iv) fostering company-government partnerships that are aligned with the LED-R strategy, and made more commercially attractive by verifying already achieved emissions reductions.

Support for successful subnational jurisdictional programmes is also important because of the implications for a broader transition to LED-R. Well-designed, functional subnational jurisdictional approaches should help national programmes, supply chain initiatives and REDD+ projects achieve their goals. Having a diversity of approaches to forest and land-use governance and sustainable development should not be seen through the lens of a zero-sum game, but rather from the perspective of supporting a race to the top, in which subnational jurisdictions and other actors and initiatives are simultaneously encouraged to maximise their potential for success, by working in concert.

