

Policies that support forest landscape restoration

What they look like and how they work

Lydia Slobodian, Adriana Vidal and Carole Saint-Laurent



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Executive summary

A successful process to advance forest landscape restoration (FLR) needs to motivate, enable and resource its implementation. This brief offers a preliminary exploratory analysis of some of the range of policies that respond to each of these three requirements.

An excellent tool to motivate decision-makers and stakeholders to embark on a FLR process is the setting of targets, commonly in terms of the number of hectares to be brought under restoration by a specific year. These targets can be informed by the evidence generated during restoration opportunity assessments, as well as by political priorities, and are most effective when incorporated into a vision of the specific challenges the FLR target will address (food security, water availability, adaptation and resilience, etc). Integrated land use planning¹ through the FLR approach provides an effective framework through which restoration activities can be conducted. Planning efforts that promote or require restoration should consider the multiple ecological, social and economic interests and needs to be met in a landscape. They should set out objectives, geographical and temporal scales as well as a fair balance of trade-offs, ensuring that ecosystem integrity is guaranteed.

FLR-supportive policies also enable the suitable conditions for implementation of restoration action. These policies focus on providing clear and secure rights to, and tenure of, land and natural resources. They also, more broadly, deal with the question of how governance structures and processes of decision-making shape power relations and interactions between different stakeholders. Of particular importance for FLR are policies that ensure inter-institutional coordination and inclusive decision-making, so that FLR programmes are designed from the bottom up.

To implement FLR, FLR-supportive policies must mobilise capacity reinforcement programmes that provide pathways for on-the-ground action such as extension services, network creation, partnerships, certification programmes, etc. It is also a prerequisite that public incentives and financing for FLR are in place, and that such schemes should be carefully designed to consider who benefits and who bears costs, in order to align with the expectations of the benefits from FLR and ensure restoration outlives the planning stage. Regular evaluation of FLR interventions is necessary to adjust and update strategies, for which policies can include requirements for generating baselines and a monitoring framework. The case studies presented as part of this analysis illustrate some FLR-supportive policies related to these three needs: compelling motivations for action from decision-makers, enabled citizens' rights to resources and equitable governance of power relations, and sufficient capacity and financial resources for implementation. The body of case studies establishes a variety of targets for restoration and demonstrates key elements across the FLR process. Legal frameworks that require the implementation of FLR-type activities to compensate and offset the impacts of extractive infrastructure or urban development activities in Colombia is an example of motivation to restore coming from a legal mandate. The case study from Ethiopia shows the value of legal frameworks as enabling of FLR by recognising community rights and responsibilities to forest resources to enable smallholders to be agents of restoration, albeit within certain restrictions. The experience from Madagascar indicates that successful legal frameworks for community forest management are best aligned with local governance norms and culture and should capitalise on existing customary institutions to enable FLR. Vietnam's payment for forest ecosystem services programme is an example of public funding to precipitate the implementation of FLR-related activities and maintain engagement in the long term. Particular attention was given to mangrove ecosystems, due to the complex regulatory and planning provisions that pertain to such environments, and the thematic case study is instructive for FLR efforts that have to engage with multiple national legal and policy frameworks.

Introduction

Support and demand for forest landscape restoration (FLR) are growing, evidenced by increasing commitments and action on restoration from countries, communities, donors and the private sector, as well as by the proclamation by the UN General Assembly of 2021 to 2030 as the UN Decade on Ecosystem Restoration.

Experience has shown that for FLR to be successful, it needs to be supported by policies that incentivise, facilitate and mobilise the implementation of FLR. However, many stakeholders are unaware of what these FLR-supportive policies look like, and as such, what to look for in order to improve their current legal framework.

This analysis describes the particular characteristics that are integral to FLR and identifies key success factors to create a supportive policy environment. This information can serve as a useful aid for improving policy and legal frameworks that support FLR in national and subnational jurisdictions.

¹ Integrated land use planning "assesses and assigns the use of resources, taking into account different uses, and demands from different users, including all agricultural sectors - pastoral, crop and forests - as well as fisheries, tourism, industry and other interested parties" (Lausche, 2019).

The first part of the document offers an overview of critical elements for FLR-supportive policies to motivate, enable and implement FLR. Examples of existing policy and legislative frameworks are provided for each of the elements addressed. most of which are derived from the country case studies presented in the Annex: Vietnam, Ethiopia, Madagascar, and Colombia. The case studies highlight central legal or policy issues in the land-use sector and provide examples of policy frameworks that address them, which can serve as inspiration and reference for other countries implementing more specific FLR solutions. This document also presents a thematic case study with information on special policy considerations for mangrove ecosystems. The final section of the analysis presents common elements and lessons learned.

Features that define FLR

To identify FLR-supportive policies, it is necessary first to understand what are the particular features that define FLR. As shown in Box 1, FLR – which can also be thought of as "best-practice" restoration – is based on several principles.

Forest Landscape Restoration (FLR) is a process for designing and implementing landscape-level interventions to restore ecological functionality and enhance human well-being across degraded and deforested land. Through FLR, it is possible to address many of the difficulties and risks created by current levels of climate change, land degradation, overconsumption of resources and other developmental challenges.

Fundamental to FLR is that its planning is done at the landscape level. The landscape is a mosaic of multiple ecosystems, resources, activities, stakeholders, rights and values across which tradeoffs need to be balanced and benefits optimised. It is at the landscape level that trade-offs amongst competing interests may be seen and negotiated, which is not possible when working only at the site level. This diversity of elements and interests also shapes the laws and policies that impact the design of FLR strategies, which include forests, land use, agriculture, environment, indigenous rights, taxation and budgets, among others. Customary and religious law can be as relevant as government policies and legislation (Meinzen, Dick and Pradhan, 2001). As such, restoration strategies should aim to balance the competing objectives of different land users and stakeholders and trigger synergies as well as enhancements in vertical and horizontal coordination (IUCN, 2019). Moreover, governance processes and safeguards must be in place to ensure the involvement of multiple actors, such as government agencies, various land users and rightsholders, including different genders and ethnic groups. This is necessary to make inclusive decisions that address different interests, balance trade-offs and optimise benefits.

Box 1: Forest Landscape Restoration Principles (IUCN, 2015)

- Focus on landscapes: FLR takes place within and across entire landscapes, not individual sites. It is at this scale that ecological, social and economic priorities can be balanced.
- Maintain and enhance natural ecosystems within landscapes: FLR does not lead to the conversion or destruction of natural ecosystems. It enhances forests and other ecosystems.
- Engage stakeholders and support participatory governance: FLR actively engages stakeholders at different scales, including vulnerable groups.
- Tailor to the local context using a variety of approaches: FLR uses a variety of approaches adapted to the local context, drawing on science, best practice, and traditional and indigenous knowledge.
- Restore multiple functions for multiple benefits: FLR interventions aim to restore multiple ecological, social and economic functions and generate a range of ecosystem goods and services that benefit multiple stakeholder groups.
- Manage adaptively for long-term resilience: FLR seeks to enhance the resilience of the landscape and its stakeholders over the medium and long-term.

Types of FLR supportive policies

This analysis draws on the key factors identified by World Resources Institute and IUCN as part of the Restoration Opportunities Assessment Methodology regarding legal requirements, policy aspects, institutional arrangements and government incentives that should be in place for the success of FLR (IUCN and WRI, 2014). These factors manifest at different times in the FLR process and translate into FLR-supportive policies that foster: 1) motivation of public and private actors to support restoration and avoid degradation; 2) the setting of enabling conditions to facilitate FLR; and 3) the resourcing of implementation of FLR measures through capacity development and financial resources (Hanson, et al., 2015).

FLR-supportive policies address these needs through the establishment of targets and regulations to motivate public and private action; the defining of enabling conditions in the form of governance structures and rights regimes; and allocation of technical and financial resources to implement activities and monitor results. This section examines more closely these different types of FLR-supportive policies.



Figure 1. FLR stages and role of supportive policies

1. Motivating action

The scaling up of FLR requires that a large number of stakeholders are sufficiently motivated to take part, as a consequence of their understanding the benefits of restoration from different perspectives and resultant willingness to invest efforts and resources to change business-as-usual behaviours in the long term. A range of legal tools can be used to motivate FLR by setting targets, regulating activities and promoting restoration (Figure 1).

1.1. Target setting

Motivating FLR actions on the ground begins with realistic and ambitious targets at the national and landscape levels. This can help to achieve consensus among actors, mobilise funding and deliver a clear signal to stakeholders, including those from the private sector, that political support exists for investment in FLR. International processes and voluntary movements that foster FLR can inform this process, such as the Bonn Challenge. To date, 74 countries, subnational jurisdictions and nongovernmental organisations have pledged over 210 million hectares to the Bonn Challenge and its contributing regional initiatives, consolidating the global movement to bring under restoration 150 million hectares by 2020 and 350 million hectares by 2030 (IUCN, 2011). Many countries have also set out terrestrial restoration targets under their national Land Degradation Neutrality Target Programmes, National Biodiversity Action Plans and climate change Nationally Determined Contributions.

A target based on the number of hectares to be restored can be an excellent starting point (see Table 1 for examples of targets). Targets will unfold into more detailed strategies with restoration requirements at the national and landscape-levels, which should be crafted based on the multiple uses of a landscape and the different benefits to be achieved, such as species diversity, soil quality and restoration of essential ecosystem functions like carbon storage and freshwater. FLR strategies should also inform questions relating to 'how', 'when', and 'by whom' the restoration will be realised. They will need to be adjusted periodically to ensure adaptive management as circumstances evolve.

In this early stage, it will be essential to secure the buy-in and engagement of government sectors and actors that will be involved in the development of strategies.

Table 1: Examples of policy instruments with FLR supportive targets

	Relevant legal instrument(s)	FLR supportive targets	
General policy and targets	Ethiopia, Growth and Transformation Plan II (2015-2020)	Place 2 million ha of natural forest under participatory forest management. Identify/demarcate 4.5 million ha of degraded land for afforestation/ reforestation. Increase national forest cover by 4.5%.	
	Ethiopia, National Forest Sector Development Program (2016-2025)	Promote restoration of degraded/deforested landscapes. Increase national forest cover to 20% by 2020 and 25% by 2025 through sustainable management of timber and non-timber forest products.	
	Vietnam, National REDD Action Plan	Increase forest coverage to 45%.	
	<u>Madagascar, NDC</u> (<u>2015)</u>	Restore 35,000 ha of primary forests and mangroves by 2020; 45,000– 55,000 ha by 2030. Increase emissions reduction in LULUCF ² by 61MtCO2 by 2030.	
	Colombia, National Restoration Plan 2015	As part of Phase 3 of their national plan: bring 1,000,000 ha of disturbed areas into the process of restoration.	

1.2. Integrated spatial planning and restoration requirements

One of the defining principles of FLR is that planning is done at the landscape scale, as this enables implementers to optimise outcomes by balancing the often-competing needs of different land users, including government agencies and other stakeholders. Integrated spatial planning processes for FLR can be helpful in answering questions concerning the "why", "where" and "how" of restoration projects. FLR planning processes motivate the various actors by including negotiation trade-offs between different ecosystem services and social, ecological and economic values. In this undertaking, it is critical to integrate governance considerations of inclusive decision-making, recognition and respect for tenure rights, cultures and knowledge systems (see section 2.3 below). This will ensure that agreement exists on which approaches to adopt in order to achieve specific targets from the outset of the project. Successful FLR initiatives create multiple benefits that can be shared among stakeholders to ensure those who implement restorative activities or change their current actions to allow restoration to happen are appropriately compensated, and all are better off.

Integrated spatial planning for FLR should establish objectives, geographical limits and project timeframes. These preliminary steps could include defining categories of land use and the rights associated with each, identifying which activities are allowed/promoted/required and whether they need to be implemented, with respect to management plans, licences, or other requirements. There could be development controls such as zoning laws, conditions on development, or offsets for environmental impact. Sustainable use laws and regulations can guide the implementation of activities to ensure that land-use activities take account of productivity, biodiversity and other environmental priorities (see Table 2 for examples). Integrated planning that mainstreams biodiversity and climate change priorities is a useful tool to ensure that various planning processes complement and reinforce each other to balance interests and achieve national goals (Lausche, 2019). One way of starting this process is through sciencebased analysis for restoration potential, which is achieved through the application of the Restoration Opportunities Assessment Methodology (ROAM), developed by IUCN and WRI (IUCN and WRI, 2014).

² LULUCF stands for Land use, land-use change, and forestry sector.

Box 2: FLR planning and definitions

In policies relating to planning and regulation, definitions are essential. Are degraded lands defined as forests or as abandoned lands available for appropriation? Does the definition of forests include young, regenerating forest, or only mature stands of trees? Does it include mangroves? What about plantations? Are there any obligations to manage land in a certain way (e.g. keeping a minimum of tree cover in agricultural areas near water bodies or the need for a management plan), requirements to communities or private owners to keep properties fertile and productive, or prohibitions against cutting indigenous trees in productive lands? The answers impact ownership and governance and determine protections and restrictions. Ambiguous definitions undermine FLR.

Command-and-control legal requirements for restoration are often connected to permits for extractive industries' activities, offsetting obligations, land management requirements or land-ownership conditions. Restoration requirements could be included in environmental impact assessments and permitting systems. FLR supportive legal frameworks can include mandates for environmental impact assessments in order to avoid, minimise, and restore damage caused. Permits for commercial

activities that affect natural resources should be contingent on obligations to offset or compensate for harm through activities that restore or protect equivalent biodiversity elsewhere (see Case Study on Colombia compensation and offsetting system). Legislation should ensure that offsets follow the mitigation hierarchy and are only used where harm is impossible to avoid, minimise or restore (IUCN, 2016).

	Relevant legal instrument(s)	Description
	Ethiopia, Proclamation no. 1065/2018	Defines different categories of forest and rights associated with each. Prohibits grazing livestock, hunting, keeping beehives, settling or cutting trees in state forest; prohibits cutting indigenous naturally grown trees in either state or community forest; prohibits expanding farmland in demarcated forest land.
	Vietnam, Land Law 2013	Requires that national land-use planning includes information related to the determination of land areas for protection forest, special-use forest and production forest (art. 38).
	Vietnam, Forestry Law 2017	Requires that forestry planning be in compliance with national master plans, national forest development strategies, etc. (art. 10).
Planning and regulation	Vietnam, Law on Environmental Protection 2014	Places responsibility on those involved in survey, extraction, exploration, utilisation of natural resources for environmental restoration (art. 37). Organisations and individuals involved in mineral extraction/exploration/ processing must have a plan for restoration and make an environmental restoration deposit (art. 38). Compels environmental remediation after an aquaculture business is terminated (art. 71(4)(b)). Requires that organisations and individuals subject to restoration requirements make a feasible plan for restoration when executing projects likely to cause pollution (art. 107).
	<u>Madagascar Law 97-</u> 017 (1997)	Defines forests to include land which has been deforested for less than five years (not through authorised clearing), mangroves, clearings and management infrastructure in forest areas. Does not include tree crops and plantations, nurseries, pasture on non-designated forest land. Provides for management of forest in accordance with management plan; exploitation permits. All cutting subject to authorisation. Sets out community rights of traditional use of state and private forests.
	<u>Colombia Law 388 of</u> <u>1997</u>	Subjects granting environmental licences to Land Management Plan.
	Colombia, Law 99 of 22 December 1993	Mandates that any activity which can seriously degrade renewable natural resources or the environment or introduce significant modifications to a landscape requires an environmental licence. Environmental licence can be subject to requirements in relation to prevention, mitigation, correction, compensation and management of the environmental effects of the authorised activity (art. 50). Requires an Environmental Impact Assessment for environmental licence – must include information about plans for prevention, mitigation, correction and compensation of impacts (art. 57).

Table 2: Examples of regulations on integrated land-use planning

2. Creating enabling conditions

A favourable enabling environment for FLR includes the presence of several ecological, market, policy, social and institutional conditions (Hanson, et al., 2015). Policy-enabling conditions manifest at different scales, focus on instruments as well as on governance aspects, and involve all relevant stakeholder groups (Chazdon and Guariguata, 2018). These groups include those with direct control of the land and resources, as well as those who control access and benefit-sharing, in addition to the government decision-makers and other actors who facilitate and catalyse FLR. Enabling conditions focused on these aspects include clear land and resource tenure, policy alignment to mainstream FLR and to halt forest loss, coordinated and effective institutional arrangements, legitimate and accountable decision-making, and fair and consistent implementation of norms and processes.

2.1. Rights and tenure

Unclear, insecure and conflicting rights to and tenure of land and natural resources are some of the primary reasons that FLR initiatives fail. When landowners and users are not confident that they will retain rights in the future, they are less likely to invest in restoration or sustainability (McLain, et al., 2018). In the context of FLR, it is common for multiple actors to hold different types of rights to the same land, and for customary rights to exist alongside rights provided by statute. If these different rights are not well aligned, or rights granted by law do not correspond to the de facto situation on the ground, FLR will be difficult or impossible to implement. The legal recognition and security of land and resource rights that align with existing practices and informal arrangements can significantly benefit landscape restoration efforts (Ethiopia case study). See Table 3 for additional examples.

	Relevant legal instrument(s)	Description
Rights and tenure	Ethiopia Constitution (1995)	Vests right to land ownership in state; right of farmers/pastoralists to obtain land access through certificates without payment.
	Ethiopia Land Use Proclamation (2005)	Sets out land registration/certification process, and rights related to land access and transfer. Requires highly degraded land to be closed from human/animal interference.
	Vietnam, Land Law 2013	Empowers state to allocate/lease land-use rights to organisations or individuals. Provides for community-based ownership of land and priority in allocation to communities with traditional customs associated with forests.
	Madagascar, Law 2005-019	Defines types of land and land transfer options.
	Madagascar, Law 96- 025	Provides framework for the transfer of management authority over forests to local community groups through management contract, including simplified management plans. Prohibits changing forest products categories from use rights to commercial transaction. Seems to recognise, via Provisions about Dina (art. 49–53), customary management, but different from customary Dina, which are not recognised in statutory law. Enables communities to sign management agreements if forests are part of protected areas.

Table	3:	Examples	of	regulations	on	land	tenure	and	rights
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2.2. Restrictions to maintain natural ecosystems that FLR supports

A key guiding principle of FLR is the maintenance and enhancement of natural ecosystems within landscapes. The prohibition of activities such as the cutting of natural forest, draining of mangroves and wetlands, conversion of vulnerable ecosystems, the introduction of invasive species or damaging biodiversity in protected areas can be effective, but only if there is in place sufficient enforcement and penalties to deter violators, and those negatively affected can access alternative sources of income and subsistence. Also, law reform should be enacted to eliminate property rights frameworks that combine ownership rights with rights to clear land and keep it under agricultural production (Chazdon, et al., 2017; McLain, Guariguata and Lawry, 2017).

2.3. Governance and institutional arrangements

Governance underpins the formulation of effective FLR solutions. These solutions are shaped by how different perspectives of the use of land and resources are mediated; whose views are prioritised and form a basis of decisions. Essentially, natural resource governance concerns the means by which structures and processes of decision-making shape power relations and the interaction between different stakeholders. Good governance should lead to effective and adaptive solutions for nature as well as to equitable, human rights-based solutions.

For FLR to be implemented effectively, it is necessary to ensure that good governance is generated from the bottom up, considering the interests of communities, local level authorities, private sector, etc. Communities can be involved in the management of public resources such as government-owned forests through contracts in which communities take on responsibility for some aspects of resource management or governance in exchange for rights to use and/or benefit from the resource sustainably. Alternatively, resource rights can be transferred directly to community associations to manage for the benefit of residents. Such arrangements can contribute significantly to FLR governance (Madagascar case study). In other cases, communities and indigenous people have collective rights over both land and resources in which their management rights, according to traditional practices, are recognised. See Table

4 for examples of existing regulations. Like other institutions, community governance authorities need the capacity and resources to operate effectively.

It is critical that FLR processes benefit from the integration and coordination of sectors and institutions involved in the implementation, as well as the broad participation of all interested groups and stakeholders (Imbach and Vidal, 2019). The challenge is to implement this in practice, which requires that resources are invested so that planning decisions are reached as a result of coordination and participation. It is this process of participatory decision-making that should set the standards for the implementation of FLR activities. One way to manage stakeholder relationships is to develop a planning framework and governance model of central coordination, regional visioning and local implementation (Lausche, 2019).

Governance of FLR involves the coordination of authorities at multiple levels operating across sectors. Ministries responsible for forests, agriculture, fresh water and protected areas, among others, at the national and subnational levels need to coordinate in planning, regulations and implementation. Specific coordination mechanisms, such as inter-ministerial committees and procedural requirements for consultation in land-use planning, are critical in this regard. FLR institutional coordination mechanisms (ICMs) are governance mechanisms that can address the challenges of implementing FLR initiatives which require a systemlevel, complexity-aware approach involving multiple stakeholder groups and sectors (Imbach and Vidal, 2019). Responsible authorities at all levels need sufficient resources and capacity to undertake their role. See Table 4 for examples of inter-ministerial coordination mechanisms.

Governance at any level, including community governance, can be undermined by corruption, favouritism and discrimination based on gender or ethnicity. Legal provisions for transparency, accountability, participation and access to justice are essential safeguards for good governance and the rule of law.

Table 4: Examples of legislation and policy instruments on governance arrangements

	Relevant legal instrument(s) and other policy docs	Description	
Governance	<u>Madagascar, Decree</u> 97-823 of 12 June 1997	Establishes Inter-Ministerial Environment Committee (CIME): coordination structure of ministers under the authority of the Prime Minister; ensures that policies/strategies adopted within each ministry consider sustainability.	
	Sustainability Agreement of the Yucatan Peninsula	Formally creates the coordination mechanism in the Yucatan Peninsula, Mexico, to harmonise policy implementation for the conservation and sustainable use of biodiversity, reduction in deforestation and ecosyste degradation, among other developmental priorities.	
	Ethiopia, Proclamation no. 1065/2018	Provides framework for community ownership and development of forest land; participatory forest management on state land.	
	Madagascar, Law 96- 025	Provides legal framework for local management of renewable natural resources (GELOSE) through the transfer of management authority to local community groups.	
	Nicaragua, Law 445 of 13 December 2002	Lays out the community property regime of indigenous peoples and ethnic communities of the autonomous regions of the Atlantic coast of Nicaragua.	

3. Mobilising resources for FLR implementation

Once the need for action has been motivated and the conditions enabled, the third crucial trigger point for the implementation of FLR is the availability of sufficient resources to put plans into action. Resources can include the capacity and knowledge of actors to kick-start restoration on the ground, government and other incentives to facilitate investment in restoration, and monitoring systems that allow continuous assessment of outcomes against project aims, which can inform necessary updates and help adapt implementation strategies. FLR-supportive policies can be instruments to materialise these resources by creating mandates, programmes and institutionalising activities for the long-term success of FLR.

3.1. Knowledge and capacities

non-monetary resources and technical knowledge, policies that establish public training programmes in which experts transfer knowledge to local communities, such as what to plant and where, what to protect, where to allow grazing, water management activities, etc. Once technical expertise has been delivered, follow-up services should be programmed to ensure that seminal restoration activities are successful (to monitor survival rate etc.). See Table 5 for examples.

Regulations and policies can set evidence-based standards for FLR or provide for agencies to develop such standards and disseminate them to relevant stakeholders. Laws and regulations can ensure the availability of technology and inputs by mandating the provision of seedlings and equipment to forest developers as part of an incentive package or creating tax breaks for purchase or import of such equipment. Policies can promote extension programmes, networks, partnerships, certification programmes, etc. In many cases, much of this expertise is already found in-country, but perhaps could be enhanced with specific training on FLR.

Since the successful implementation of FLR requires

	Relevant legal instrument(s)	Description
Resources and capacity	Ethiopia, Proclamation no. 1065/2018	Establishes government responsibility to provide technical support and extension services and provide plant seeds and tree seedlings to farming and pastoral communities.

Table 5: Examples of policy dispositions on technical support for FLR-supportive activities

3.2. Public incentives and financing

Sustainable funding is essential for FLR efforts to be scaled up beyond the local level. Projectbased funding can help initiate a programme but is not reliable in the long term. In most cases, it is necessary to allocate resources to FLR from state budgets to achieve meaningful, sustainable gains. For instance, as explained in the paragraphs below, environmental taxes such as carbon taxes, or payments collected from ecosystem service users under a payment for ecosystem services (PES) scheme, can make up some of the cost, although it is important that these revenues should be ringfenced for FLR.

FLR often requires upfront investment in capital and other resources. Depending upon who stands to benefit from restoration over time, additional incentives may be needed to facilitate FLR. Many policy approaches can work to provide public incentives for FLR, including tax credits, direct payments and special privileges for landowners and users engaging in good practices. These can increase engagement in restoration activities and sustainable landscape management.

Public incentives for restoration can be designed based on the economic quantification of the environmental and social benefits of FLR, in addition to the economic value of traditional goods and products from forests and agriculture (Ding, 2017). Public incentives for restoration need to target the current drivers of deforestation and degradation and create opportunities to counteract them, for instance:

- subsidies
- tax credits or refunds
- grants or direct payments
- payment for ecosystem services.

Specific policies that leverage public incentives or public finance for FLR could include the redirection of agricultural subsidies that lead to land clearing or illegal logging into productive and restorative transitions and tax credits or refunds to incentivise FLR investment on owned or managed land, or to increase investment across sustainable value chains. Policies that grant programmes or direct payments to landholders as incentives to implement restoration activities must be designed for the long term, given the inherently extended horizons of FLR processes. In the absence of long-term funds, smaller grants for planting trees or a few years of maintenance can be used to kick-start larger, more extended investments, such as sustainably managed plantations or sustainably certified agricultural operations within a broader restoration landscape context. Sustained FLR may require more permanent incentives such as property tax reductions for as long as the property meets requirements.

Payment for ecosystem services (PES) is one way to fund restoration and support local communities undergoing such a transition (Vietnam case study). PES can focus on one or more services such as carbon sequestration, water availability and guality, natural scenery, etc. In PES systems, a beneficiary of an ecosystem service, such as a user of clean water, makes a payment to the provider of that service, such as the manager of a watershed. FLRsupportive policies can help to negotiate voluntary contracts or mandatory payments between the parties. In the context of carbon sequestration, FLR can be financed as part of the implementation of REDD+,³ whereas a framework that creates legal certainty for investors and stakeholders can unlock revenue from carbon credits as an additional incentive for restoration.

Public incentives for FLR should be calibrated to landscape goals, considering the need to restore multiple ecosystems functions for multiple benefits. Incentives that focus exclusively on tree-planting can result in monocultures that may not deliver the desired ecosystem services and may not align with the FLR principles (Chazdon, et al., 2017). Instead, incentives should be tailored to landscape needs and circumstances and should be delivered alongside sufficient guidance, extension services and monitoring (Table 6). Incentives should be calculated at a level to compensate landowners and communities for the costs of restoration and the opportunity costs of forgoing other activities.

³ REDD+ stands for reducing emissions from deforestation and forest degradation in developing countries, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries

Table 6: Examples of government policy incentives that can support FLR activities

	Relevant legal instrument(s)	Description
	Ethiopia, Proclamation no. 1065/2018	Incentives for private forest developers and community forest developers including tax exemptions, access to loans, rights to benefit from carbon markets and ecosystem services.
	Vietnam, Law on Environmental Protection 2014	Fiscal incentives for organisations or individuals carrying out investment projects on environmental protection activities (art. 151).
	Vietnam, Decision no. 78/2014/QD-TTg of 26 December 2014	Organisations and individuals involved in projects related to environmental protection or climate change adaptation may apply for funds with preferential interest rates from Vietnam Environment Protection Fund (art. 2.2).
	Vietnam, Decree no. 119/2016/ND-CP of 23 August 2016	Organisations and individuals working to protect or regenerate coastal forests on a contract basis are entitled to fiscal support from the government – VND 4.000.000 for 5 years (art. 4, 5, 9).
mcentives	<u>Vietnam, Forestry Law</u> 2017	Payments for forest ecosystem services.
	Vietnam, Decree 156/2018/ND-CP	Payments for forest ecosystem services system.
	<u>Colombia, Estatuto</u> <u>Tributario, art. 253</u>	Certificate for forest incentives (CIF) programme.
	<u>Colombia, Law 139 of</u> <u>1994</u>	Certificate for forest incentives (CIF) programme.
	Colombia, Law 99 of 22 December 1993	Projects that use water resources and are subject to environmental licence must allocate 1% of the investment for recovery, conservation, preservation, monitoring of basin. Hydropower business must pay 3% of gross sales; thermal power plants 2.5%, for protection of environment or conservation of páramos.

3.3. Monitoring and evaluation

Adaptive management is critical in facilitating the success of FLR, for which it is necessary to ensure that regular evaluation of FLR initiatives is built into policy frameworks (Baker and Eckerberg, 2013). Periodic assessments are vital to measure progress and understand what is working and what needs to change. A national baseline inventory of forest

and landscape resources is an important starting point. Additional information can be sourced from EIA reports and local data. A monitoring framework should incorporate streamlined targets and indicators for the assessment of socio-economic and environmental impacts such as climate change mitigation, employment from FLR, biodiversity outcomes, food security, value-chain development, etc (Table 7). Positive impacts identified by evaluation that were not part of the initial strategies can be retrofitted to the project.

	Relevant legal instrument(s)	Description		
Monitoring and assessment	Malawi Planning document. FLR Monitoring Framework	Provides framework for monitoring progress on Malawi's national forest landscape restoration strategy.		
	Rwanda Forest Sector Strategic Plan 2018–2024	Includes component on monitoring results and includes actions to set up a national monitoring system, building local capacities for reporting.		
	Action Plan for the restoration of ecosystems and landscapes of El Salvador with an adaptation-based mitigation approach: 2018-2022	Includes component on monitoring results and includes actions to set up a national monitoring system, building local capacities for reporting.		
	US Omnibus Public Land Management Act of 2009	Restoration Programme and establishes monitoring obligations for projects implemented under the programme, indicating specific elements to be reported.		

Table 7: Examples of legal and planning instruments to set up monitoring systems for FLR

Conclusions

The case studies reflect different national situations which have resulted in a range of approaches and tools. However, each highlights the three key policy ingredients for FLR: motivation, enabling conditions and resourcing of implementation. They also reveal some policy-related challenges in advancing FLR and indicate workable policy solutions.

Aligning incentives, so everyone wins

Successful FLR policies consider the multiple ecological, social and economic interests and needs of a landscape. They recognise that achieving sustained benefits from FLR is not about the number of trees planted. Instead, FLR policies should incorporate a range of requirements and incentives calibrated to achieve landscape goals and create multiple benefits for all users. In Ethiopia, the new forest law created incentives to encourage investment in forest management and sustainable use, established tax exemptions for private and community forest developers for the first year of investment, as well as exemptions on importing tariffs to promote usage of technologies and tools in the sector.

Planning for FLR is a question of balancing the different interests and needs of resource users. It is not enough for an FLR initiative to generate more benefits overall – it is important to consider who benefits, and who bears the cost. The full benefits resulting from FLR initiatives may take a long time to materialise. Ethiopia's government incentives target the actors who will become agents in the implementation of FLR, including youth and women, communities and industry – benefits that include access to loans, land permits, seeds and seedlings, and promotion of private sector financing schemes for growers and investors in the sector that align with the law's objectives of expansion and conservation of forest and sustainable land management and restoration.

Policy incentives need to be sufficient to motivate relevant actors. In some cases, even small payments can result in changes in behaviour that support FLR. Not all incentives are monetary. Recognition of land tenure is itself an incentive which can motivate communities to participate in FLR. In turn, legal recognition of tenure can increase certainty and make it more likely that landholders will invest in their property.

Communities at the centre

FLR is most successful when local communities and smallholders are involved in the decision-making process for the design of FLR solutions. Local governance and informal arrangements can be more appropriate and powerful than national authorities and statutory mechanisms. Legislation should provide clear rights and responsibilities for authorities at the local level, without dictating how decisions should be made. Community associations created by statute may not adequately represent the community. Where they exist, it can be most effective to delegate authority to customary institutions. Local communities that are given real decision-making authority, including budget and allocation of benefits, demonstrate success in leading FLR. Respect for customary law, alongside formal legislation and governmental involvement, enables a holistic management of land that includes conservation and restoration activities, reducing deforestation. Policies should be designed to ensure access and the equitable benefit-sharing of economic and other positive outcomes of FLR in order to ensure that communities remain empowered and motivated to lead FLR processes in the long term.

Community engagement is not sufficient to ensure conservation. Local authorities and norms can be effective and appropriate within the local community but may not be adequate to regulate outsiders. There should be legal recourse for disadvantaged groups who may not be represented by local authorities, and government-backed enforcement of community decisions regarding the activities of outsiders. Resources and incentives should be provided to enable communities to undertake action aligned with FLR objectives.

Coordinating across sectors and stakeholders

Substantial coordination is needed for the successful implementation of FLR efforts. A national policy or plan can help lay the groundwork for coordination, particularly in the context of a specific ecosystem, such as mangroves. Special coordination committees or mechanisms can help, but only if they are given appropriate mandates and adequate funding. Coordination among agencies and stakeholders at the level required for successful FLR requires the regular investment of time and resources. Madagascar's National Committee for Integrated Management of Mangroves provides a good example of successful coordination, consisting as it does of representatives of relevant ministries, national and regional research centres, industries and

local communities. This committee facilitated political commitment and set out a plan to develop mangrove governance tools, coordination of interventions among stakeholders, and effective monitoring and evaluation.

Coordination is important at all levels. At the local level, customary and informal governance structures can conflict with formal local authorities from different agencies, as well as national frameworks. Jurisdictional disputes can obstruct appropriate benefit-sharing and allocation of resources for FLR. FLR-supportive policies should provide clarity on the roles and responsibilities of different institutions as well as mechanisms for agencies to work together.

Investing in the future

FLR is an investment. If successful, it is a good investment that generates a significant return for all involved, in the form of economic as well as environmental and social benefits. However, it often entails an upfront cost as well as a substantial recurring cost, which needs to be accounted for in subsequent government budgets over time. Vietnam's PFES scheme, launched in 2010, only became an important source of funding for restoration and conservation activities after a period of years. Although the number of beneficiaries is considerable, the payments received are arguably too small to compensate for the opportunity cost.

To ensure the investment in FLR is a success, it is important to plan for the long term. FLR initiatives should be reviewed every few years, ideally through a regular evaluation against a baseline that considers a range of ecosystem services. If appropriately nurtured and cared for, FLR can develop into an important and sustainable source of benefits. The successes of Vietnam's PFES scheme need to continue to improve and expand over time to compensate for additional ecosystem services such as carbon sequestration, in order to ensure a sustained, long-term and increased source of financing.

Case studies takeaways

The case studies in this report present examples of legal and policy instruments that have instrumentalised several aspects of FLR action. This section presents the takeaway learning points from each of the case studies, demonstrating how these instruments have positively impacted FLR in these countries.

Legal frameworks for compensation and offsetting in Colombia offer excellent examples of what FLRsupportive policies can deliver. They include clear definitions and timelines, andtimelines and combine fixed-rate payments with the option of case-by-case compensation plans. The implementation challenges demonstrate the importance of considering jurisdiction in determining who will manage and invest payments, creating standards for restoration efforts that go beyond the number of trees planted, and establishing requirements for involving local communities and monitoring and reporting on compensation investments. The compensation framework creates a basis for habitat-banking, which is a promising tool for private investment in FLR.

Formal and informal arrangements for private and community forest management in Ethiopia have demonstrated success in increasing forest cover and engaging communities. Recent legal reforms in the forest and land-use sector have the potential to strengthen tenure security and improve incentives for investment in FLR. Ethiopia's experience shows the value of a management plan and legal frameworks that recognise community rights and responsibilities for forest resources while respecting certain restrictions on burning, conversion and the introduction of harmful species. It demonstrates how FLR-supportive policies can encourage restoration by designating degraded land for forest development and transferring it to private actors or communities for restoration. The recent forest law is an example of how an FLR-supportive framework can create a range of incentives for private and community forest developmers.

Community management of natural resources in Madagascar provides important lessons for exponents of FLR. In this case study, community management processes were led by local communities through associations that adequately represented all users and equitably shared benefits, which was integral to the success of the landscape restoration initiatives. Madagascar's example shows that legal frameworks for community forest management should align with local governance norms and culture and take advantage of existing customary institutions, where they exist, rather than creating new associations. It is important to manage expectations and ensure that benefits are shared with those who bear costs. Where the legal framework for local management of renewable natural resources (GELOSE) has proved ground-breaking is in granting meaningful governance authority to local communities, rather than just rights to participate, so that local actors have real power to make decisions about the management of their landscapes. While international organisations and civil society are important allies, communities themselves should be leaders in the FLR process.

Vietnam's payment for forest ecosystem services (PFES) system has generated significant funds for activities that support FLR, while providing benefits to communities in forest landscapes. It has been successful because it is well tailored to the political and governance systems of Vietnam and creates clear and detailed requirements and processes for handling payments. The system grants communities discretion over how to use payments, and there is evidence that these funds have been invested in protecting and enhancing forest resources as well as raising standards of living. This is important because communities are often in the best position to understand the social, economic and ecological needs of the landscape. The experience of Vietnam demonstrates the importance of setting payments at the correct level to match users' willingness to pay, cover the costs of state agencies, and act as real incentives for communities and households. If Vietnam can apply the PFES provisions to similar efforts in the fields of aquaculture and carbon sequestration, this system could be a significant force for FLR.

Mangrove restoration and conservation demands that several policy, legislative and governance instruments and mechanism are combined to ensure success. Protection measures and restriction of use of these ecosystems is essential to avoid depletion. Equally important is the identification of the extent of these ecosystems, and that the use of wetlands in particular is planned in such a way as to ensure that a balance is mantained between competing uses, some of which could be detrimental to the mangrove's integrity. Empowering coastal communities with clear land tenure arrangements, as well as with knowledge and capacity to implement restoration activities that protect the sustainability of their livelihoods, is also key. Finally, coordination is essential as it brings in alignment actors and institutions to make decisions that balances sustainable development, conservation and restoration of mangrove ecosystems.

Case study 1: Legal requirements for FLR: Compensation and Offsetting in Colombia

Restoration targets and approaches

As part of the Bonn Challenge, Colombia has committed to the restoration of 1 million hectares by 2020. In 2015, Colombia adopted a National Restoration Plan, which outlines strategies and actions for achieving its restoration goals (Environment Ministry of Colombia, 2015). The plan prioritises degraded areas, involves local communities, and integrates restoration into local and regional planning processes, and has a strong focus on establishing and implementing compensation requirements and other measures to engage the private sector in restoration. Colombia's legal framework contains multiple mechanisms to incentivise and compel private action and financing for restoration, including requirements for compensation for environmental harm and contribution of a percentage of investment or revenue for conservation or restoration. They provide good lessons on legal frameworks for compensation as a mechanism for FLR.

Laws and institutions

In Colombia, any activity which could seriously degrade or modify the environment requires an environmental licence, which can be subject to requirements related to compensation for the environmental effects of the activity. The environmental licence is issued based on an environmental impact assessment (EIA) which must include a plan for avoidance, minimisation, restoration and compensation in relation to environmental impacts (Ley 99 de 1993, arts. 49–58). Compensation measures are defined as actions to repay or give back to communities, regions, localities and the natural environment to compensate for the negative impacts of a project which could not be avoided, restored or minimised (Decreto 1076 of 2015, art. 2.2.2.3.1.1). Project developers must submit a compensation plan to be approved by the competent authority and initiate compensation activities no later than six months after the impact occurs. The competent authority is responsible for monitoring the implementation of the compensation plan through follow-up at least once a year (Res 256 de 2018, arts. 3, 6).

Compensation measures should be designed in accordance with the principle of no net loss and following the mitigation hierarchy (avoid, mitigate, restore or rehabilitate and finally offset or, failing that, compensate). They can be realised through preservation, restoration and sustainable use in areas equivalent in size, ecological function, biodiversity and landscape context to the impacted area, and must demonstrate additionality. Restoration activities could include re-establishing a degraded ecosystem, rehabilitating an ecosystem to a point where it is self-sustainable, or supporting recuperation of valuable ecosystem services. Operators can implement compensation through conservation agreements, concessions, payment for ecosystem services arrangements, or acquisition of areas of strategic interest for the protected areas system.

Compensation requirements can be imposed and monitored at the national, regional or municipal level. The National Authority of Environmental Licenses was created to manage and administer environmental licences, including compensation requirements (Decreto 3573 of 2011). Compensation plans can also be approved by the Minister of Environment and Sustainable Development, or Regional Authorities. Where activities requiring compensation take place in urban areas, such as polluting leather-processing facilities around Bogota, urban authorities can also be responsible for imposing and monitoring compensation plans (Res 256 de 2018, art. 2). This raises questions about where compensation measures should be implemented, as it can be impractical to compensate for an urban activity in the urban area itself.

In addition to compensation requirements attached to EIAs, certain industries and projects are required to invest a percentage of their revenue or investment in conservation and restoration. All projects subject to environmental licence requirements that use water from natural sources must allocate 1% of their total investment to activities that support the restoration, preservation and conservation of the watershed (Ley 99 de 1993, art. 43). The 1% allocation can be used for sustainable use projects, payment for ecosystem services, habitat banks, acquisition of strategic ecosystems for the protected areas system, or development and implementation of a basin

management plan (Decree 2099 of 2016). Businesses generating hydroelectric energy must pay 3% of gross sales for conservation, while thermal power plants must pay 2.5%.

These payments go to regional environment authorities, who decide how the money should be spent. In 2018, the law was amended to provide that payments can also be allocated to National Parks or, in the case of payments for conservation of páramos, to the National Environment Fund (Ley 99 de 1993, art. 45, amended by Ley 1930 de 2018, art. 24.). In practice, these payments are normally received by regional environmental authorities, which can create problems in the case of transboundary watersheds, or watersheds that span more than one national park. Even where a protected area provides an important ecosystem service for the water user, the regional authority will normally invest the payment in activities within their jurisdiction instead of the protected area, which falls under the jurisdiction of National Parks.

Implementation and impact

Though challenges remain, there have been several examples of restoration projects in Colombia that came about as a result of compensation requirements or forced investment. The company ISAGEN has implemented a multi-part environmental management plan as part of a hydropower project on the Manso River. It reports planting 35,000 trees, establishing 37 hectares of protective plantations and acquiring an additional 445 hectares for ecological restoration. As part of the 1% investment programme, ISAGEN supported the development of biological connectivity between the Selva de Florencia National Park and the Manso River Civil Society Reserve (ISAGEN, 2019).

Certain aspects of the legal framework for offsetting creates challenges for implementation. Compensation projects must be implemented by the project developer, who is responsible for identifying sites for compensation, obtaining the land or contracting with individual landowners, and undertaking the technical aspects of the project. Compensation actions undertaken directly by developers who are not experienced in restoration projects can have disappointing results, and whilst consulting services are often involved, these come with high environmental and financial transaction costs. Project delays can cause additional costs, and it can take as long as a year after a development permit is awarded, and six months after impacts have occurred, for biodiversity offset plans to be presented to the environmental agencies. Government monitoring systems to oversee the implementation and effectiveness of compensation are weak.

For compensation projects that aim to restore forest habitat, there is often an undue focus on the number of trees planted, without a broader understanding of the restoration of ecological function. Most restoration projects to date are small scale, and almost all fail to involve local communities in project design. There is also a lack of systematic planning and prioritisation, and the scope of monitoring efforts is too short-term (Murcia, et al., 2016).

Many compensation projects are implemented through the involvement of NGOs. Fundación Natura Colombia is working on a project funded by Ecopetrol S.A. to restore 80 hectares of páramo and 25 hectares of regional forest, planting over 35,000 trees, in fulfilment of compensation obligations imposed by the regional environment department of Andina (Fundación Natura Colombia, no date, b). Fundación Natura Colombia is also involved in a conservation project for Equión Energy, to implement its 1% investment obligation. As of 2019, the project had resulted in 19 new conservation production agreements covering over 600,000 ha (Fundación Natura Colombia, no date, a).

Habitat-banking has emerged as a potentially powerful tool for leveraging investment in restoration and addressing some of the problems with the compensation system. Habitat banks are legally recognised as a mechanism for implementing both compensation requirements and forced investment (Resolution 1051 of 2017). Habitat banks are areas conserved or restored to generate biodiversity offsets which can be sold to companies as compensation. Because habitat banks are established and run by experts in ecological restoration and multiple companies can invest, they can be faster and more effective than ad hoc restoration projects led by companies. In 2016, Terrasos set up the first habitat bank in Colombia and Latin America in the Meta region, which was registered with the Environment Ministry in 2017. The bank was established with an investment of \$1.5 million from Terrasos and the International Development Bank, and is expected to generate significant biodiversity results over a period of 30 years.

Takeaways

Legal frameworks for compensation and offsetting in Colombia offer excellent examples of what FLR-supportive policies can deliver. They include clear definitions, timelines and combine fixed-rate payments with the option of case-by-case compensation plans. The implementation challenges demonstrate the importance of considering jurisdiction in determining who will manage and invest payments, creating standards for restoration efforts that go beyond the number of trees planted, and establishing requirements for involving local communities and monitoring and reporting on compensation investments. The compensation framework creates a basis for habitat-banking, which is a promising tool for private investment in FLR.

Case study 2: Rights and tenure, law mandates: Land Tenure and Sustainable Use Incentives in Ethiopia

Restoration targets and approaches

Ethiopia is often cited as a leader in FLR, due to its extensive commitments and demonstrable success in small-scale and community-led forest restoration projects. Under the Bonn Challenge, Ethiopia committed to restoring 15 million ha of degraded and deforested land by 2030. At the 2014 UN Climate Summit, it increased this pledge to 22 million ha (Climate Summit, 2014). Recent land and forest tenure reforms have helped shape a legal landscape that could be conducive to scaling up FLR in the country.

Laws and institutions

Under the Constitution of Ethiopia, all land and natural resources are owned by the state. However, private individuals and communities have rights to obtain and use land (Constitution, arts. 3–4). Any adult citizen who wants to engage in agriculture has a right to be given rural land free of charge. Holders of rural land have an obligation to use and protect the land and may lose their rights if the land becomes damaged or degraded as a result of their negligence. Highly degraded land should be closed to use to allow recovery (Proclamation 456/2005, arts. 5, 8, 9, 10, 13). Rural lands with a slope exceeding 60% are to be used only for the development of trees, perennial plants and forage (ibid., arts. 10,13).

Recognising the need to harmonise various processes and authorities involved in land-use planning, Ethiopia is developing a new land-use policy to promote optimal land use. The Draft Land Use Policy recognises deforestation and land degradation as serious threats to sustainable development. It provides for the development of a national integrated land-use plan, the creation of an independent institution to coordinate land administration, and the establishment of a system for monitoring, reporting and verification.

Historically, the definition and allocation of forest rights have been unclear, contributing to tenure insecurity and undermining restoration efforts (Cronkleton, et al., 2018; Alemayehu and Vidal, 2020). In 2018, a new law set up a national forest classification system that attempts to address some of the shortcomings of previous forest tenure regimes. The law recognises rights and responsibilities of private and community forest owners. It allows individuals, companies and communities to get title to land designated for forest development – often degraded land – which they can replant and manage to generate forest products and services, such as timber or carbon offsets (Proclamation 1065/2018, arts. 6–7, 9). This legal framework supports the traditional practice of exclosure, in which a community sets aside degraded land for either active or passive restoration (Kassa, et al., 2017). The 2018 law also allows for the transfer of state forests to local communities for development and utilisation following approved management plans (arts. 12–15, 19). Finally, it provides for participatory forest management (PFM) agreements through which a community takes on responsibility for protection and management of a state forest in exchange for rights to use and benefit from forest resources (art. 7).

Both private and public forests are subject to restrictions regarding the introduction of harmful species, expansion of farmland in designated forests, and the starting of forest fires is deemed illegal, punishable by fines or imprisonment. Cutting endangered, indigenous, naturally grown trees from state or community forests is also prohibited. Endangered trees planted by individuals or associations may be used by the forest owner with appropriate authorisation (ibid., art. 25). However, the list of endangered indigenous trees and the process for obtaining authorisation has not yet been legally determined (Alemayehu and Vidal, 2020).

The new forest law also creates incentives to encourage investment in forest management and sustainable use. Lease and tax obligations are waived for private forest developers for the first year of production, and for communities for the first two years. The law provides for technical support and extension services, plant seeds and tree seedlings, access to loans, and tax exemptions and subsidies for imported tools and technologies for forest development (Proclamation 1065/2018, arts. 5–7, 9–10, 18–19). The Draft Forest Regulation stipulates criteria for eligibility for forest loans and land access and provides for the creation of jobs for youth and women and the approval of forest management plans aligned with the Land Use Policy. Even outside demarcated forests, the government should supply farming and pastoral communities with plant seeds and seedlings of tree species with different economic benefits, to facilitate agroforestry (ibid., art. 18–19). A Draft Forest Seed Proclamation establishes quality standards for domestic and imported forest seeds.

In 2019, Ethiopia adopted the Bamboo Development Strategy and Action Plan to promote sustainable development of the bamboo industry, including through developing incentives for private investment, encouraging banks to provide concessional loans and special financing for growers and investors, and providing concessions for communities and the private sector to sustainably use existing bamboo resources (EFCCC, 2019).

Land and resource administration is governed by multiple authorities at national, regional and local levels. In the past, coordination between ministries responsible for agriculture and forestry sectors has been a challenge (Franks, et al., 2017). Currently, the Environment, Forest and Climate Change Commission oversees national forest management and is the competent authority for planting, reforestation and management activities. According to national rules, regional governments are responsible for enacting and implementing processes for land allocation, administration, titling and dispute resolution (Constitution, art. 52(2)(d)). Regions have adopted legislation similar to the new federal laws, in some cases with pre-dating provisions on recognition of community forests (Alemayehu and Vidal, 2020). Regions are extensively involved in the allocation and registration of land rights through a programme that has been characterised as one of the fastest and least expensive land titling programmes in Africa (Franks, et al., 2017).

At the local level, communities manage exclosures through the adoption of bylaws, which must be registered at the office of the responsible government organ (Proclamation 1065/2018, art. 8). Where community forestry projects are heavily influenced by international organisations or NGOs, bylaws for forest management can reflect more closely the priorities of international community or donors than community goals (Lemenih and Kassa, 2014).

Implementation and impact

Community exclosures in Ethiopia cover over 3 million hectares across multiple states (MEFCC, 2017). Some are set up for passive restoration, while others involve active planting of seedlings and development of conservation infrastructure. In 2013/2014, communities provided an estimated US\$10 billion worth of free labour for the restoration of degraded land (ibid.). In exchange, communities can share benefits generated from restoration. In the Humbo Forest Project, communities were able to harvest firewood and fodder from the project area, and eventually received payments for carbon offsets generated by the site. However, carbon payments did not appear until four years into the project, and the price of carbon was lower than expected (Alemayehu and Vidal, 2020).

Rural population growth and corresponding land requirements are difficult to reconcile with exclosure policies. In some regions, areas under exclosure have been removed from communal control and allocated to landless youth, according to regional constitutional requirements. This can create a strong disincentive for community exclosure (Lemenih and Kassa, 2014; Alemayehu and Vidal, 2020). The 2018 Forest Law provides important tenure security for

community exclosures by creating a means for community forest developers to gain a title. This does not necessarily protect exclosures from expropriation to meet agricultural needs, but it does provide for compensation should that occur, which may help to improve incentives for communities to participate.

Since the 1970s, private forest plantations have expanded to cover an estimated 972,000 ha, of which small-scale woodlots make up approximately 750,000 ha (Lemenih and Kassa, 2014). Most of these are monoculture plantations of exotic species, mainly Eucalyptus. Since it was prohibited to harvest wood from natural forests for commercial purposes, most small-scale forest developers avoided planting native species (Lemenih and Kassa, 2014). The new law may help by providing a means to obtain authorisation for the use of native species if these provisions are effectively implemented. However, in practice, native species are slower growing and less lucrative than exotic trees, and therefore unlikely to be a popular choice for production plantations.

The incentives provided in the law itself have yet to be realised. There is little awareness of the policy among forest developers, and private investment has been limited. At the district level there is a lack of guidance for implementing incentive provisions (Alemayehu and Vidal, 2020). However, even without subsidies and tax breaks, investment in woodlots can be a strong economic proposition. According to one calculation, woodlots in Ethiopia have the potential to generate a 22% rate of return on investment (Pistorius, Carodenuto and Wathum, 2017). Secure tenure and access to extension services will be important factors in stimulating private investment in reforestation.

Participatory forest management has resulted in mixed success. Since its inception in the mid-1990s, over 1.5 million hectares of forest in Ethiopia has been managed through PFM (Kassa, et al., 2017). Most PFM initiatives are led by international aid agencies or NGOs, and when projects end, management activities often decline as communities may lack the administrative and technical capacity to continue. In many areas, PFM arrangements replaced situations in which communities had de facto open access to forest land, because of lack of enforcement, and PFM agreements reduced community access to forest products (Kassa, et al., 2017). The 2018 forest law may help address this by providing means for communities to gain title to the forest land in which they invest.

Despite its challenges, PFM has contributed to the restoration and improved forest management in several areas. In Chilimo National Forest area, forest subject to PFM showed a 7% increase in forest cover between 2003 and 2012, attributed to restrictions on livestock grazing under the forest management agreement, increased income from forest products and decreased forest conflict (Cronkleton, et al., 2018). Studies have found that areas under PFM show increased forest cover, tree density, species diversity and seedling and sapling density (Takahashi and Todo, 2012; Ameha, Meilby and Feyisa, 2016; Duguma, et al., 2018). These results indicate the importance of involving communities in FLR.

Takeaways

Formal and informal arrangements for private and community forest management in Ethiopia have demonstrated success in increasing forest cover and engaging communities. Recent legal reforms in the forest and land-use sector have the potential to strengthen tenure security and improve incentives for investment in FLR. Ethiopia's experience shows the value of legal frameworks that recognise community rights and responsibilities for forest resources in the context of certain restrictions – e.g. on burning, converting and introduction of harmful species – and a management plan. It demonstrates how FLR-supportive policies can encourage restoration by designating degraded land for forest development and transferring it to private actors or communities for restoration. The recent forest law is an example of how an FLR supportive framework can create a range of incentives for private and community forest developers.

Case study 3: Rights and tenure, local governance: Community Forest Management in Madagascar

Restoration targets and approaches

Madagascar has committed to restoring 4 million ha under the Bonn Challenge. Its NDC includes a commitment to reduce emissions from LULUCF by 61MtCO2 by 2030 through the restoration of 55,000 ha of primary forest and mangrove (Republic of Madagascar, 2016). A primary mechanism for achieving these targets is community management of forest resources. Though imperfect in its integration with customary legal systems and engagement of all resource users, it provides an example of how transferring management authority to the local level can create incentives and opportunities for restoration within and outside protected areas.

Laws and institutions

In Madagascar, customary law and governance exist alongside formal legislation and government authorities. Traditional authorities and practices play an important role in administering use rights and settling disputes at the local level. Customary governance is based in meetings of fokonolona, or people of a lineage or village, who adopt a system of norms or dina. However, customary and formal legal systems are not always well aligned, creating uncertainty and tension.

In 1996, Madagascar adopted a legal framework for local management of renewable natural resources (GELOSE) through the transfer of management authority to local community groups, and five years later a specific framework was adopted for management transfers in the context of forests (Loi 96-025; Decret 2001-122). Under GELOSE, management contracts are signed between the state or local authority and an accredited base community (COBA). These contracts confer authority over access, conservation, exploitation and development of natural resources to the local community. In exchange, the community agrees to defined obligations to ensure sustainable use, which are confirmed in dina adopted by the COBA (art. 43). The dina provided for in the GELOSE law function as bylaws adopted by a community association and are not the same as dina adopted by fokonolona in the customary legal system (Thielsen, 2016). GELOSE dina become legally enforceable for members of the COBA once approved by the local statutory authority. They are not enforceable on outsiders (Loi 96-025, arts. 49-53). COBAs are entitled to benefits from the development of renewable resources and derived products in the form of fiscal incentives. These incentives are intended to encourage communities to seek accreditation to manage forests in their region (Loi 96-025, art. 54). They can also negotiate benefits from the sale of carbon credits.

COBAs are not equivalent to fokonolona and may not reflect customary governance structures or represent the full community. COBA and fokonolona operate alongside commune leaders or mayors, as well as protected area managers and local forest service departments. These various authorities may have overlapping and competing jurisdictions, which can lead to conflict (Ranjatson, et al., 2019).

At the national level, multiple government agencies are involved in forest landscape management, including the Ministry of the Environment, Ecology and Forest, Madagascar National Parks, the National Environment Office and the Ministry of Agriculture. The Inter-Ministerial Environment Committee (CIME) is a ministerial coordination mechanism under the authority of the Prime Minister that was established to ensure the sustainability of policies and strategies adopted within each ministry (Decree 97-823). The National Committee for Integrated Mangrove Management was established in 2015 to coordinate cross-ministerial action to manage mangrove forests (Decree 629/2015). These committees primarily operate at the strategic level.

Implementation and impact

Locally managed areas cover 30% of the natural forest of Madagascar (Desbureaux, 2016). Over 750 management contracts have been signed for more than 1.2 trillion ha of forest (Mansourian, et al., 2014). Often, communities are able to secure tenure over natural resources in their area by entering into these contracts. Locally managed forest landscapes normally consist of three zones: conservation zones in which no extraction is allowed; sustainable resource management zones reserved for local community use; and commercial zones managed for commercial production of natural resources. Within these zones, communities undertake activities related to protection as well as restoration (Mansourian, et al., 2014).

Management contracts are often arranged and supported by NGOs or other third party agencies (Mansourian, et al., 2014; Desbureaux, 2016). As a result, management contracts and GELOSE dina can be heavily influenced by NGO standards. If there is a lack of community ownership over contracts, they may be seen as subject to interpretation and subsidiary to more established norms. One study described how COBAs in the buffer zone of Tsimanampesotse National Park allowed community members to undertake unsustainable slash-and-burn clearing, in line with the customary practice of allowing access to land for agriculture (Thielsen, 2016).

Community forest management initiatives have sometimes generated lower than expected benefits for local communities. Benefits are not always shared equitably and may not flow to those who bear the greatest opportunity costs of forest conservation and restoration. For example, one REDD+ project in Madagascar generated monetary benefits paid directly to the COBA, which it used to cover costs for local patrolling, equipment and transportation to implement forest conservation. Few benefits went to community members who had lost their rights to engage in charcoal production or slash-and-burn agriculture in the area (Neudert, Ganzhorn and Wätzold, 2017).

Although not perfect, GELOSE has contributed to a reduction in deforestation. In the Fandriana-Marolambo Landscape, 35 COBAs have been granted authority to manage over 50,000 hectares. Communities identified restoration zones, which were integrated into communal development plans in the landscape. Community members also planted exotic species to respond to demand for fuelwood and construction timber and participated in sustainable cultivation of rice, fruit trees and beehives to provide alternative income. As a result of this project, deforestation rates decreased from up to 3.5% in the period 1990–2005 to less than 1% in the period 2006–2016 (Mansourian, 2018).

Across the country, deforestation rates are lower in areas where property rights are respected and community organisations better funded. Community managed areas established through top-down processes have sometimes resulted in negative environmental impact. In areas where communities are actively involved as leaders from the inception and design phase on, environmental impact is consistently positive (Desbureaux, 2016).

Takeaways

Community management of natural resources in Madagascar provides important lessons for exponents of FLR. In this case study, community management processes were led by local communities through associations that adequately represented all users and equitably shared benefits, which was integral to the success of the landscape restoration initiatives. Madagascar's example shows that legal frameworks for community forest management should align with local governance norms and culture and take advantage of existing customary institutions, where they exist, rather than creating new associations. It is important to manage expectations and ensure that benefits are shared with those who bear costs. Where the legal framework for local management of renewable natural resources (GELOSE) has proved ground-breaking is in granting meaningful governance authority to local communities, rather than just rights to participate, so that local actors have real power to make decisions about the management of their landscapes. While international organisations and civil society are important allies, communities themselves should be leaders in the FLR process.

Case study 4: Public incentives and financing: Payments for Forest Ecosystem Services in Vietnam

Restoration targets and approaches

Vietnam has committed to increasing its forest cover to 45% of its land area by 2030, the equivalent of over 16 million ha of forest (Decision 419/QD-TTg, 2017) (Viet Nam, 2016). This will be achieved through the development of a national REDD+ framework as well as measures to enhance forest governance, integrated land-use planning, and economic and financial enabling conditions. Vietnam's national system for payment for forest ecosystem services (PFES) provides a policy framework and potential funding mechanism for achieving its goals.

In its national commitments to address climate change and enhance biodiversity, Vietnam identifies mangroves as key habitats. It aims to increase the area of protected forest in coastal areas to 380,000 ha, which will involve planting 20,000–50,000 ha of mangrove (Vietnam NDC, 2015). PFES is recognised as one of the solutions for recovering and regenerating mangroves and other natural ecosystems (National Strategy on Environment Protection to 2020, with Visions to 2030, 2012).

Law and institutions

After piloting payments for ecosystem services in two provinces, Vietnam adopted a national system for PFES in 2010 (Biodiversity Law of 2008; Decree 99 of 2010). Users of forest ecosystem services, such as hydroelectric plants, water utilities, industrial water users, tourism operators, major greenhouse gas emitters and aquaculture operators, pay providers, including state or private forest owners and those contracted to protect or develop state-owned forests (Forest Law 2017, arts. 8, 63). Payments are not based on services provided but on the size of forest owned or managed. PFES applies to mangroves as sources of aquaculture resources and carbon sequestration, but to date this potential has not been fully realised, in part because of challenges related to tenure (Nguyen, 2019).

Payment amounts are set by the government. So far, rates have been set for hydropower (~US\$0.0015/kwh), water utilities (~US\$0.0022/m3), industrial water use (~US\$0.0021/m3), ecotourism (1% of total revenue), and aquaculture (1% of total revenue) (Decree 156/2018/ND-CP, art. 64). A national system for payment for carbon sequestration has not yet been developed, though pilot projects are underway (Pham, et al., 2018). Vietnam has proposed using its Emissions Reduction Programme with the Forest Carbon Partnership Facility to support the integration of REDD+ with the PFES framework (Ministry of Agriculture and Rural Development, 2018).

Providers of forest ecosystem services who receive PFES payments are obligated to protect and manage the forest area according to a management plan adopted by the competent state authority (Forest Law 2017, art. 65). Often, these management plans follow the basic forest law, which requires forest owners to regenerate, reforest and enrich natural forests, use forest resources sustainably, and address threats such as pests and fires (Duong and De Groot, 2020). Otherwise, providers may use the payments for raising their standard of living (Decree 156/2018/ ND-CP, art. 70).

Payments can be made through a direct contract between the user and the provider or through a forest protection and development fund (FPDF). In practice, most payments are channelled through FPDFs at central and provincial levels. Provincial FPDFs report to the central Vietnam Forest Protection and Development Fund (VNFF) (Ministry of Agriculture and Rural Development, 2016). The nascent capacity of FPDFs has created certain challenges in the first years of PFES implementation. In 2014, VNFF reported that only 81% of the payments collected in 2012 had been disbursed, because of high transaction costs and incomplete forest inventory (VNFF, 2014). Furthermore, FPDFs in provinces with lower PFES revenue struggle to cover their operating costs (Pham, et al., 2018).

Implementation and impact

Despite challenges, PFES has generated significant revenue for forest management in Vietnam. By some estimates, PFES payments currently amount to about US\$100 million/year (Ministry of Agriculture and Rural Development, 2016; Pham, et al., 2018; McElwee, Huber and Nguyen, 2020). In 2015, PFES revenue constituted 22% of overall investment in the forestry sector (Pham, et al., 2018). As of 2018, 31% of national parks and 6% of other protected areas received payments exceeding US\$430,000 each (Pham, et al., 2018). PFES supports forest management across 5.8 million hectares, over 40% of the total forest area of Vietnam. In 2014, VNFF reported that PFES had contributed to a 75% reduction in degraded forest area compared to 2008 (VNFF, 2014).

Almost all PFES revenue comes from the hydropower sector, with some from water utilities and tourism operators (Pham, et al., 2018; McElwee, Huber and Nguyen, 2020). Payments are made to FPDFs and passed on to consumers in their water and electric bills. Many companies are behind on payments and have not fully passed on the charges assessed on utility bills, resulting in an annual debt of approx. US\$2 million. The law provides sanctions for users that fail to implement PFES, but the penalties are not high and are not strictly enforced (Pham, et al., 2018).

PFES payments have benefited over 500,000 households, though the payment to each household is often small (To and Dressler, 2019). VNFF recognises that PFES payments may be too low to compensate for opportunity costs of preserving forest rather than clearing it for other uses, such as coffee or shrimp farming (VNFF, 2014). However, in areas with large forest cover and low population, PFES payments can represent up to 80% of annual household cash income (McElwee, Huber and Nguyen, 2020). A study in Quang Nam province found a significant difference in household incomes between those participating in PFES and other households over 10 years, as well as a significant reduction in income inequality (Nguyen and Hung, 2020). Unresolved questions over equity persist, as forest protection contracts are often awarded to households which have previously participated in government programmes, and newer forest owners and those with insecure land tenure may be unable to access payments (To and Dressler, 2019).

Recipients of PFES payments are obligated to manage forests in line with forest protection plans approved by the competent agency. However, these plans often do not go further than existing legal obligations, creating limited additional responsibilities for forest managers. Payments are not contingent on performance, reducing incentives to take action (Rizzeti, et al., 2018). Nonetheless, there is evidence that PFES has strengthened forest protection at the community level. A 2020 study of 21 villages in three provinces found that most villages set aside some budget from PFES payments for forest protection activities. Community members reported that forest patrol groups were more effective and competent, largely because of the available funding. Community-level control over PFES payments also allowed communities to reward individuals who contributed significantly to forest protection, and fine those who engaged in harmful activities, such as uncontrolled burning. The study also showed that the process of developing PFES contracts had helped clarify forest boundaries and improve tenure security (Duong and De Groot, 2020).

Takeaways

Vietnam's PFES system has generated significant funds for activities that support FLR, while providing benefits to communities in forest landscapes. It has been successful because it is well tailored to the political and governance systems of Vietnam and creates clear and detailed requirements and processes for handling payments. The system grants communities discretion over how to use payments, and there is evidence that these funds have been invested in protecting and enhancing forest resources as well as raising standards of living. This is important because communities are often in the best position to understand the social, economic and ecological needs of the landscape. The experience of Vietnam demonstrates the importance of setting payments at the correct level to match users' willingness to pay, cover the costs of state agencies, and act as real incentives for communities and households. If Vietnam can apply the PFES provisions to similar efforts in the fields of aquaculture and carbon sequestration, this system could be a significant force for FLR.

Case study 5: FLR-supportive policies in the context of mangrove ecosystems

Special considerations in mangrove ecosystems

Mangrove ecosystems are key components of many landscapes and provide vital and valuable ecosystem services. The policy tools and enabling conditions described in previous sections of the report also broadly apply in the mangrove context, but there are important considerations to bear in mind when implementing FLR in mangrove areas.

Mangroves exist at the intersection of land and sea, freshwater and coast. In addition to forest, agriculture, land-use and extractive sectors, mangrove FLR implicates aquaculture, fisheries and coastal planning. Even more than other types of forest, mangroves tend to be subject to multiple overlapping and often conflicting governance regimes. Forest regimes often focus on terrestrial forests, while marine and fisheries policies may ignore the special needs and threats that apply in coastal ecosystems.

National mangrove policy or plan

It can be helpful for countries to adopt a specific national policy or plan to coordinate action on mangrove management, conservation and restoration. The plan should set targets and indicators, specify how existing laws and policies apply to mangroves, and provide clarity on the roles and responsibilities of authorities at different levels. Where gaps exist, as is often the case, the plan will help to identify legal measures needed to address them. It should be evidencebased and developed through a holistic approach (Slobodian and Badoz, 2019).

The Kenyan 2017–2027 Mangrove Ecosystem Management Plan is a good example. It sets out programmes for restoration and conservation, as well as fisheries development, tourism development, community management, and research and education, and provides indicators of successful implementation of each programme. The plan describes the application of forest, fisheries, wildlife conservation, land-use and county-level planning regimes to mangrove ecosystems and confirms that proposed activities in mangrove ecosystems require an EIA. It describes the institutional structure applicable to mangroves and provides for a National Mangrove Management Committee and county-level management committees to provide technical guidance for implementation of the plan.

Integrating FLR for mangroves in sectoral regimes

The cross-sectoral nature of mangroves has implications for their treatment under various sectoral regimes. In many countries, mangroves are classified as wetlands, as well as forests, and subject to corresponding protections. Mangroves located on the coast can be subject to special environmental impact requirements or planning processes and should be included in frameworks for integrated coastal zone management. It is important to clearly define how these regimes apply to mangrove ecosystems and how procedural and substantive conflicts and overlaps will be managed.

Mangroves and tenure

The tenure regime applicable to mangroves can be different from forest tenure in the rest of the country. Mangroves are often publicly owned, either because of their location on the coast or owing to special legal classification. Local communities often depend on mangrove ecosystems and may have customary rights or traditional management practices; they frequently don't reside within the mangrove forest itself but may have semi-permanent camps for fishing or other use. Activities such as aquaculture are often conducted partly in line with legal concessions for such groups, but illegal encroachment is also common. When such operations are abandoned, they can leave behind unclear legal situations in relation to land tenure (property v. possession or even lack of title) that must be untangled before restoration can begin. Around the world, uncertain land tenure in mangrove ecosystems is the norm.

Public ownership of mangrove areas, as well as lack of clear tenure, can obstruct efforts that incentivise communities and the private sector to engage in FLR. For example, Costa Rica has a well-established PES framework that has helped incentivise sustainable forest management and restoration by private landowners, but because mangroves are in the public domain and cannot be owned, it does not apply. In these circumstances, it is possible to implement PES in mangroves by defining beneficiaries through legislation or a contractual arrangement. In Madagascar, locally managed marine areas can be established in mangrove ecosystems through a transfer of management authority to officially recognised fisheries groups, which can use the area for PES or carbon sequestration projects, and in exchange must carry out management activities, including systematic reforestation of mangroves (Rakotoson, Andriaharimalala and Rambinintsaotra, 2019).

Institutional coordination in mangrove FLR

Institutional coordination and capacity are essential for effective mangrove governance. The responsibilities of government agencies should be harmonised through inter-agency agreement or legal or policy reforms, as appropriate. It is important to consider authorities at different levels, from local to national and supranational. If possible, one agency should have overall leadership and oversight of mangrove ecosystems to avoid conflict in decision-making, with all subsidiary agencies fully aware of and compliant with their responsibilities and lines of communication. Responsibility for coordination can either be vested in a newly established special coordination body such as an inter-ministerial committee or cross-sectoral task force, or an existing body such as an overarching environmental management authority. For example, Madagascar has established a National Committee for Integrated Management of Mangroves, consisting of representatives of relevant ministries, national and regional research centres, industries and local communities. This committee facilitated political commitment and set out a plan to develop mangrove governance tools, coordination of interventions among stakeholders, and effective monitoring and evaluation (USAID, 2020). Such a mechanism will only be effective in the long term if it has sufficient authority and capacity to coordinate the various regimes and interests involved.

Takeaway messages

Mangrove restoration and conservation demands that several policy, legislative and governance instruments and mechanism are combined to ensure success. Protection measures and restriction of use of these ecosystems is essential to avoid depletion. Equally important is the identification of the extent of these ecosystems, and that the use of wetlands in particular is planned in such a way as to ensure that a balance is mantained between competing uses, some of which could be detrimental to the mangrove's integrity. Empowering coastal communities with clear land tenure arrangements, as well as with knowledge and capacity to implement restoration activities that protect the sustainability of their livelihoods, is also key. Finally, coordination is essential as it brings in alignment actors and institutions to make decisions that balances sustainable development, conservation and restoration of mangrove ecosystems.

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WORLD HEADQUARTERS Rue Mauverney 28 1196 Gland, Switzerland Tel: +41 22 999 0000 Fax: +41 22 999 0002 www.iucn.org

