



STRENGTHENING TENURE AND RESOURCE RIGHTS FOR LAND RESTORATION





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Key messages

This working paper describes the interconnections (the “nexus”) between land tenure and land restoration, and how secure tenure is needed to avoid, reduce or reverse land degradation. It draws on case studies in 12 countries, as well as the wider literature, to show the importance of tenure rights in restoration work. At the core of the suggested approach to restoration are concerns about how to better link tenure, land and ecosystem restoration, and land-governance approaches.

Key lessons from the case studies include the following.

- Healthy ecosystems are needed to produce products such as food and timber, and to obtain services such as clean air and water, pollination and protection from flooding. These depend on how the land is used, governed and people’s security of tenure.
- Tenure and land degradation and restoration are intimately connected with each other. Insecure tenure leads to land degradation. More secure forms of tenure encourage users to invest in protecting and restoring the productivity and ecosystem value of their land.
- Many forms of legitimate tenures exist, including informal, customary, unregistered and registered, and leases and ownership. Most of the developing world’s land is not formally registered; doing so would take hundreds of years. Alternatives are needed to strengthen tenure as it is key to enhancing restoration.
- Land-restoration initiatives may fail if they do not take tenure into account. Consider tenure when planning activities and policies to halt degradation and protect and restore land.
- Efforts to strengthen tenure and support restoration should include:
 - Creating a **vision** for both restoration and tenure.
 - **Diagnosing current tenure arrangements** with reference to land degradation and restoration.
 - Creating **tenure conditions** that encourage restoration.
 - Implementing **interventions** in tenure arrangements and for restoration.
 - **Monitoring** for impacts on the economy, society and ecology.

1. INTRODUCTION TO THE TENURE – RESTORATION NEXUS

Land rights refer to the legitimate claims that individuals and groups exercise in obtaining, possessing, and using land and natural resources.¹ Land rights are equated with tenure rights.² Tenure rights form the rules that specify who does what, with which land resources and assets, for how long, and under what conditions.³ Positively or negatively, the exercise of tenure rights influences the quality of land and the environment.⁴

Land degradation impacts the health and well-being of 3.2 billion people directly or indirectly.⁵ It lies at the core of countries' commitments to achieving "land degradation neutrality."⁶ This focuses on avoiding, reducing, and reversing the trends in land degradation (Box 1).⁷ Successful restoration depends on a range of enabling factors, including financial and human resources. Secure land and resource tenure are critical enabling factors in restoration.⁸

BOX 1 **Land degradation neutrality**

"A state whereby the amount and quality of land resources, necessary to support ecosystem functions and services and enhance food security, remains stable or increases within specified temporal and spatial scales and ecosystems."

Source: UNCCD⁹

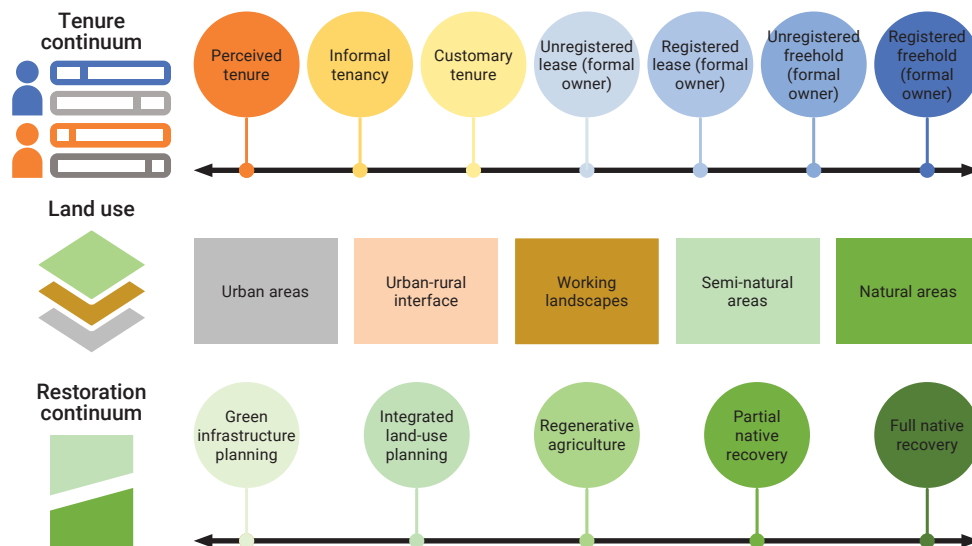
Restoration is about avoiding, reducing, and reversing the trends in land degradation to support ecosystem functions and services and enhance the living conditions of people in societies and the health of the environment they live in. Land restoration includes achieving land degradation neutrality and ecosystem conservation through sustainable land management. The term "restoration" is an umbrella term that includes sustainable land management activities.

Most tenures around the world are informal. Up to 6 billion tenures are held by people around the world, and 4 billion of them are informal.¹⁰

Dependence on formal tenures for tenure security — a precondition for restoration — is unrealistic. Most land degradation happens in Central and South America, sub-Saharan Africa, and Asia.¹¹ These are also the regions where land tenure is most insecure — which is why tenure security is a precondition for restoration.¹² Legitimate tenures¹³ in a continuum of land rights¹⁴ in addition to formal registered land ownership, are part of the link between tenure and restoration, and are necessary for land degradation neutrality. Informal and undocumented tenures need to be brought into formal governance arrangements (Figure 1) as part of restoration.

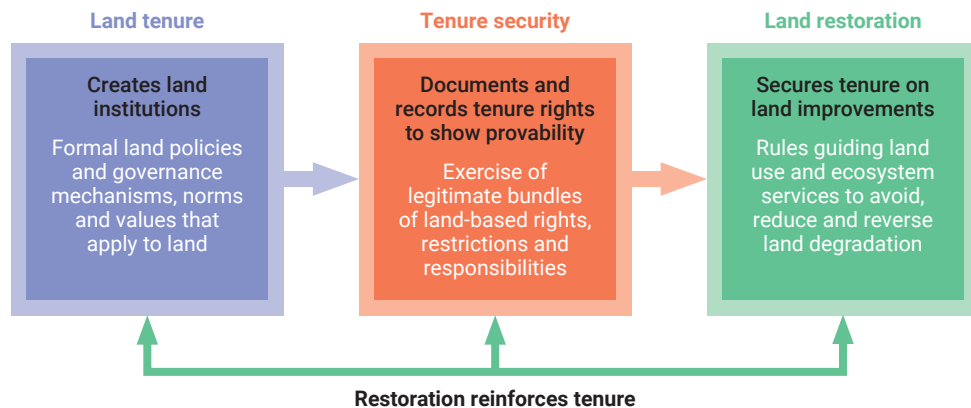
This working paper draws on 12 case studies to illustrate the connections between tenure and land degradation and restoration. The case studies were drawn from Cameroon, the Central African Republic (CAR), China, the Democratic Republic of Congo, Ghana, Guinea-Bissau, Honduras, Kenya, Myanmar, Pakistan, São Tomé and Príncipe, and Tanzania.

FIGURE 1
The land tenure – restoration nexus



Source: Adapted from Chigbu et al.¹⁵ and SER¹⁶

FIGURE 2
Land institutions create tenure rights which facilitate land restoration



1.1 The tenure – restoration nexus

Land tenure and land restoration are linked to one another, and actions in one area often affect the other – a set of interrelationships known as a **nexus**. Secure tenure, for example, creates enabling conditions for land restoration.¹⁷ Identifying the links between tenure and restoration and the specific roles of tenure in land restoration makes it easier to identify the relationship between tenure and restoration, and the specific roles of tenure in land restoration. Actions in tenure or in restoration often affect the other area.

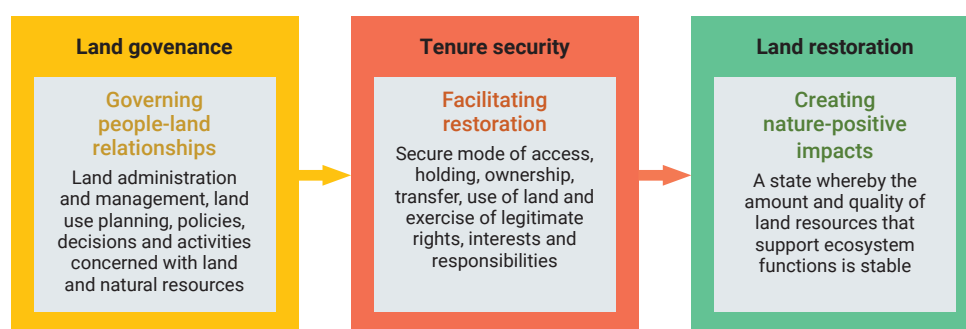
The relationship between land tenure and restoration (Figure 2) is demonstrated by emphasizing the linkages and feedback mechanisms in the social-ecological systems for delivering restoration solutions.

The tenure – restoration nexus frames how land institutions create tenure rights, some of which are documented. Security of tenure supports and maintains land restoration both in terms of the institutions or governance structures, and the emergence of new land rights.

The tenure–restoration nexus means that both tenure and restoration progressively operate in association with each other. Tenure, being the rules that determine land use, is part of all restoration activities at various scales. Restoration – the action plan put in place to avoid, reduce, and reverse land degradation – is exercisable as both a right and responsibility attached to the landholding.

Tenure has a complex relationship with land use and can lead to either land degradation or restoration. Whether tenure is positive or negative with regard to nature depends on the form the tenure takes and how it is used. For instance, agricultural practices can have both

FIGURE 3
Land governance, tenure security and land restoration



positive and negative effects on soil and water quality, depending on the restorative practices associated with them. Their effect also depends on cultural land-use preferences or access to markets or transportation infrastructure. For example, exercising outdoor recreation rights in the Appalachians helps drive the development of second homes (a new kind of tenure), but increases both land values and forest fragmentation.¹⁸ This again affects other recreational uses and their tenure and restoration options.

Figure 3 depicts how land governance facilitates tenure security to enable restoration works. Box 2 describes how new governance arrangements restricted the use of forests and boosted restoration in São Tomé and Príncipe.

BOX 2

São Tomé and Príncipe: Landscape restoration for ecosystem functionality and climate-change mitigation

Excessive exploitation was harming the islands' native forests. The demands for food, energy, and land were increasing and competing. This resulted in degradation of natural resources and ecosystems, reduce their resilience to climate change. Restoration activities became necessary to stop and reverse the degradation.

Tenure-restoration nexus. The government introduced new forest regulations and complementary capacity-development activities on sustainable land management. The regulations restricted access to, and use of forests. They imposed penalties and fines on those who violated the regulations.

Key lessons. Capacity building for monitoring and evaluation led to the implementation of a collaborative monitoring and evaluation system. Partnership agreements were signed between national actors on sharing lessons, and between communities on the best use of forest resources. The new tenure policy provided an enabling environment for restoration. It strengthened national capacity for tenure and restoration and the use of ecosystem services.

Source: Analysis of case studies.²¹

1.2 Land governance and the tenure – restoration nexus

The governance of tenure is a crucial element in determining if, and how, individuals, organizations and communities are able to acquire rights, and associated duties, to use and control natural resources. It is critical to tenure–restoration nexus practice because:¹⁹

- Tenure governance has linkages that stretch across all forms of access to, and management of land and other natural resources, such as minerals, water, and forest resources.
- It determines how people, communities and governments gain access to land. It also helps to define and regulate who uses which resources, for how long, and under what conditions.
- It frames and institutionalizes the exercise of land use-related legitimate rights, interests, and responsibilities.
- The implementation of restoration involves strategic decision-making that makes avoiding land degradation the highest priority, followed by reducing degradation, and finally, reversing past degradation. All of these involve land-governance²⁰ decisions.
- A major goal of tenure governance is to achieve restoration in ways that contribute to improving food security, healthy ecosystems, and human wellbeing.

TABLE 1
Case studies showing different tenure types

Case-study locations	Tenure continuum												
	Perceived tenure	Illegal occupation	Possession	Informal sub-occupation	Informal occupation	Formal occupation	Anti-eviction rights	Indigenous tenure	Customary tenure	Use rights	Group tenure	Project-based lease contracts	Statutory leasehold
Tenure governance	Informal						Formal						
Cameroon	●	●	●	●	●			●	●	●	●	●	●
Central African Republic	●	●	●	●	●			●	●	●	●	●	●
China										●	●	●	●
DR Congo	●	●	●	●	●		●	●	●	●	●	●	●
Ghana			●		●			●	●	●	●	●	●
Guinea-Bissau	●	●	●	●	●			●	●	●	●	●	●
Honduras	●	●	●	●	●			●	●	●	●	●	●
Kenya	●	●	●	●	●			●	●	●	●	●	●
Myanmar	●	●	●	●	●			●	●	●	●		
Pakistan	●	●	●	●	●			●	●	●	●	●	●
São Tomé and Príncipe	●	●	●	●	●			●	●	●	●	●	●
Tanzania	●	●	●	●	●			●	●	●	●	●	●

● = present

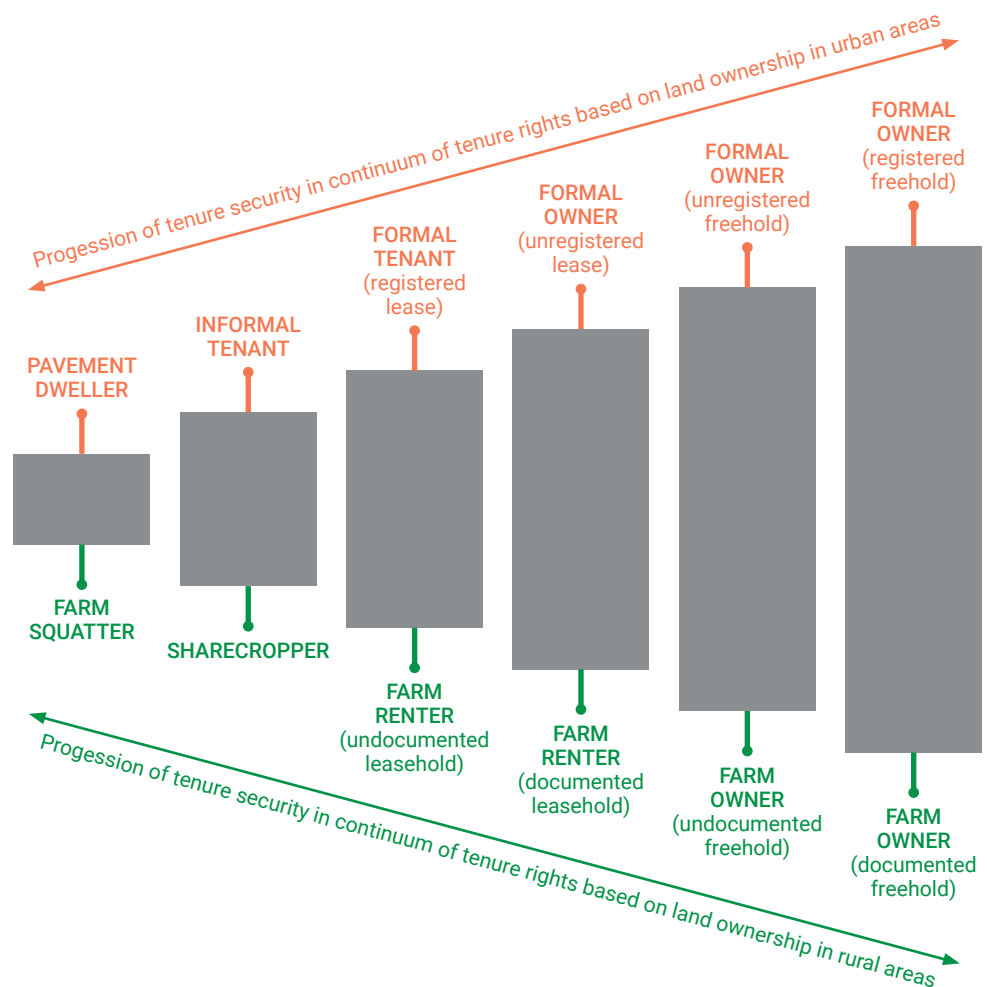
Using a tenure–restoration nexus approach makes it possible to mainstream tenure in restoration activities, so avoiding or reducing externalities that relate to tenure. These externalities may have negative impacts. Riparian restoration in the Sacramento River Conservation Area in California, for example, did not take tenure into account:²² the land restoration was ecologically, but not socially, compatible. This led to negative externalities being borne by neighboring landowners. Changes to land use intended to promote restoration may have negative effects on nature if they are badly managed. The acquisition of land for conservation may influence land prices in ways that encourage development and reduce ecological benefits.²³

Negative externalities related to land governance may affect restoration activities. Such negative impacts are rarely documented or measured.

The case studies reviewed for this paper show that wherever restoration activities are happening, it is crucial to take into account the national contexts of land governance in dealing with externalities and to strengthen land governance to ensure that tenure supports the restoration. Appropriate tenure arrangements and decisions should limit any negative effects that come from restoration. Tenure arrangements directly impact people's decisions on how they use the land both on and off the restoration site. External actors not involved in restoration can impede local restoration measures. Land-governance decisions or standards that promote restoration should be respected also by external actors.

FIGURE 4

Urban (top) and rural (bottom) continuum of tenure rights



The interface between tenure and restoration involves a continuum of activities and decisions, with feedback that may harmonize external and internal influences. It may be possible to deal with externalities in various ways:

- **Analyzing the interconnections between tenure and restoration.** A holistic analysis is necessary to identify how to harmonize the potential actions of people not directly involved in restoration and their possible influences on it.
- **Activism for land rights and land restoration.** This is necessary to ensure external actors respect actions and decisions to promote restoration.
- **National environmental policies and legislation.** The authorities need to ensure that restoration efforts are not scuttled by other activities or decisions by outsiders.
- **Sustaining the flow of ecosystem services.** This entails expanding rules that guide restoration activities across various sectors (including research) to ensure restoration efforts are respected by all.
- **Reconciling restoration and tenure concerns in development planning.** This will make land restoration respond to better ecosystem services delivery.²⁴

1.3 Tenure types, the continuum of land rights and restoration

The different types of tenure create different options and have different impacts on restoration. At the country level, tenure rights fall into five categories: statutory, customary/indigenous, public, religious, and informal (Table 2). The types include perceived tenure, illegal occupation, possession, informal occupation, and formal occupation,²⁵ anti-eviction rights, indigenous tenure, customary tenure, use rights, group rights, project-based contracts, statutory leases, and ownership (or freehold) (Table 1).²⁶ Nearly all these forms of tenure were found in the 12 cases reviewed for this paper.

Analyzing tenure rights in their order of progression from informal to formal, or insecurity to security, and along the continuum of land rights (Figure 4), is crucial to grasping how to distribute or secure rights, or to compensate occupants as part of restoration. The way tenure rights manifest on a land parcel determines how they are managed in relation to restoration.²⁷ Restoration projects should use a tenure – restoration nexus analysis approach to ensure that existing tenure

TABLE 2
Tenure challenges leading to degradation or impeding restoration

Case-study locations	Tenure challenges											Prevalent land tenure				
	Overlapping legal frameworks	Legal pluralism	Large-scale land acquisitions	Weak institutional framework	Gender inequality	Tenure insecurity	Land/natural resource conflicts	Lack of participation	Evictions	Weak conflict-resolution mechanisms	Corruption	Statutory	Customary/ indigenous	Public	Religious	Informal
Cameroon	●	●	●	●	●	●	●	■	●	●	●	●	●	●	■	●
Central African Republic	●	●	●	●	●	●	●	■	●	●	●	●	●	●	■	●
China	■			●	■	●	●	■		●	■			●	■	●
DR Congo	●	●	●	●	●	●	●	■	●	●	●	●	●	●	■	●
Ghana	●	●	●	●	●	●	●	■	●	●	●	●	●	●	■	●
Guinea-Bissau	●	●	●	●	●	●	●	■	●	●	●	●	●	●	■	●
Honduras	●	●	●	●	●	●	●	■	●	●	●	●	●	●	■	●
Kenya	●	■	●	●	●	●	●	■	●	●	●	●	●	●	■	●
Myanmar	●	●	●	●	●	●	●	■	●	●	●	●	●	●	●	●
Pakistan	●	●	●	●	●	●	●	■	●	●	●	●	■	●	●	●
São Tomé and Príncipe	●	●	●	●	●	●	●	■	●	●	●	●	●	●	■	●
Tanzania	●	■	●	●	●	●	●	■	●	●	●	●	●	●	■	●

● = present

arrangements are strengthened, rather than threatened, during restoration.

Table 1 indicates the range of tenure rights that may be found. Land rights are found along a continuum with formal rights at one end, where the owner is an individual who holds a set of registered rights to a land parcel, with the rights enshrined in law. At the other end of the continuum, there may be a group of individuals (such as a clan) with customary rights to land. The boundaries of the land may not be clearly marked, and there may be no official paperwork. Between these two extremes is a wide range of rights (Figure 4).²⁸

The cases show that it is necessary to tackle a range of tenure challenges in restoration efforts (Table 2).

The cases show that tenure challenges have both causal and co-relational linkages with restoration. For instance:

- In **Cameroon**, overlapping legal frameworks and legal pluralism lead to difficulties in following land laws.²⁹ This leads to conflicts over land and natural resource conflicts, and to the inappropriate use of land.
- In **Honduras** and **Kenya**, weak conflict-resolution mechanisms escalate large-scale land acquisitions, which cause tenure insecurity.^{30, 31}

- In all cases, tenure insecurity leads to inappropriate use of land, exacerbating food insecurity and water crises.³²

Indigenous people and their land are often vulnerable to tenure insecurity because their rights depend only on oral rules. Three land-related measures can be used to protect and restore common resources:

- Clearly defining common land resources and introducing effective community rules, including exclusionary rights for members of the common to exclude unentitled parties.³³
- Collective-choice arrangements that allow most resource actors to participate in the decision-making process.³⁴
- The introduction of a scale of sanctions for resource appropriators who violate community rules.³⁵

The case studies show that different land-tenure types face different types of challenges. These in turn affect efforts to restore the land. At the same

time the different tenure types present different opportunities for access to and use of land,³⁶ and for its restoration.

1.4 The bundle of rights and restoration

Tenure arrangements can be understood as a bundle of rights and responsibilities, and how the land is held, used, transferred, inherited and organized within societies³⁷ by governments, private citizens, groups, communities.³⁸ The bundle consists of a range of rights and interests (Box 3). Irrespective of the form the rights take, they are never standalone, but rather exist as a bundle (Figure 5). In many cases, several forms of tenure co-exist on the same piece of land. The rights and responsibilities in regard to land degradation and restoration are associated with this bundle.³⁹

The **Honduras** case shows that the creation of new forms of documented land rights can enable restoration (Box 4).

BOX 3

Bundle of tenure rights and interests that affect restoration

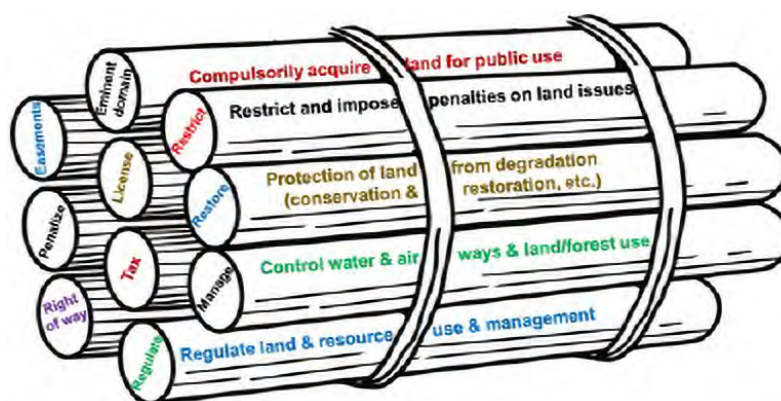
Access	Allow people, communities, and others to enter an area.
Duration	Measures the temporal permanence of allocated rights.
Exclusion	The ability to refuse another individual, group, or entity access to and use of a particular resource.
Adjudication	The right to be an arbiter in dispute settlement.
Management	Defined by the legal limits of other rights and usable to empower a community to articulate its rights to alienation or the exclusion of particular resources.
Alienation	The right to transfer one's rights to another entity.
Withdrawal	The right to benefit from products for subsistence or commercial purposes.
Enforcement	The right to implement restoration work.
Due process and compensation	The right to due process and compensation in cases of eminent domain.

Source: Analysis of case studies and adapted from FAO.⁴⁰

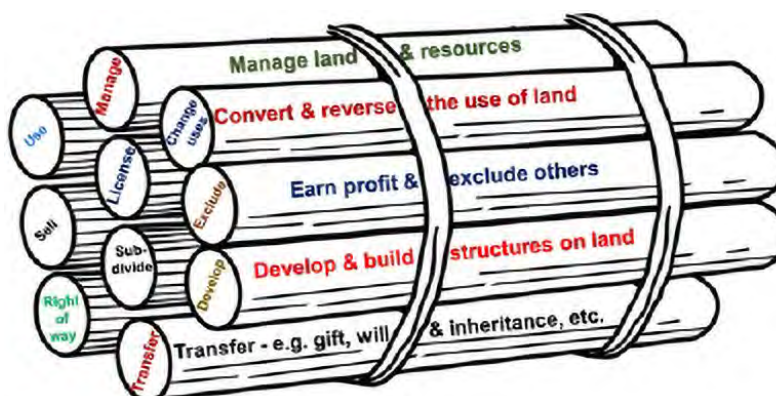
FIGURE 5

Bundles of tenure rights that may affect restoration

Typical bundle of rights that governments can have on land



Rights on land **evolve** depending on culture, practices and mechanisms for coping with challenges



Typical bundle of rights that individuals and groups can have on land

BOX 4

Honduras: Agroforestry landscapes for environmental and economic benefits

The documentation of existing bundles of tenure rights and the creation of new tenure requirements helped to support the legal establishment of biological corridors. Rewards or compensation (e.g., tax incentives) instead of penalty or fines motivated land users to engage in restorative activities. Extending management rights to citizens (using local boards or committees) incentivized engagement of people in restorative activities.

Over-dependence on the agricultural sector plays a pivotal role in the deforestation of fertile land in mountainous regions in Honduras.⁴¹ Restoration is necessary to reverse the fragmentation of forest ecosystems, biodiversity loss, and land degradation within the corridors. It is also necessary to strengthen the connectivity between protected areas and production landscapes to generate environmental, socioeconomic benefits in the dry-humid biological corridors.

Tenure-restoration nexus: Documenting existing bundles of rights helped to ensure the provability of those rights. Creating and documenting new land rights requirements supported the legal establishment of biological corridors helped to restore degraded land. Management plans for 15 protected areas and 62 sub-watersheds in the selected corridors were developed or updated. Watershed boards (including water associations) were established to manage sub-watersheds, with the full participation of indigenous organizations in decision-making. Municipal resolutions for tax-incentives (such as tax exemptions and deductions) were given to private owners and indigenous territories implementing sustainable practices.

Key learning: The initiative showed that a 20% reduction in forest fires and 70% reduction in firewood consumption and greenhouse gas emissions are possible through local actions and by using new forms of land rights for restoration targets.

Source: Analysis of case studies.⁴²

2. EVIDENCE FROM THE CASE STUDIES

2.1 How the tenure–restoration nexus works in practice

The literature and case studies show that:

- Secure tenure provides enabling conditions for the prevention of degradation and biodiversity loss. This helps restore degraded lands.⁴³
- Insecure tenure leads to a weak enabling environment for scaling up restoration.⁴⁴ The lack of tenure security ranges from lack of land titles, short-term tenancy contracts, a lack of transferability, to the risk of expropriation and illegal eviction.⁴⁵
- Secure land tenure does not necessarily require formal titling, but having a land registers helps.
- Enforcing customary (individual or collective) tenure rights helps to identify stakeholders to act against land degradation, or to receive compensation when land changes hands.⁴⁶ Other essential measures include tenure reforms, tax incentives, and payments for ecosystem services, participatory integrated land-use planning, farmer networks, and rural advisory services.⁴⁷
- Understanding the prevailing tenure and land use is essential in ascertaining the extent of degraded and marginal lands used for biomass production.

- Due to growing trends in land scarcity, tenure security is vital to clarify tenure rights and to promote investment in land improvement.⁴⁸

Land-tenure systems may help determine decisions about investments in restorative practices:⁴⁹

- In northern **Ethiopia**, increased tenure rights led to increased investments in land, and productivity increased by 40%.⁵⁰
- In **Malawi**, households with tenure insecurity (e.g., informal short-term tenancy contracts and customary gender-biased inheritance practices) are less likely to invest in soil conservation measures.⁵¹

Some of the most critical restoration practices are in dryland ecosystems.⁵² Table 3 draws on the cases to illustrate how tenure affects restoration practices in such areas.

Building capacity on tenure rights for forest restoration is an essential part of improving citizens' participation in restorative activities. Education on their tenure rights capacitates stakeholders, especially communities, to engage in restoration in a proactive manner. It also sensitizes them to become tenure conscious in their use and exercise of tenure rights. All of these contribute to restoration (Box 5).

FIGURE 6
Elements that create opportunities for the tenure – restoration nexus to work in practice

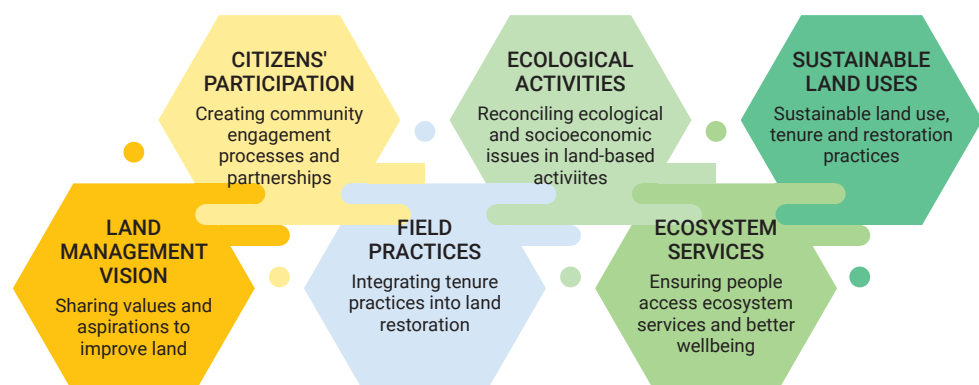


TABLE 3
Effect of tenure on restoration practices in drylands

Restoration practices	Role of tenure	Impact on desertification	Restorative impact
Integrated crop-soil-water management	Kenya. Establishing water committees or associations led to more organized participation to improve tenure and reduce water scarcity. Participatory enumeration of tenure in grazing areas was followed by mapping and recording water points. New rules were set for crop growers and water users to combat encroachment and land grabbing. ⁵³	Measures included introducing drought-resilient, ecologically appropriate plants, reducing tillage, applying organic compost and fertilizer, adopting different forms of irrigation, and maintaining vegetation and mulch cover.	Agricultural resilience from improved soils, crop varieties, and water quality, increases people's adaptation capacity. Mitigation benefits through avoiding, reducing, and reversing the loss of soil organic carbon.
Combating sand and dust storms by stabilizing sand dunes	China. Setting out new areas to erect protective structures against sandstorms requires new tenure or land-use. ⁵⁴ New tenures emerged due to the allocation of land rights within these new areas, as well as new responsibilities for erecting protective structures. Decisions concerning the structures lead to new land uses.	Climatic and ecologically adapted woody perennials, when planted, grow to stabilize sand dunes, including pasture species for grazing.	Revegetation sequesters CO ₂ on previously moving sand dunes.
Clearance of bush encroachment	Central African Republic. A restoration plan led to identifying tenure rights and the implications of the plan on people's land rights and livelihood options. This allowed herders to make informed decisions to avoid overgrazing and forest/grassland fires and to reduce their impacts. ⁵⁵	Improved species diversity, rangeland productivity and water provision; decreased desertification.	Increased resilience of the socio-ecological system, including people's adaptation capacity.
Use of halophytes to re-vegetate saline lands	China. Changing from non-saline crops to halophyte agriculture, planting windbreaks and minimum tillage are approaches to rehabilitating saline land and protecting against desertification. When supported by new tenure rules and decisions to plant drought-tolerant trees and crops, these measures protect landowners from loss of or infringement on use rights. ⁵⁶	Halophytes survive in saline soils that limit productivity of other crops. The biomass can be used as forage, food, feed, essential oils, biofuel, timber, or fuelwood.	Enhancement of terrestrial carbon stocks as land is re-vegetated.

Source: Adapted from IPCC (based on the role of tenure derived from case studies)⁵⁷

The case studies and literature reveal various elements that create opportunities for promoting both secure tenure and land restoration (Figure 6). These include:

- A **land-management vision** allows for shared or agreed management objectives. These encompass multiple benefits (full range of goods and services needed) from the use of land and natural resources. It is an opportunity to promote land use and tenure decisions that support restoration.⁵⁹
- **Citizens' participation** enables collaborative, community-engaged processes for dialoguing, negotiating and monitoring tenure decisions put in place for restoration.⁶⁰
- **Field practices** include on-site and off-site land use and farm and forest practices. Objectives include human wellbeing, food and fiber production, climate change mitigation, the conservation of biodiversity, and ecosystem services.⁶¹
- **Ecological activities** provide the opportunity to ensure legitimate tenure rights against threats and infringement when implementing local land-use practices, policies and investments in restoration.⁶²
- The delivery of **ecosystem services** motivates ecological and socioeconomic interactions among different people with interest on land. It allows for realizing synergies among landholders to mitigate negative trade-offs.⁶³
- **Sustainable land use** has a feedback effect because it enables the delivery of ecosystem services, which encourages more activities leading to better field practices and participation. These in turn lead to renewed visions for restoration.⁶⁴

BOX 5

Pakistan: Building restorative knowledge capacity for forest restoration

In Pakistan, knowledge building for forest restoration focused on improving citizens' participation in restoration activities. The development and use of GIS-based monitoring systems and tenure knowledge products served as important tools for sensitizing people about the need for restoration.

Sustainable forest management in Pakistan suffers from lack of clarified land tenure. A lack of education and awareness on land rights among local people encouraged deforestation and neglect of appropriate forest practices. This impedes the creation of benefit-sharing mechanisms for the payment of ecosystem services.

Tenure-restoration nexus. GIS was used to map and digitize data on land uses, land ownerships, timber compartments, and the drainage network in the forest. The use of GIS-based monitoring and evaluation systems became a visual information system for restorative decisions, especially in ensuring that tenure rules are respected. The GIS-based information systems were used to develop communication and awareness-raising products to improve tenure rights knowledge of beneficiaries.

Key learning. GIS enabled the integration of land-use and locational information that are usually difficult to access for restorative decision making, such as areas mostly associated with deforestation and types of activities leading to deforestation. The GIS system provided evidence-based data that improved communication between the government, funding partners, and local beneficiaries. New knowledge management products, including handbooks, factsheets, newsletters, policy briefs, videos, documentary and story-telling products, raised the stakeholders' awareness.

Source: Analysis of case studies.⁵⁸

2.2 Scaling up tenure for restoration

Specific tenure and restoration measures in the 12 country cases are examined below and in Table 4. The key questions answered by the case studies presented are:

- What key tenure instruments supported restoration in these countries?
- What tenure barriers did they seek to overcome?
- What are the key land governance issues for restoration?

Cameroon⁶⁵

Between 1990 and 2010, Cameroon lost approximately 4.4 million ha (i.e., 20% of the forest area) mainly due to unsustainable exploitation and insecure tenure rights. The state owns most lands and forests in the country. This poses a major hindrance because it discourages investment in restoration as land users neither own nor fully manage the land. This problem was averted in the case-study area as land-users' rights were recognized by the government. The recognized rights included the right of land users to limit encroachments; responsibilities included promoting the afforestation of degraded lands using indigenous plants.

Central African Republic⁶⁶

A land-use planning scheme that integrated tenure rights was a major instrument for promoting restoration in the Central African Republic. The scheme was conducted with the participation of local populations as part of forest landscape-restoration activities. It built the capacities of local people on landscape restoration. A focus was put on allocating land for alternative sources of income to ease the pressure on already degraded land resources. This incentivized communities to contribute to restoration efforts on degraded land.

China⁷⁰

China's State Forest Farm programme is used to monitor land use and land cover data on forest condition and ecosystem services (including biodiversity) and local socioeconomic conditions. Land ownership remains vested in the state, discouraging restoration efforts. However, through several processes of de-collectivization and reallocation of lands to households and private landholders (including long-term leases of up to 70 years) users are motivated to commit to restoration.

TABLE 4**Tenure-restoration nexus in case studies**^{67, 68, 69}

Case study	Objective	Domain and scale	Restoration method	Tenure context	Tenure-restoration nexus measure
Cameroon	Identify high priority land/forest areas for socioeconomic wellbeing of communities	Transboundary ecosystem-based	Restoration Opportunity Assessment Methodology (ROAM)	State owns most lands and forests in Cameroon. This is a barrier of investments in restoration.	Tenure security of local people was strengthened, and they were given additional land. This led to their support for the restoration of degraded lands using indigenous plants and local knowledge capacities.
Central African Republic	Restore forest landscapes	Comprehensive (urban and rural)	Land planning scheme	Unsustainable practices (e.g., slash-and-burn agriculture, bushfires for bushmeat hunting, etc.) are the main cause of degradation.	Under the land planning scheme, customary tenure is based on restorative tenure rules and penalizes unsustainable practices.
China	Improve ecosystem services	Rural (provincial)	State forest farm scheme	Land ownership is vested in the state. De-collectivization and reallocation to households and private holders is occurring.	Implementation of annual forest management and restoration plans, including leases of up to 70 years for household land and allocated forest plots.
DR Congo	Restore forests	Comprehensive (urban, rural and indigenous peoples)	ROAM	Communities have limited access to land. Land contracts are mainly short-term. Forest-dweller groups have no statutory claim to land.	Workshops and land-rights capacity development to promote forest restoration; advocacy to recognize and expand indigenous land rights.
Ghana	Restore degraded forest reserves	Comprehensive (urban and rural)	Public-private partnership	Charcoal making and cyclical slash-and-burn drive deforestation.	Farmland made available, written intercropping agreements (with defined tenures) for landholders.
Guinea-Bissau	Restore mangroves	Comprehensive (urban and rural)	Ecological rehabilitation	Geo-referencing forest restoration databased and using the new data for restoration plans and tenure decisions.	Rehabilitation of rice fields; harvesting practices.
Honduras	Generate environmental and economic benefits	Comprehensive (ecosystem-based)	Agroforestry landscapes and sustainable forest management	Agriculture is a significant driver of deforestation and degradation of fertile land.	Documentation of new tenures. Consolidation of land areas, participation and gender mainstreaming.
Kenya	Restore degraded landscapes	Transboundary ecosystem-based	Integrated natural resource management	Agriculture expansion and overgrazing, leading to the alteration and degradation of ecosystems.	New landscape-restoration plans embrace multi-use practices with new tenure regulations.
Myanmar	Enhance biodiversity conservation and reduce greenhouse gas emissions	Rural (regional)	Sustainable forest management	Tenure insecurity due to conflicts. Occupation and forest exploitation due to evictions.	Sub-national level land-use plan with new rules of tenure used as part of the restoration instrument.

TABLE 4
Tenure-restoration nexus in case studies (*continued*)

Case study	Objective	Domain and scale	Restoration method	Tenure context	Tenure-restoration nexus measure
Pakistan	Strengthen the regulatory and policy environment	Comprehensive (ecosystem-based)	Sustainable forest management	Degradation is due to a lack of clear land tenures and land governance. This impedes forest-based benefits sharing for payment of ecosystem services.	Implementation of restoration and value chain development at the community level. Restrictions imposed on land grabbing. Monitoring responsibilities are given to communities.
São Tomé and Príncipe	Restore ecosystem	Comprehensive (ecosystem-based)	Sustainable forest management	Land allocation under 1991 law does not guarantee investments. Beneficiaries exploit lands previously administered by state through agents.	New forest regulations restrict access and use to forests in ways harmful to the environment. Forest-use partnership agreements signed between communities and the government on the best use of resources.
Tanzania	Develop policy and institutional frameworks to reduce landscape degradation	Comprehensive (urban and rural)	Sustainable landscape restoration plans	Land ownership is based on land management responsibility and decentralized from the state level to village level. Degradation occurs in agro-ecological zones.	Creating an in-country enabling environment for restoration efforts. Focus is on capacitating land users and holders with knowledge of land rights.

Democratic Republic of Congo⁷¹

Until recently, the law in DR Congo did not allow local communities to own land. Land belongs to the state, but in practice it generally belongs to the chiefs and is accessible only to wealthy community members. Many local communities have limited access to land. Land contracts or agreements are usually issued to them on the short-term, often with unclear conditions. This situation affected the country's indigenous people, the Pygmy groups, who have no rights to claim land. Workshops were held to improve the knowledge of relevant stakeholders of their tenure rights so as to promote forest restoration. The training on best restoration practices and planning methods raise the awareness of the Pygmy groups and other local communities. They are now more aware of their land rights under prevailing circumstances while campaigning for more access to land, promoting restoration, and recognizing the value of natural resources.

Ghana⁷²

The problem in Ghana was that community members did not respect statutory rules concerning forest reserves. They encroached on the reserves,

and this led to degradation. It was possible to rehabilitate land by accommodating existing farming in the area. This involved tenure rights contracts and intercropping agreements. Farmers are permitted to grow food crops in between the tree seedlings in young plantations. After a couple of years, as the trees grow, they are offered new plantation areas for intercropping. Part of the farming has been relocated outside the forest reserve to promote intensification and more secure tenure there.

Guinea-Bissau⁷³

Mangroves cover a significant part of the Bissau-Guinean coastline, providing valuable services to local people. However, these ecosystems are at risk. During the independence war, land was abandoned, leading to degradation of the mangroves. Efforts to restore the area have focused on an improved strategic and regulatory framework. Guinea-Bissau had to relax its strict definition of what is state or public land, and instead the government had to agree to a form of common responsibility of state land together with the communities using the land. This made it possible for better land-use decisions to be implemented leading to restoration.

Honduras⁷⁴

Over-reliance on agriculture is a major driver of degradation in Honduras. Farmers cause deforestation of fertile land (including protected areas), especially in the country's mountainous regions, in search of food security. To improve the situation, the authorities and the communities had to agree on a change of tenure rules to enable restoration works. The new rules provided new tenure requirements in support of the legal establishment of biological corridors. They also updated management plans, or created new plans, to reflect the new tenure rules and create new protected areas.

Kenya⁷⁵

Deforestation in the Tana Delta of Kenya (a global biodiversity hotspot) is mainly due to agriculture expansion and overgrazing. Other problems include conflict between people and wildlife, high poverty levels, weak legal and institutional frameworks, and multiple and competing policies, institutions, and legislation. The project combined institutional frameworks and concrete actions: improving the enabling environment for restoration by supporting local governments and communities to develop and implement land use plans, building capacities, and enhancing stakeholder knowledge on restoration. These processes increased local government commitment to landscape restoration. This in turn led to improved landscape management through the implementation of restoration plans and integrated management practices.

Myanmar⁷⁶

Over the past decade, forests in Myanmar have been heavily over-extracted for timber converted to both commercial and semi-subsistence agriculture. The lack of recognition of land tenure leads to evictions and degradation. The restoration approach involved improving sustainability of forest landscapes, while enhancing livelihoods for biodiversity conservation. As the focus was on restoring ecosystem functionality (habitat and ecological processes), conflict-resolution mechanisms and community empowerment were pivotal to achieving results. Capacity development of land-governance institutions helped in the implementation of the restoration.

Pakistan⁷⁷

Poor management and climate change mean that deforestation and degradation rates in Pakistan are high. Restoration efforts suffer from a lack of clear land tenure and land governance, impeding the creation of forest-based benefit-sharing mechanisms that can benefit from payments for ecosystem services. The poor implementation of restoration regulations, particularly in the Chilgoza forests, was a key impediment to restoration.

The approach focused on strengthening the regulatory and policy environment for integrated and sustainable management of the Chilgoza forest ecosystem. It implemented forest restoration and value chain development at the community level, besides strengthening local institutions for integrated and sustainable management.

São Tomé and Príncipe⁷⁸

The Land Law of 1991 stipulates that cultivated land may be allocated only under a concession contract, and confers inferior rights to the private sector. This makes government land allocation unable to provide the necessary guarantees for investments in restoration. A renewed approach to restoration allowed for a conducive policy framework. This focused on sustainable management of forests and strengthening national capacity on the principles and practices of restoration.

Tanzania⁷⁹

About 50% of the total land area in Tanzania is degraded. This is mainly because all land in Tanzania is considered public, and the government retains significant power to reclassify and expropriate it. This creates perceptions of tenure insecurity at the village level. Restoration efforts focused on an enhanced enabling environment for restoration efforts. Approaches used involved strengthening the capacities of national institutions in restoration programs.

2.3 Tenure types and bundles of rights

Different types of tenures are associated with a bundle of rights, including those associated with restoration. Sometimes the tenure type supports restoration; sometimes it can be a barrier. This section shows the effect of specific tenures, and how they, and the rights they are associated with, play a crucial role in the restoration process.

Public tenure

Public tenure is a right which governments exercise (through land management authorities) as part of their sovereign right or responsibility. In all 12 countries, the public ownership of land is the legal right and responsibility of the government.^{80, 81, 82, 83, 84} Under public tenure, citizens have access to land through leases and various forms of renting. Governments may award forest and mining leases, licenses, or concessions to companies. These companies sign agreements to engage in landscape restoration as a matter of legal obligation or responsibility. Countries allocating rights on public land to citizens for restoration purposes include Ghana, Honduras, and São Tomé and Príncipe.

In **Ghana**, encroacher farmers in forest reserves were allocated 5-year intercropping guarantee contracts upon their acceptance to move to a replacement land in the host community.⁸⁵ The farmers are also assigned a co-sharing right to the environmental (e.g., use of water) and social (e.g., collaboration with other local farmers) benefits from restoration.

In **Honduras**, municipal resolutions allow for tax-incentive schemes (including tax exemptions and deductions) to private owners who conduct sustainable land management practices that encourage restoration.⁸⁶ This sort of incentive or privilege also applies to land being restored in indigenous territories.

In **São Tomé and Príncipe**, the government (through the 1991 Land Law) allocated cultivated land within reserves to private-sector operators under concession contracts that confer use rights (lease) for agroforestry plantations.⁸⁷ These practices provide the evidence that the allocation of tenure rights come with responsibilities. Well-managed concessions promote land restoration.

Statutory tenure

Statutory tenure is a right which is legally available to all citizens and the government in the use of land and natural resources. Statutory ownership of land occurs in perpetuity (freehold or ownership) or for a specified period (leasehold).

In **Cameroon** and **Myanmar**, the state owns most land and forests. Land is not owned or leased by individual occupants.⁸⁸ This structure of ownership is a barrier to restoration investments in these two countries. Women, young people and indigenous people experience tenure insecurity as they do not own or fully manage the lands that they use, or restore.

Customary or indigenous tenure

Customary or indigenous tenure rights mean that rights and ownerships are vested in the tribe, group, or community.

In **Tanzania**,⁸⁹ communities are engaged in land-use decisions. While restoring village land (i.e., land held and administered collectively by village residents under customary law), villagers participated in the monitoring the implementation of sustainable landscape restoration plans. This process created a new land right exercisable only by the villagers (i.e., the right to monitor their community land interests). Other forms of rights that emerged included the right to negotiate with local authorities over how to manage their land.

In **Honduras**, indigenous communities were made a priority (by way of statutory land-use decision) for restoration due to their conditions of poverty and vulnerability to food insecurity.⁹⁰ This decision resulted in more responsible use of indigenous peoples' land.

In both **Tanzania** and **Honduras**, the local people negotiated new responsibilities with the commitment to use their land in a more nature positive way. These cases indicate that tenure rights always manifest as a bundle of rights and responsibilities. The exercise of appropriate tenure rights and responsibilities ensures appropriate restoration outcomes.

Informal tenures

Informal tenures (including customary tenure) are based on socially accepted local rules.⁹¹ Though not legal, they are effective tenure rules or practices that are legitimately acceptable within societies.

In the **Central African Republic**, informal tenure rules – including abstention from slash-and-burn, bushfire and bushmeat hunting – were part of a planning scheme that guided the implementation of forest landscape restoration activities with local populations.

Other insights

Evidence from the 12 country cases and from elsewhere also demonstrates that:

- Coordinated measures with supportive **legislation and reforms** can link tenure with restoration to achieve land degradation neutrality targets.⁹²
- Secure land rights in **urban areas** limit the proliferation of informal settlements and the land degradation linked to urban sprawl. It also limits land fragmentation in rural areas.⁹³
- Secure land rights in **rural areas** enable the protection of agricultural land and natural capital from urban and peri-urban encroachment.
- Secure **water rights** lead to organized use and protection of the quality, quantity, and sources of water.⁹⁴
- In both urban and rural areas, **awareness of land rights** sensitizes landholders and users on how to exercise their rights and avoid conflicts. They become equipped to defend their land rights when others infringe on them. This has a positive effect on controls linked to land-use planning.⁹⁵

- Linking tenure issues to **nature-positive land uses** guarantees long-term investment in trees and the adoption of climate-smart agricultural practices.
- Creation of new **tenure rules** promotes common-pool resources through communally agreed byelaws, landholder contracts or new tenure governance arrangements.⁹⁶
- **Combined operations**, including land tenure, agroecology, and land restoration leads to the recovery of abandoned, degraded land.
- Integrating **vulnerable groups** (mostly women and youths) broadens trust and transparency in restoration work.⁹⁷
- **Community-based initiatives** in restoration are attributable to their having security of land tenure. These include the tenure of on-farm trees (ownership of trees, usufruct of trees, including wood, etc.). This is possible because of supportive agricultural, land tenure and forestry legislation.⁹⁸

2.4 Tenure as an enabler of restoration

The following cases present a broader outlook on how tenure has facilitated restoration.

In **Indonesia**, members of community forests with lengthy holdings plant species with a lengthy rotation period.⁹⁹

In **Nigeria**, the annual Argungu fishing festival (Fashin Ruwa) allows for festive fishing only during a two-week period each year. Fishermen are

restricted from fishing in the river for the rest of the year. This customary norm helps to conserve fish and other river resources. It also incentivizes restoration of fish in the river for successive generations. It provides the security of fishing tenure and avoids a tragedy of the commons.^{100, 101}

In **Brazil** and **Ethiopia**, tenure security resulted from the recognition of community and individual rights (to land, forests, and water) by the state. This recognition incentivizes restoration efforts.¹⁰²

In **China**, **Myanmar** and **Pakistan**, secure land tenure was significant to restoration work because the resolution of disputes over land ownership and control created enabling environment for restoration. It encourages citizens to obey land-use planning rules that contribute to restorative investments.^{103, 104}

In **Ghana**, negotiating new tenure arrangements or adjusting to new tenure rules led to the achievement of restoration objectives. It is possible for negotiations over land tenure to take the form of in-kind or fiscal compensation for alternate livelihoods options to ensure land acquisition for restoration. Also, reintroducing locally extinct planting methods for forest land restoration brings innovative results in revegetation or rehabilitation.¹⁰⁵

For tenure to enable restoration, key elements of tenure need to be present. Some tenure facilitators relevant for restoration are presented in Table 5.

Through private–public–community partnerships, the private sector can be an enabler of restoration via the innovative application of land governance and land tenure practices (Box 6).

TABLE 5

Tenure facilitators: Their manifestations and evidence of impacts from case studies

What facilitates stability in tenure-restoration nexus	Tenure manifestations in restoration	Evidence
Well-being, good livelihood conditions and food security	If people enjoy improved wellbeing, food security and reliable livelihoods, they appreciate the necessity for ecosystem health to maintain their lifestyle.	In Germany , the municipality of Weyarn enjoys adequate living conditions (including livelihood conditions and food security). Maintaining this type of lifestyle is a motivation for a village renewal practice that encourages landscape conservation, ecological farming, nature heritage protection, and household ecological lifestyle. ¹⁰⁶
Efficient dispute-resolution mechanism	Land disputes occur due to conflicting and overlapping interests and land rights. Having effective conflict-resolution mechanisms against insecurities arising from disputes leads to security of tenure. Access to justice strengthens dispute-resolution measures.	In Myanmar , many smallholders were evicted for various reasons, while others were displaced by conflict or infrastructure development. Where the conflicts were resolved, it led to security (in both duration and benefits) in restoration works. ¹⁰⁷

TABLE 5

Tenure facilitators: Their manifestations and evidence of impacts from case studies (*continued*)

What facilitates stability in tenure-restoration nexus	Tenure manifestations in restoration	Evidence
Education, awareness, and capacity development	If land users and practitioners apply appropriate land-use techniques and human rights in land restoration, it leads to respect for land rights.	In Kenya and Honduras , direct training conducted using co-management committees on gender and participation ensures equal distributions of restoration benefits among men and women. ¹⁰⁸
Adoption of participatory approaches	Participatory approaches to restoration occur through decentralized decision making, inclusive engagement and multi-actor and multi-sector activities.	Multi-stakeholder participation in assisted natural regeneration in the Chilgoza forest in Pakistan has reduced deforestation and degradation. ¹⁰⁹
Land information access	Availability and access to land information allow for making correct tenure decisions for restoration purposes. Together with transparency in land information, it allows for better monitoring, reporting and development of capacities to use the data for decisions on restoration.	In Guinea Bissau , the creation of geo-referenced database for forest and landscape restoration is improving transparency, capacity development and knowledge exchange because people have access to data. ¹¹⁰
Policy and legal frameworks	Having supportive tenure policies, administrative due processes, and legislation creates a harmonious environment for restoration. When backed by the political will and commitment to implement them, it generates secure tenure necessary for an uninterrupted restoration process.	In China , transforming the State Forest Farm landscapes by implementing annual forest management and restoration plans (including monitoring data on changes in forest condition and ecosystem services) is scaling up changes in forest condition and ecosystem services. ¹¹¹
Private sector engagement and public-private partnerships	Private-sector engagement and public – private partnerships support land administration systems to leverage clients and stakeholder relationships in the land sector. The private sector provides investments needed for restoration. This helps in securing value chains in ecosystem services delivery.	In Ghana , a restoration work (plantation) of 11,000 ha has triggered the creation of contract services providing harvesting and haulage services (including sawmills and downstream investments) that create more forest plantation investments. ¹¹²
Gender mainstreaming and inclusion	When there are equality and fairness in land ownership, it allows everyone (men, women, youths, and underprivileged groups) to give their full potential to restoration works.	Honduras used gender mainstreaming to rehabilitate corridors to increase connectivity between protected areas and production landscapes. It strengthened the supply chain and improved farmers' income (from coffee, cocoa, sustainable agroforestry, and ecosystem services) and increased indigenous knowledge. ¹¹³
Transparency in land administration	Without transparency in land administration, corruption and inequalities prevail in land allocation and management. With transparency, transparent and credible information and transactions will be available to the public concerning land rights. This builds trust and accountability in restoration works.	In Nepal , land administration deals only with the formal land tenure system. Engaging in a fit-for-purpose land administration approach presented a solution to managing informal and emergency tenure situations. Mapping and digitizing plots using a pro-poor GIS created documentation of tenure in Jhorahat village. Beneficiaries used their documents as proof of ownership for compensation after earthquake and for emergencies. This allowed access to land for restoration. ¹¹⁴
Adoption of holistic and integrated approaches	When land-use planning integrates improvements in tenure security, disaster resilience and multi-sector governance (such as linking land, water, forest and mineral governance), it strengthens tenure.	Integrating sectors and initiatives help to produce multiple tenure-restoration benefits. Combining tenure and land-use planning in the Philippines led to combined climate change and disaster-risk reduction based on ridge-to-reef concept protection of Leyte Island. ¹¹⁵

BOX 6

Ghana: Public–private partnership to restore degraded forest reserves

In Ghana, public–private partnerships (collaborative arrangements between two or more public- and private-sector stakeholders) enabled the government, communities and private corporations to work together in restoration. These activities led to redefining responsibilities to create new tenures (including the documentation of tenures). This led to tenure playing a crucial role linking land use and restoration.

There was a lack of access to land, and unsustainable farming practices (e.g., slash-and-burn practices, etc.) which was leading to forest degradation. Desperate efforts were made to rehabilitate degraded forests. Aims focused on catalyzing private-sector involvement in sustainable large-scale teak plantations in degraded forest reserves.

Tenure-restoration nexus. Rehabilitation involved the accommodation of existing farming through the intercropping agreements. This helped the farmers feel secure in the restoration work. The introduction of intercropping and rotations between planting years, and relocating some of the farming outside the forest reserves, helped to intensify a more coordinated tenure practice and land-use in these areas.

Each intercropping farmer signed a renewable contract for 1 year (new farmers) or 2 years (project-affected farmers). Encroacher farmers sign a 5-year intercropping guarantee contract upon their replacement to the host community. This enabled them to feel secure in the restoration exercise.

Annual meetings between intercropping farmers allowed them to share information and expectations. Being informed about the state of the landscape allowed them to know their responsibilities and make annual commitments to the restoration process.

The traditional council of the host community is legally responsible for the allocation of land. As the traditional rulers are empowered to do this, they became committed to hosting the replaced households as full members of that community and indicated that farmland would be available to them.

Key learning. Intercropping was effective in rehabilitating land and intensifies farming practices through intercropping. Coordinated tenure rules helped restoration and supported livelihood local agriculture.

Source: Analysis of case studies.¹¹⁶



3. TOOLS AND METHODS FOR RESTORATION

Various approaches to tenure and land restoration can contribute to the success of land restoration. Table 6 lists some of these. These approaches can help ensure positive outcomes for people and the environment, both locally and off-site.

Used separately or in combination, these methods can simultaneously address the causes and consequences of land degradation.

TABLE 6
Methods that promote restoration nexus practice

Methods	Evidence and potential role
Restoration	
Sustainable forest management	Using tree retention as a conservation measure in forests of northern Europe required tenure restrictions concerning when and how to harvest of forest products to avoid or reduce degradation. ¹¹⁷
Restoration opportunity assessment methodology (ROAM)	ROAM was used to identify high-priority locations for the sustainable production of charcoal near protected areas in Cameroon . It involved imposing penalties, regulation of forest tenure and plant selection, and land tenure realignments. ¹¹⁸
Grazing pressure management	The method involves extensive vegetation improvements (e.g., reseedling, weed control, shrub plantations, reforestation). Appropriate grazing management includes adjusting the stocking rate to the grazing capacity of the restored land, the right animal species, and an appropriate grazing system. ¹¹⁹
State forest farm schemes	In China , the scheme involves afforestation activities, and the change in land-use and tenure from farm to forest. It also involves compensating farmers for converting cropland to a forest. ¹²⁰
Integrated soil fertility management	In Kenya , competing uses for crop residues and other organic resources led to low nutrient-cycling efficiencies at the farm scale. Modifying farmers' land-use rights to retain more crop residues in the field and improve manure management helped conserve nutrients on farms. ¹²¹
Agroforestry	This entails reversing the fragmentation of forest ecosystems by afforesting farmlands to improve forest vegetation and biodiversity, and reverse degradation. It requires a change in tenure from cropping to combined forestry and cropping. ¹²²

TABLE 6
Methods that promote restoration nexus practice (*continued*)

Methods	Evidence and potential role
Land administration	
Fit-for-purpose land administration	In urban and rural Nepal , this approach was used in the aftermath of an earthquake to map and record the uses and natural resources, and to determine ecosystem services locally to implement land policy. ¹²³
Pro-poor GIS: Social Tenure Domain Model (STDM)	STDM is a community-level GIS used in Kenya to map land-use rights, flooding, and irrigation hotspots in the Upper Tana River catchment. The data enabled the construction of irrigation systems for rice out-growers. The data is used to estimate the out-growers' irrigation needs to avoid excessive water usage and reduce depletion. ¹²⁴
Participatory enumeration	In the early stages of restoration, this gathers information on the population size, ownership patterns and the state of tenure in an ecosystem. It was used by the National Slum Dwellers Federation of Uganda to protect open spaces and install drainage in the cities of Arua, Jinja, Kabale, Mbale and Mbarara.¹²⁵
Land-use-planning schemes	Adaptable to all aspects of restoration, including tenure improvement and to balance benefits and losses. It presents a platform for setting new rules and controls on the who, what, where and why aspects of restoration decisions.¹²⁶



4. TURNING GLOBAL ACTION INTO LOCAL IMPACTS

What should countries do to combat land degradation? The global-level momentum is very necessary but remains insufficient. Parties to the UN Convention to Combat Desertification have consistently echoed the need to create enabling environments at the national level to make the implementation of the Convention more transformative.

The tenure–restoration nexus practices and evidence presented above can support the Decision 26 of the 14th Conference of Parties to the Convention.¹²⁷ This notes the importance of land tenure in achieving restoration objectives and recognizes that tenure rights should consider the rights of others and matters of public interest that promote general welfare, according to national legislation. It also recognizes that responsible land governance is a fundamental component of restoration and is important to addressing land degradation. It calls on governments to:

- Adopt legislation and procedures to support sustainable land use and land restoration.
- Recognize legitimate tenure rights, including customary rights, consistent with the national legal framework.
- Legally recognize the equal use and ownership rights of land for women and enhance women's equal access to land and tenure security. This includes promoting gender-sensitive measures to encourage restoration.
- Provide effective, timely and affordable access to justice and transparent dispute resolution mechanisms. This includes promoting fair and inclusive community-based conflict resolution mechanisms on land and natural resources.
- Support non-discriminatory and participatory ways of promoting equal tenure rights and access to land for all.

This Decision provides a pathway to national action and local impact for tenure and restoration. However, these require the introduction of policies and legal reforms that remove structural barriers, such as inheritance or land tenure rights,

discriminatory norms and gendered roles and stereotypes.¹²⁸ They also require the promotion and establishment of the Voluntary Guidelines on the Responsible Governance of Tenure, Forests and Fisheries.¹²⁹

What is the pathway to achieve local impact in countries and communities around the world? Three aspects of the tenure–restoration nexus (land tenure, restoration, and participation) are essential.

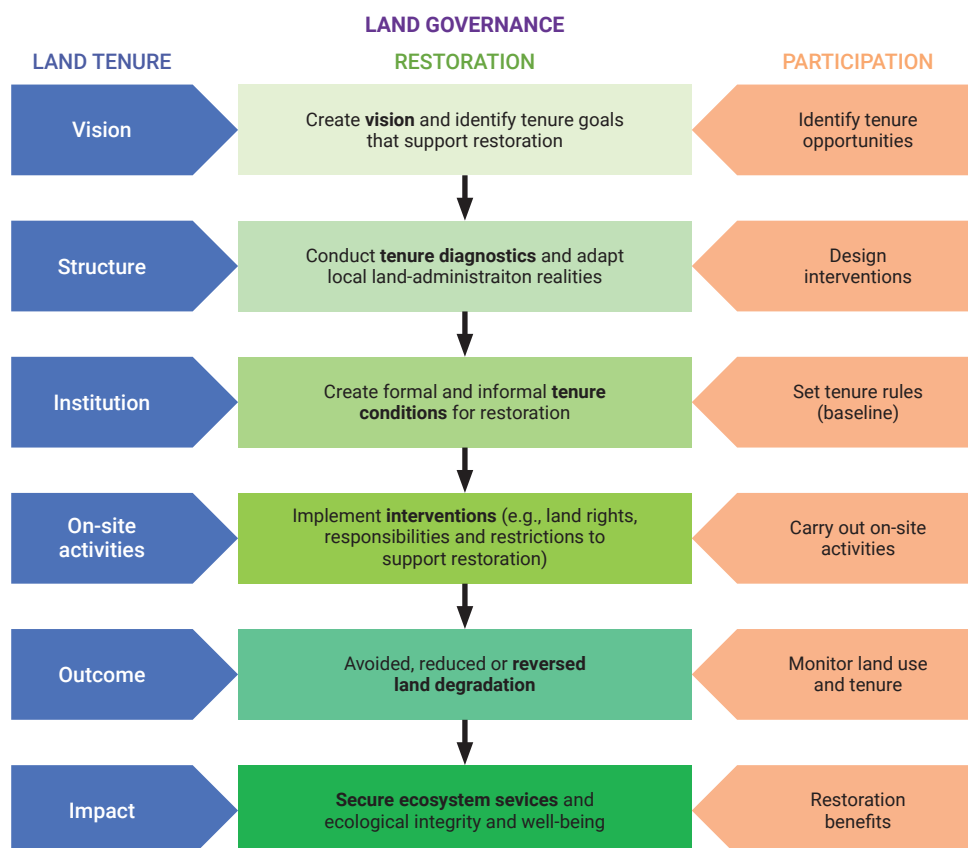
However, these three aspects have to be steered by good land governance to make a local impact (Figure 7). Land governance provides the enabling environment and the capacity to address land-use policy choices, relevant tenure rules, and coordinate the participation of stakeholders across different administrative levels of decision-making.¹³⁰ Effective land governance maintains the institutions that secure the tenure, drives participation and implements restoration. Tenure security needs to be part of the vision, structure, institutions, onsite activities, outcomes, and impact of restoration at the local level.

The impact pathway to strengthen tenure land and restore ecosystems involves (Figure 7):

- Creating a restoration **vision** and identifying secure tenure goals that supports land-degradation neutrality. Examples include carbon sequestration and secure tenure for indigenous people.
- Conducting **tenure diagnostics** and adapting local land administration realities. Tenure diagnostics are necessary to identify tenure rights and opportunities that can catalyze the restoration work. For example, restricting the use of forest products could help replenish stocks. Identifying statutory and customary rights and responsibilities of users or occupants of natural resources is necessary to make fair compensations. Identifying land or resource tensions or conflicts before on-site implementation makes it possible to strategize how to resolve them so as to ensure tenure security.

FIGURE 7

Impact pathway for the tenure – restoration nexus at the local level



- Creating formal and informal **tenure conditions** for achieving land-degradation neutrality. This may mean adapting local land rules and regulations. Where the existing rules do not enable tenure improvements, new rules may be needed to promote tenure security during restoration. Redefining existing rules and setting new rules provide an opportunity to realign tenure to support nature-positive activities. It allows for linking tenure rights to policy frameworks in a way consistent with restoration goals.
- Implementing **interventions** specifically for restoration (including land rights, restrictions and responsibilities that support land-degradation neutrality). This includes adapting existing tenure rules (and creating new ones) as a supporting mechanism for restoration works. It also requires directly engaging in applicable restoration activities using sustainable land-, forest-, and water-management tools—e.g., land rehabilitation, land recovery, moderation, reparation, compensation, etc. These activities work to avoid, reduce, and reverse degradation to achieve the vision and objectives of restoration.
- **Monitoring** land-degradation neutrality outcomes to assess progress to long-term socio-economic and ecological impacts.
- Secure land tenure, ecological integrity and human well-being translates into strengthened tenure and resource rights, better **ecosystem services** and ecosystem integrity, and partially or fully restored land use and land cover, improved land productivity or restocked carbon. It creates a situation where all land users (irrespective of gender and socioeconomic status) enjoy the socioeconomic and environmental benefits.

This pathway can be achieved only by involving multiple stakeholders: government, communities, urban occupants, civil society, land-management professionals, landowners, and land users, including women, disadvantaged and minority groups. Stakeholders are both agents and beneficiaries of land tenure. The goals of tenure security and land and ecosystem restoration cannot be achieved, or are not sustainable, without such engagement. It is the stakeholders that carry out tenure-related decisions and activities relevant for making local impacts.

Nature-positive actions are needed of all stakeholders. Governments and communities have to set new tenure rules that fit with restoration and which community continue to uphold. This is common in community-based natural resource committees or water user committees.¹³¹ Stakeholders:

- Identify the tenure opportunities leading to an appropriate vision for restoration practice.
- Design restoration approaches using existing and potential tenure structures.
- Set tenure rules as a baseline to guide interventions.
- Make decisions and carry out on-site activities to strengthen tenure and restore land.
- Monitor the outcomes of land use and tenure.
- Enforce the rules.
- Enjoy the benefits of restoration and improved tenure.



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5. CONCLUSIONS

5.1 The tenure–restoration nexus and the bundle of rights

Tenure creates enabling conditions for land restoration.¹³² Tenure security and land restoration are linked to one another, and actions in one area often affect the other. Evidence from the case studies shows that tenure concerns arise during restoration. By looking at the range of tenure arrangements in connection to restoration, it is possible to identify the specific roles of tenure in land restoration.

Tenure is about the rules that determine land use, which affects restoration activities at various scales. Restoration—the actions to avoid, reduce, and reverse land degradation—is exercisable both as a right and a responsibility associated with land holdings. Tenure can be understood as a bundle of rights that consists of ownership and use rights, responsibilities and obligations. Some aspects of restoration are part of this bundle, such as restrictions on felling trees.

5.2 Tenure-restoration principles for global action and local impact

Tenure affects restoration in both positive and negative ways. Specific principles are necessary to ensure that practices are nature-positive. This is important for ensuring that global actions lead to local impacts. Principles include:

- Develop clear objectives during restoration to ensure nature-positive outcomes, without impeding the land rights of people.
- Conduct an assessment of tenure in relationship to restoration to determine a pathway for restoration. It is necessary to identify and involve all stakeholders, including landowners, holders of land-use rights, and public and communal ownerships. Those whose tenure rights are at stake should participate in restoration.

- Make land-use decisions by considering the potential, condition, and tenure of land, plus resilience, social, cultural, and economic factors. This is necessary to make restoration an investment for all stakeholders.
- Record and document the process followed.

5.3 Turning principles into local action and impacts

A pathway to land restoration relates to three aspects: land tenure, restoration, and stakeholder participation, supported by good land governance. Stakeholder participation embodies the responsibilities necessary to engage in land tenure and restoration. Box 7 lists the critical steps for making local impacts.

Restoration is also about strengthening the responsibilities associated with land holdings. These include:

- **Ecological activities** that provide the opportunity to ensure legitimate tenure rights against threats and infringement when implementing local land-use practices, policies and investments in restoration.¹³³
- The delivery of **ecosystem services** in a way that realizes the synergies among landholders to mitigate negative trade-offs.¹³⁴

Examples of land-related responsibilities concerned with restoration include:

- Scaling up finance for land tenure and restoration activities
- Awareness-raising and capacity development
- Community participation and leadership (e.g., water user committees)
- Changing land-tenure rules to enable restoration (e.g., sharing land-use management of state land between government and local communities in occupation on the land despite the legal framework)

BOX 7

Steps to strengthen tenure and restore land at the local level

- Identify goals both for landscape restoration and to strengthen security of tenure.
- Analyze both tenure and restoration as part of restoration efforts.
- Identify private, public, and common land rights and their boundaries, and resolve overlaps. Investigate the extent of registered rights, particularly in urban areas.
- Identify private, public, and common rights over natural resources such as soil, water, minerals, forests, etc.
- Respect local people's land and resource rights (e.g., formal, informal, customary, indigenous tenures, religious, and other tenure arrangements). Recognize and respect the informal rights of indigenous peoples in their ancestral domains.
- Adapt local tenure and restoration rules based on formal and informal policies, practices, regulations and norms.
- Ensure equal land rights for all: men and women, privileged and underprivileged.
- Engage land-administration officials and agencies with the organizational mandates or rights or responsibilities for land and restoration.
- Clarify responsibilities for natural resource management between the state, occupants, and communities.
- Resolve land conflicts or disputes.
- Exercise the transfer of, sharing of, or compensation for, ownership, use, right, interests and privileges in ways that promote restoration. Reallocate land use rights.
- Respect existing restrictions and create new rules around restrictions and responsibilities on the use of land to achieve restoration objectives.
- Identify agreed land boundaries, then map and register them and the rules, with the appropriate authorities.

- The creation of community rules including the right to exclude and sanction people
- Research and knowledge building
- Field practices
- Non-statutory local conflict-resolution mechanisms
- Innovating safe implementation mechanisms suitable for pandemic (such as the COVID-19) periods

does not compromise environmental integrity. This implies managing land and land resources responsibly.¹³⁶

Managing land responsibly in turn means managing tenure and reconciling tenure issues with restoration activities. Land-related regulations at various scales shape restoration because restoration depends on tenure rules. Viewing tenure in conjunction with restoration makes it possible to discern opportunities for more sustainable solutions to land degradation.

5.4 Tenure, restoration and land governance

Land governance is at the core of the interconnections between tenure and restoration and is key to achieving land degradation neutrality on a large scale. As countries pursue different development paths for socioeconomic prosperity, competition among land uses intensifies.¹³⁵ Managing these competing uses requires institutional and policy diligence to ensure that the momentum to achieve socio-economic prosperity

Political will is required for various reasons:

- To strengthen land tenure and tenure rights, improve access to information and knowledge, and to facilitate partnerships for funding opportunities.¹³⁷
- To create robust institutional and policy frameworks to regulate and manage the large-scale land acquisition that is often linked to global supply chains so that they do not negate ecosystem integrity and lead to poor land governance.

- To create a more supportive policy environment and substantial resource mobilization that is needed for scaling up restoration and land administration.¹³⁸

The global financial landscape, including national-level funding streams, does not always prioritize investments in restoring degraded land. There are various competing development needs

based on country-level defined development priorities. Often, investments in land restoration are not on the priority list. This underscores the importance of a strong political will to raise the profile of applying the tenure–restoration nexus to land degradation on national development agendas to meet global land-degradation neutrality objectives.



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