

How to: Sustainable Land Management



Sustainable Land Management (SLM) is ultimately about **stewardship**: managing land in ways that sustain both people and nature. It requires balancing productivity with ecosystem integrity, short-term needs with long-term resilience, and local priorities with global commitments.

For development practitioners working on food systems, climate adaptation, biodiversity conservation, disaster risk reduction and rural livelihoods, SLM provides a powerful framework for addressing multiple objectives simultaneously,

by integrating SLM throughout the project cycle: from context analysis and stakeholder engagement to implementation, monitoring and scaling, interventions can contribute to healthier landscapes, more resilient food systems and improved human well-being.

In a world facing increasing pressures on land resources, Sustainable Land Management is no longer an optional environmental consideration. It is a **prerequisite** for sustainable development.

“Healthy land is central to the wellbeing of the planet’s ecosystems and biodiversity; it feeds us, shelters us, and provides the backbone to a thriving global economy.” UNCCD.

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1. Sustainable Land Management – what and why

1.1. Land degradation : a global threat

Land underpins nearly every aspect of human well-being. Approximately 95% of global food production depends directly on land resources, while more than three billion people rely on land-based livelihoods through agriculture, livestock keeping, forestry and related activities. Healthy soils, vegetation and water resources provide the basis for food production, regulate water flows, support biodiversity, store carbon and strengthen resilience to climatic shocks. Land also provides a wide range of ecosystem services that are often invisible until they are lost. These include water filtration and storage, nutrient cycling, pollination, erosion control, climate regulation, cultural values and recreational opportunities.

However, growing and competing demand for food, feed, fibre and energy is placing unprecedented pressure on land resources :

- **Agricultural expansion** continues to drive the conversion of forests and natural ecosystems worldwide, undermining biodiversity, carbon storage and water regulation, while raising a fundamental challenge for sustainable food systems: how to increase food production while safeguarding the environmental resource base for future generations.
- At the same time, farming systems are increasingly dominated by a small number of crops and monocultures, with just ten crops covering nearly two-thirds of arable land. This trend towards **reduced crop diversity** combined with monocultures increases vulnerability to pests, diseases, and climate shocks, while contributing to land degradation. In parallel, more and more cropland is being cultivated not to feed people directly, but for other uses such as animal feed and biofuels, textiles and pharmaceuticals, raising global concern for and weakening further global food security.
- **Urbanisation and infrastructure development** are accelerating the loss of productive land and reducing its capacity to provide ecosystem services. Together, these trends highlight the urgent need for Sustainable Land Management as a means of reconciling food production, environmental sustainability and long-term resilience.

These pressures are compounded by the increasing scarcity of natural resources, including fertile soils, freshwater, and biomass. The consequences extend well beyond environmental concerns: Land degradation reduces agricultural productivity, increases poverty and vulnerability, undermines food security,

contributes to migration and can intensify competition and conflict over scarce resources. As these pressures increase, the need for solid and fair governance, transparency and participation also increases.

Human-induced land degradation is now recognised as one of the world's most pressing environmental and development challenges. Recent assessments estimate that up to 40% of the total global land surface is already degraded, impacting almost **half of the world's population**. All major ecosystems are under threat: In **croplands**, about one third of the agricultural land (479 million ha) is affected by degradation through unsustainable farming practices such as overcropping and soil exhaustion. **Forests** are experiencing widespread deterioration; as of 2019, approximately 25% of global forests were classified as having low integrity, as a result of fragmentation, disturbance and conversion. **Grasslands** face similar pressures: being one of the most diverse ecosystems, grasslands count with about 25% of their area degraded, often due to overgrazing and poor management. **Peatlands**, which store vast amounts of carbon, are about 10% degraded by human activities such as draining or mining.



Types of land degradation

Soil erosion by water



(e.g. gully erosion, coastal erosion, riverbank erosion, sheet erosion)

Soil erosion by wind



(e.g. loss of topsoil, deflation and deposition)

Chemical soil deterioration



(e.g. fertility decline and reduced soil organic matter, soil pollution, salinisation)

Physical soil deterioration



(e.g. compaction, crusting, sealing, waterlogging, livestock over-stocking)

Biological degradation



(e.g. deforestation, loss of habitats, loss of soil life, increase of pests/diseases)

Water degradation



(e.g. change in quantity of surface water, change in groundwater/ aquifer level)

(Source: WOCAT Glossary)

1.2. Definition and core principles

Sustainable Land Management (SLM) has evolved over recent decades as a response to growing concerns over land degradation, biodiversity loss, climate change and declining ecosystem services. While definitions vary slightly between institutions, they share a common objective: ensuring that land resources continue to support both human well-being and ecosystem functioning over the long term.

Definition :

SLM can be seen as a balancing act between productive use and ecosystem services. It aims to maximise the economic and social benefits from land resources (incl. soils, water, plants, and animals), while ensuring the long-term productive potential and environmental functions of these resources. (FAO, 2015)

Types of SLM measures

Agronomic measures



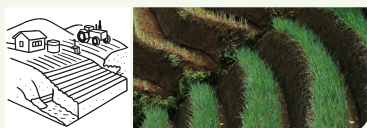
focus primarily on crop and soil management practices, generally seeking to improve soil structure, increase organic matter, enhance nutrient cycling and reduce erosion, usually short-term. (e.g. cover cropping, crop rotation, intercropping, mulching)

Vegetative measures



use living plants to stabilise soils, regulate water flows and enhance biodiversity, particularly effective in controlling erosion while simultaneously generating products such as fruits, timber, fodder and fuelwood. (e.g. agroforestry, grass strips, fire breaks)

Structural measures



involve physical modifications to landscapes to reduce erosion and improve water management, often particularly important in mountainous and dryland environments. (e.g. terraces, bunds, rooftop harvesting, gully rehabilitation)

Vegetative measures

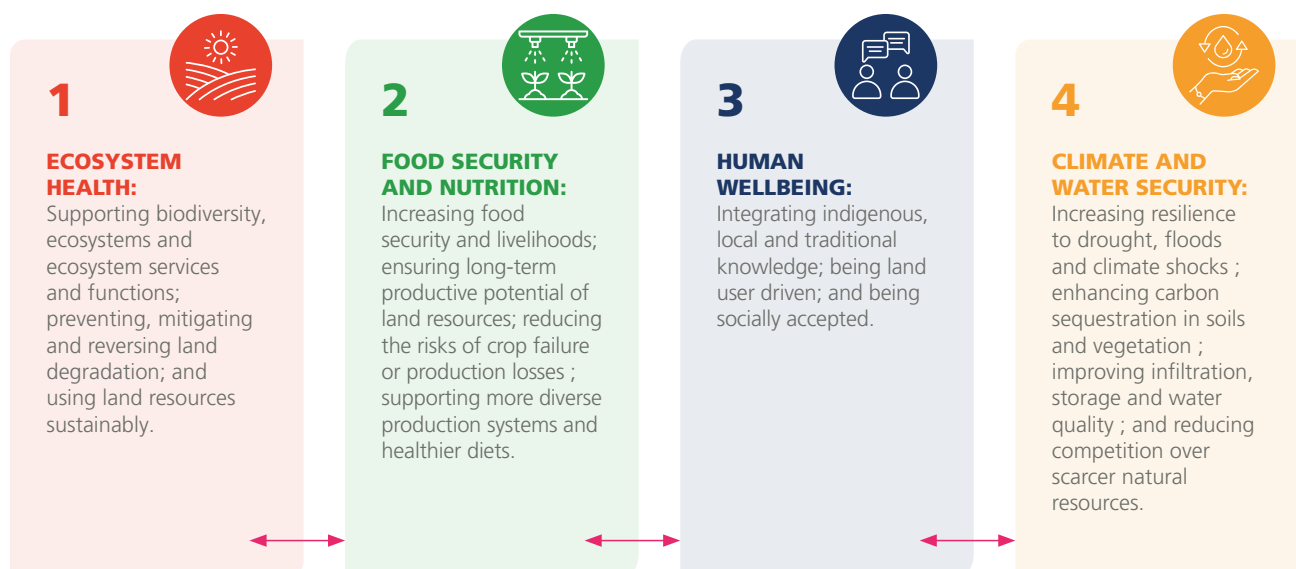


focus on changing how land resources are used and governed, often addressing the underlying drivers of degradation rather than only its symptoms. (e.g. protected area management, distribution of water points, rotational grazing)

(Source : [WOCAT database](#))

Why SLM matters :

SLM forms the basis for sustainable development by strengthening four interdependent pillars:



Related concepts :

SLM shares many principles with several complementary approaches that have gained prominence over the years. Although these concepts differ in their origins, objectives and/or entry points, they all seek to combine environmental sustainability with human well-being, and can often be implemented through similar practices.

Agroecology promotes biodiversity, ecological processes and reduced reliance on external inputs, all of which contribute directly to sustainable land management.

Regenerative agriculture can be viewed as one pathway for implementing SLM in agricultural landscapes by restoring soil health, enhancing ecosystem functions and improving long-term productivity.

SLM also overlaps strongly with **Nature-based Solutions** (NbS), as many SLM practices use the protection, sustainable management and restoration of ecosystems to address societal challenges. Similar synergies exist with **Ecosystem-based Adaptation** (EbA) and **Ecosystem-based Disaster Risk Reduction** (Eco-DRR), both of which rely on healthy ecosystems to strengthen resilience.

Rather than competing approaches, these concepts are therefore best viewed as **complementary and mutually reinforcing**. Together, they provide different entry points for achieving more sustainable, resilient and productive landscapes.

1.3. SLM and global policy relevance

The different governance levels are complementary rather than hierarchical. Global frameworks provide a common vision and internationally agreed objectives; regional strategies foster cooperation, policy harmonization and knowledge exchange; while national strategies, legislation and investment plans operationalize these commitments according to local

contexts. Policy coherence across these levels helps ensure that Sustainable Land Management is not implemented as a collection of isolated projects, but as a coordinated and scalable pathway towards resilient landscapes, sustainable food systems and sustainable development.

Sustainable Development Goals :

Sustainable Land Management contributes directly to SDG 15 (Life on Land) by preventing and reversing land degradation, restoring ecosystems and promoting their sustainable use. By maintaining healthy soils and ecosystems, SLM also makes important contributions to a wide range of other SDGs :



Rio Conventions :

Sustainable Land Management is implicated in the three Rio Conventions that date back to the Rio Earth summit in 1992. It furthermore relates to the Ramsar Convention as well as the Sendai Framework for Disaster Risk Reduction (SFDRR). Countries signatories to these Conventions and global

frameworks commit to implementing the corresponding objectives through national strategies and actions, monitoring and reporting on progress, and cooperating internationally to achieve the shared environmental goals.



Convention on Biological Diversity (CBD) & the Global Biodiversity Framework

The CBD provides the global framework for the conservation and sustainable use of biodiversity and the fair and equitable sharing of benefits arising from the use of genetic resources. In 2022, Parties adopted the Kunming-Montreal Global Biodiversity Framework (GBF), establishing four long-term goals and 23 global targets to halt and reverse biodiversity loss by 2030 while supporting the achievement of the 2050 Vision of “Living in harmony with nature.” Countries implement these commitments primarily through their National Biodiversity Strategies and Action Plans (NBSAPs). Sustainable Land Management contributes directly to the implementation of

many GBF targets by conserving, restoring and sustainably managing terrestrial ecosystems and agricultural landscapes. SLM helps maintain habitats and ecological connectivity, improve soil biodiversity, enhance ecosystem resilience, and reduce pressures on natural ecosystems. In particular, SLM supports the achievement of Target 1 on integrated land use planning, Target 2 on ecosystem restoration, Target 10 on the sustainable management of agriculture, aquaculture, fisheries and forestry, and contributes to several other targets related to ecosystem integrity, climate resilience and the sustainable use of biodiversity.



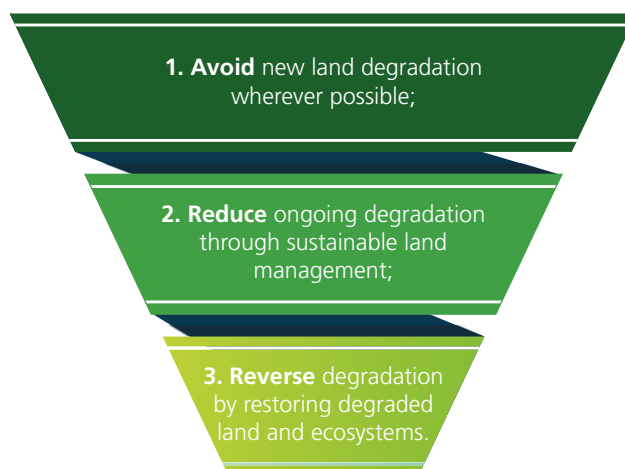
United Nations Convention to Combat Desertification (UNCCD) & Land Degradation Neutrality

The UNCCD is the global convention mandated to combat desertification and to mitigate the effects of drought, by preventing, reducing and reversing land degradation, and by strengthening the resilience of ecosystems and land-based livelihoods, supported by international cooperation and partnerships. SLM therefore lies at the heart of the UNCCD.

A major milestone in the Convention's evolution came with the adoption of the SDG Target 15.3: *"By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world."* This target elevated land degradation from a sectoral environmental issue to a universal global development objective applicable to all countries.

To support implementation of SDG 15.3, the UNCCD developed the concept of **Land Degradation Neutrality (LDN)**, defined as: a *"state whereby the amount and quality of land resources necessary to support ecosystem functions and services and enhance food security remain stable or increase within specified temporal and spatial scales."* Progress towards LDN is measured and reported by the Parties to the Convention on a regular basis, through both the UNCCD reporting process, and the national SDG reporting.

LDN is based on the principle that preventing land degradation is more effective and less costly than restoring degraded land, while ensuring that any unavoidable land degradation is balanced by restoring degraded land. It follows a "response hierarchy", guiding decision-makers in planning interventions to achieve LDN: Avoid > Reduce > Reverse.



Achieving Land Degradation Neutrality is not only a technical challenge but also a **governance** challenge. Effective implementation depends on clear and inclusive governance arrangements that ensure equitable access to land and natural resources, strengthen tenure security, enable meaningful participation of all stakeholders, and promote transparent and accountable decision-making. Recognizing this, the UNCCD and its partners developed the [Technical Guide on the Integration of the Voluntary Guidelines on the Responsible Governance of Tenure \(VGGT\) into LDN Implementation](#), which demonstrates how responsible tenure governance can strengthen every stage of the LDN process, from planning and target setting to implementation, monitoring and benefit sharing.



United Nations Framework Convention on Climate Change (UNFCCC) & the Paris Agreement

The United Nations Framework Convention on Climate Change (UNFCCC) provides the global framework for international cooperation to address climate change. Building on the Convention, the Paris Agreement, adopted in 2015, commits Parties to limit global warming, strengthen resilience and adaptive capacity, and align financial flows with low-emission and climate-resilient development. Countries implement these commitments primarily through their Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs).

Because land both stores carbon and releases greenhouse gases when degraded, the targets of the UNFCCC cannot be achieved without transforming how we manage land. SLM contributes to climate change mitigation through increased carbon sequestration while strengthening adaptation by improving water retention, reducing erosion, enhancing biodiversity and increasing the resilience of agricultural systems and rural livelihoods to climate variability and extreme events, including droughts and floods. Many SLM practices therefore deliver both mitigation and adaptation benefits simultaneously.

Together, the three Rio Conventions provide complementary frameworks for addressing the interconnected challenges of climate change, biodiversity loss and land degradation. SLM offers one of the most effective implementation pathways for achieving their shared objectives, demonstrating how a single set of actions on the ground can generate multiple environmental, social and economic benefits.



Continental and regional frameworks :

While the UNCCD, UNFCCC and CBD establish complementary global commitments on land, climate and biodiversity which translate into national roadmaps, regional frameworks help

coordinate collective responses to shared challenges. The following table provides an overview of selected examples :

Africa	African Union's Agenda 2063 & the CAADP Kampala Strategy (2026-2035)	The African Union's Agenda 2063 adopted in 2015 provides the continent's overarching development vision, promoting environmentally sustainable and climate-resilient economies together with people-centred land governance and secure land tenure. Building on this vision, the CAADP Kampala Strategy seeks to transform Africa's agri-food systems, SLM playing a central role in restoring ecosystems, improving productivity, strengthening resilience and supporting food security and climate action.
Mediterranean	UfM 2030 GreenerMed Agenda	Formally endorsed in Oct. 2021 by Ministers, it serves as the official environmental cooperation framework for the EU and 16 of the Southern & Eastern Mediterranean member states. Within its priority on protecting, managing and restoring natural resources through an integrated ecosystem approach, it notably promotes sustainable land use, ecosystem restoration and nature-based solutions.

Latin America	Forum of Ministers of Environment	The region's principal intergovernmental mechanism for environmental cooperation, it periodically adopts regional action plans and ministerial decisions that promote ecosystem restoration, sustainable natural resource management, climate resilience and biodiversity conservation. The 2025 Lima Declaration further strengthens cooperation on the water-land nexus, drought and desertification resilience, and multi-country ecosystem restoration.
Southeast Asia	ASEAN Strategic Plan on the Environment (ASPEN)	Adopted by the ASEAN Environment Ministers to guide regional cooperation, it promotes integrated ecosystem management, sustainable land use, ecosystem restoration and climate resilience.

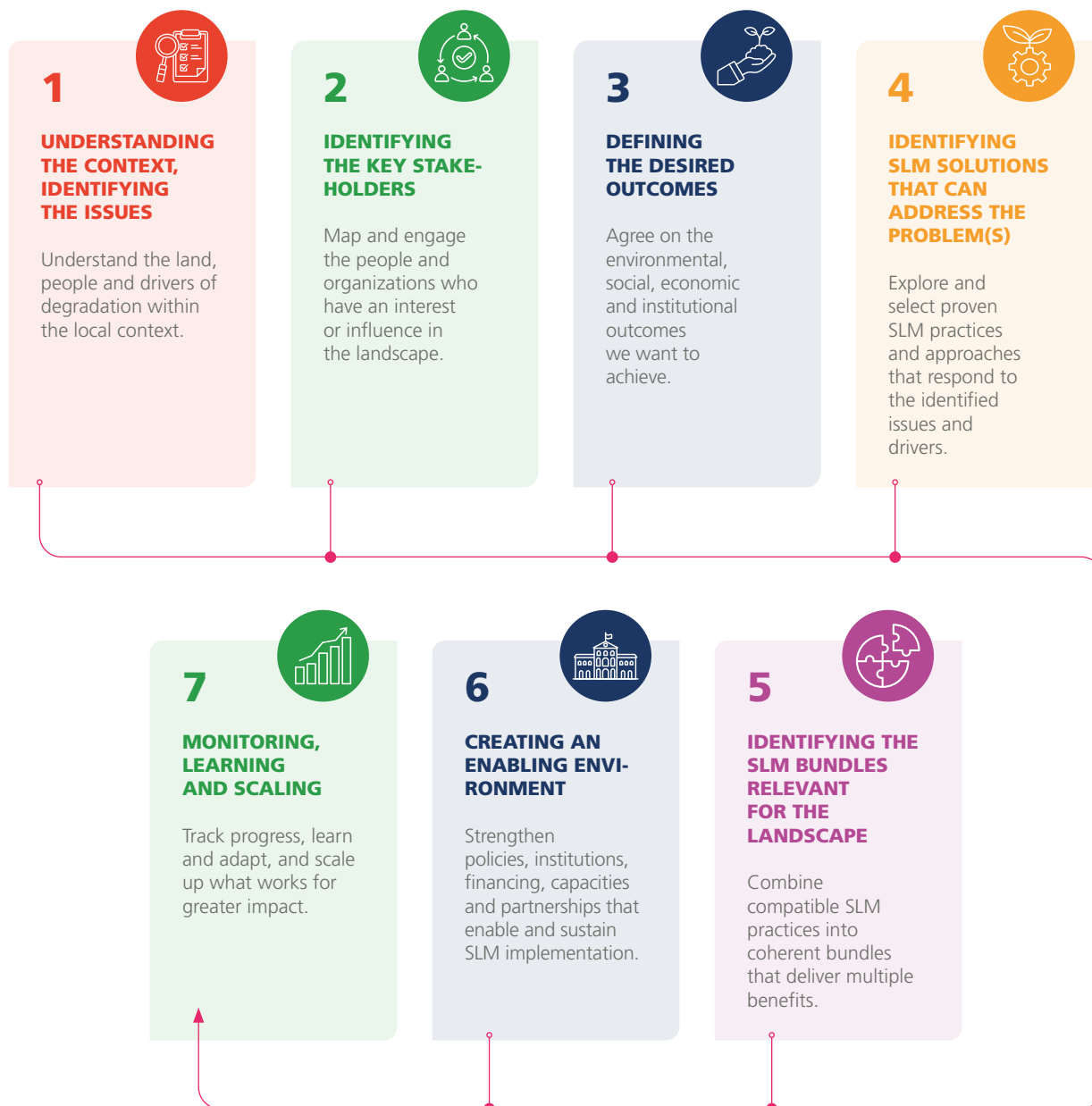
1.4. Why SLM matters for food systems

Food systems depend fundamentally on healthy land resources, and on the sustainable management of land. Achieving long-term food system sustainability depends entirely on the ecological foundation provided by SLM. Conversely, local land management decisions are heavily influenced by the wider food system. By maintaining productive and healthy land resources, SLM strengthens the environmental, economic and social pillars of food systems, safeguarding the resource base needed by future generations.



2. Integrating Sustainable Land Management into Development Programmes

To design Sustainable Land Management into food system projects and guarantee a sustainable ecological foundation of the food system, the following seven steps are proposed, allowing for a context assessment and the identification of relevant solutions in a multi-stakeholder setting, including land users, agriculture experts, government extension, ministries, private agribusinesses, NGOs and researchers.



Step 1. Understanding the context, identifying the issues

The goal is to understand the local landscape, the degradation affecting it and its underlying drivers, while identifying potential opportunities for sustainable management and restoration.

- Assess the **context** by region/sub-region/ community, looking at **biophysical** (e.g. agro-climatic zones, land use types, precipitation, slopes, soil, ground- and surface water, vegetation), **socio-economic** (e.g. population, agriculture's role, settlement patterns, livelihood types, gendered patterns in land use, marginalized communities, market constraints) and **governance** (e.g. land tenure, policy incentives, institutional coordination) information and data.
- Identify the **types of land degradation** (a detailed list of land degradation types can be found [here](#)), and assess the **level of land degradation**, using SDG 15.3.1 and its sub-indicators: land cover change, land productivity dynamics, soil organic carbon. To get a first overview of land degradation in a country of specific area, the [LDN PRAIS4 Products comparison App](#) can be useful.
- Identify drivers/causes of land degradation. These can be direct or indirect. The following table provides an overview. A detailed list of direct

and indirect causes of land degradation can be accessed in the WOCAT [Questionnaire for Mapping Land degradation and SLM](#).

- Prioritize **hotspots** (areas of severe/accelerated land degradation). Look at the country's national [LDN targets](#) to evaluate whether the same areas are prioritized. If relevant, align project efforts with national targets.

A range of complementary **tools** can support this assessment, including: participatory rural appraisal, landscape assessments, land degradation assessments, WOCAT methodologies, the Land Degradation Assessment in Drylands (LADA) approach, and GIS and remote sensing technologies. Combining scientific evidence with local knowledge helps ensure that interventions are grounded in both technical analysis and stakeholder priorities.

Ultimately, this should provide a shared **understanding of the landscape**, including the location of degradation hotspots, the main drivers of land degradation, opportunities for restoration and sustainable management, and the priority landscapes where SLM interventions are likely to have the greatest impact. This provides the evidence base for designing targeted, context-specific and effective SLM interventions.



Direct causes of land degradation - examples

Improper management of the soil ; Improper management of annual, perennial (e.g. grass), shrub and tree crops ; Deforestation and removal of natural vegetation ; Over-exploitation of vegetation for domestic use ; Overgrazing ; Industrial activities and mining ; Urbanisation and infrastructure development ; Discharges ; Release of airborne pollutants from industrial activities, mining and urbanisation ; Over-abstraction / excessive withdrawal of water ; Natural causes.



Indirect causes of land degradation - examples

Population pressure ; Consumption pattern and individual demand ; Land Tenure ; Poverty ; Labour Availability ; Inputs and infrastructure ; Education, awareness and access to knowledge and support services ; War and conflict ; Governance.

Step 2. Identifying the key stakeholders

Successful SLM depends on the active involvement and collaboration of the people and institutions who influence, manage and/or depend on the land and its natural resources. It is also about understanding who needs to be involved for sustainable change, who influences land management.

- **Understand land tenure and resource rights:** Assess land ownership, tenure security and customary rights, including gender dynamics, to ensure interventions are equitable and sustainable.
- **Build on local livelihoods and knowledge:** Understand existing livelihood strategies, seasonal labour patterns, traditional practices and Indigenous knowledge to design interventions that are appropriate, accepted and feasible.
- **Promote inclusion and leave no one behind:** Ensure that the needs and engagement of women, youth, Indigenous Peoples, landless and vulnerable groups, are heard, while promoting decent work and preventing child labour.

- **Engage with stakeholder organizations and collaborations:** Support farmer organizations, cooperatives, pastoralist associations and other community groups to facilitate knowledge exchange, collective action and the adoption of sustainable land management practices.

A range of **tools** can support stakeholder identification and analysis, including stakeholder mapping, stakeholder analysis matrices, institutional mapping, participatory workshops and focus group discussions. These tools help identify relationships among stakeholders, clarify roles and responsibilities, assess power dynamics and identify opportunities for collaboration and partnership.

The outcome of this step should be a shared understanding of who the key stakeholders are, their respective interests, capacities and influence, potential conflicts or synergies, and appropriate mechanisms for participation and coordination throughout the interventions. This provides the foundation for **inclusive governance** and long-term ownership, ensuring that interventions reflect local priorities, strengthen coordination and reduce the risk of conflicts over land and resource use.

Step 3. Defining the desired outcomes

Clear objectives provide a common vision for all stakeholders, guide the selection of appropriate SLM practices, and establish the basis for monitoring progress and measuring success, to be able to answer to the question: *What change do we want to see?*

- Objectives should be developed jointly with stakeholders and reflect the environmental, socio-economic and institutional challenges identified during the context assessment.
 - » **Environmental objectives** may include reducing soil erosion, improving soil health, increasing vegetation cover, restoring ecosystem functions and/or enhancing water availability.
 - » **Livelihood objectives** can focus on increasing productivity, diversifying incomes, improving food security and/or strengthening the resilience of communities to climate and economic shocks.

- » **Institutional objectives** may seek to strengthen governance, enhance tenure security and/or increase local ownership and long-term stewardship of land resources.

- When and where possible, objectives should **maximize synergies** across environmental, social and economic dimensions, recognizing that well-designed SLM interventions can simultaneously deliver benefits for land restoration, climate resilience, biodiversity conservation and sustainable livelihoods.

The outcome of this step should be a shared **vision for the landscape**, supported by clear, realistic and measurable objectives that are aligned with stakeholder priorities, national policies and relevant global commitments. These objectives provide the foundation for selecting appropriate SLM interventions and developing an effective implementation plan.

Step 4. Identifying SLM solutions that can address the problem(s)

This next step aims to identify the SLM practices and approaches that are most suitable for addressing the identified challenges and achieving the desired outcomes. There is no universal solution: interventions should be tailored to the local environmental, socio-economic and institutional context, while building on existing knowledge, capacities and resources.

- Appraise **locally existing SLM practices**: Make an inventory (e.g. with an [inventory table](#)) to catalogue existing SLM technologies and approaches. Match them to the land degradation types identified in Step 1.
- Identify **potential suitable SLM practices** solutions from the international context. A useful tool here can be the WOCAT [Global SM database](#), where you can screen the field-tested good practices, filtering by country, land use, degradation type, technology group, climate, topography, land use rights, and/or specific crops etc., to shortlist possible solutions of interest. One can also utilize the impacts evidence available per SLM technology to assess the ecological, economic and socio-cultural impacts and relevance.

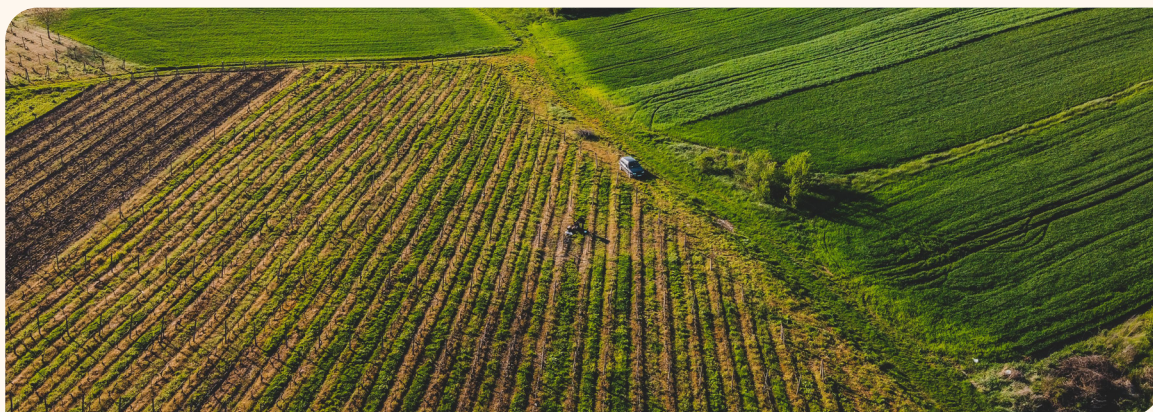
Depending on the type of land use and observed land degradation, a variety of practices can be recommended:

- » **Cropland** : crop rotation, intercropping, no or minimum tillage, agroforestry, terracing, integrated pest management, rainwater harvesting, use of organic fertilizers such as compost and manure, etc.

- » **Pastures & rangelands** : rotational grazing, controlled stocking rates, silvopastoral systems, pasture rehabilitation, fodder production, water point management, community grazing plans, etc.
- » **Forests and woodlands** : sustainable forest management plans, community forestry, agroforestry, fire management, enrichment planting, etc.
- » **Drylands** : water harvesting (half-moons, zais...), sand dune stabilisation, drought-tolerant crops, integrated crop-livestock systems, soil moisture conservation, etc.
- » **Mixed agricultural landscapes** : agroforestry, riparian buffer zones, windbreaks, pollinator habitats, landscape restoration, integrating trees with crops and livestock, etc.

A range of **tools** can support the identification and selection of appropriate SLM solutions, including the WOCAT Global SLM Database, the UNCCD–WOCAT SLM Toolbox, FAO technical guidance, cost-benefit analysis, multi-criteria analysis, participatory planning workshops, farmer field schools, demonstration sites and expert consultations. These tools help compare alternative options, assess trade-offs and identify practices that are technically sound and locally appropriate.

The outcome of this step should be a portfolio of **prioritized SLM solutions** that respond to the identified challenges, reflect stakeholder priorities and are technically, socially and economically feasible and acceptable.



Step 5. Identifying the SLM bundles relevant for the landscape

Individual practices target local impacts, but many challenges cannot be solved field-by-field. A landscape approach assesses off-site impacts and designs strategies at larger scales that account for local-landscape inter-

dependencies (e.g., upstream land use shaping downstream water availability, insecure tenure, missing markets). The goal is to identify and favour SLM bundles in a landscape for nature and people's long-term resilience.



Source: Sayer, J., Sunderland, T., Ghazoul, J. & Pfund, J.-L. (2013). Ten principles for a landscape approach. *Landscape Ecology*, 28, 1697-1710.

- Apply a **landscape approach** with its 10 principles adapted to local, case-specific conditions. It is people-centred (decisions shift to local actors), objectives are loosely defined and revisited, follows a non-linear planning, time horizons are longer than one project cycle, and it builds on continuous learning. These ten principles proposed by [Sayer et al. \(2013\)](#) remain the most widely recognised framework for implementing landscape approaches. More recent guidance focus on translating them into practice, with increased attention to governance, equity, adaptive management, monitoring and landscape justice.

- Use **operational building blocks** – multi-stakeholder engagement, environmental and economic focus, boundary setting, land tenure (incl. gender), financing, monitoring and learning, and cross-sectoral coordination. Success improves as more are deliberately addressed.
- Use **integrated land use planning** and multi-stakeholder negotiation at landscape level. Effective land use planning creates the conditions for SLM by allocating land according to its ecological potential and social and economic needs, assessing trade-offs between land-use options - a planning process which needs to be participatory and inclusive.
- **Plan early** for potential challenges regarding the landscape approach. Weak governance and long horizons may clash with short funding cycles. Use phased funding, early governance investment, and realistic timelines. Engage the private sector to close financing gaps while managing greenwashing and single-objective risks.
- **Keep social, equity, and justice dimensions central** rather than drifting toward carbon- or forest-only framings. Recent “landscape transition science” is a useful corrective as it calls for explicit engagement with pluralism, power and justice, and for patient, place-based partnerships over one-off project delivery.



Step 6. Creating an enabling environment

Many technically sound SLM interventions fail because the broader enabling environment is not supportive. A farmer may understand the benefits of agroforestry but be unwilling to invest if land tenure is insecure. A pastoralist may understand sustainable grazing principles but be unable to implement them due to restrictions on mobility. A community may restore degraded land but later lose access rights to external actors. Successful SLM therefore requires attention not only to technologies but also to institutions, incentives, capacities and governance.

Land Tenure : Secure land tenure is one of the strongest predictors of long-term investment in sustainable land management. Land users are generally more willing to invest when they have confidence that they will continue to benefit from those investments. However, tenure is often complex. Formal ownership, customary rights, seasonal use rights and collective management systems frequently coexist.

It is therefore necessary to : understand local tenure systems before intervening; recognise customary and informal rights; pay particular attention to women's land rights; and strengthen tenure security where feasible. *The Voluntary Guidelines on the Responsible Governance of Tenure (VGGTs)* provide an important framework for addressing land tenure challenges. The recent [UNCCD-FAO guidance](#) has also highlighted the importance of integrating tenure considerations into Land Degradation Neutrality implementation.

Capacities : Many sustainable land management practices require new knowledge and skills. Capacity development may be needed at multiple levels: at technical level for the direct land users, at governance level for the local institutions, at policy and inter-sectoral coordination level for the governments, and/or within the research and knowledge sharing levels.

Extension services : Extension services play a crucial role in scaling SLM through the increased outreach and support to capacity building. Effective extension systems provide technical advice, facilitate peer learning, connect farmers with markets, and support experimentation and innovation. Farmer Field Schools, demonstration sites and digital platforms have all proven effective in promoting sustainable land management practices.

Policies : Policies can either encourage or discourage sustainable land management. Examples of supportive

policies include recognition of customary tenure, incentives for restoration, integration of SLM into agricultural strategies, landscape planning frameworks, and climate adaptation strategies. Conversely, policies promoting unsustainable expansion or short-term exploitation may undermine SLM efforts. It is therefore necessary to analyse policy environments and identify opportunities for alignment with national priorities.

Incentives : Adoption of SLM often involves short-term costs while the benefits are usually seen more on the long term. To bridge this gap, incentives can provide solid support, and be anchored within policies or within private sector engagement schemes. Potential mechanisms include: grants, input support, payments for ecosystem services, carbon credits, biodiversity credits, tax incentives, and certification schemes. In any case, incentives should be carefully designed to encourage long-term behavioural change rather than short-term dependency. Where appropriate, market development can support the economic viability of SLM practices.

Financing : Scaling SLM requires investment. Potential financing sources can include: public budgets such as subsidies and incentives, donor programmes, development finance institutions, private investment, climate and/or biodiversity finance, and blended finance mechanisms. Increasingly, countries are seeking to align SLM investments with climate, biodiversity and restoration commitments to access multiple financing streams, and improve the cost-benefit of the interventions.

Gender : Gender inequalities influence access to land, resources, information and decision-making. Women frequently play central roles in food production and household nutrition while facing significant barriers to land ownership and control. Interventions should: analyse gender dynamics as part of the stakeholder analyses; promote women's participation; strengthen women's land rights; and ensure equitable benefit sharing.

Conflict sensitivity : Competition over land, water and natural resources can contribute to social tensions and conflict. SLM interventions should therefore: understand conflict dynamics, avoid reinforcing inequalities, promote inclusive decision-making, and strengthen mechanisms for dialogue and dispute resolution. In fragile contexts, SLM can contribute to peacebuilding by reducing resource competition and strengthening local governance.

Risk of greenwashing : As interest in climate and biodiversity finance grows, there is increasing risk that projects are labelled as “sustainable” without genuinely delivering environmental or social benefits. Examples include: monoculture tree plantations promoted as restoration; carbon projects that undermine local rights;

or biodiversity initiatives that ignore livelihoods. True SLM requires balancing environmental integrity, social equity and economic viability. Interventions should therefore be assessed against all three dimensions rather than relying on a single indicator or objective.

Step 7. Monitoring, learning and scaling

Monitoring is essential to demonstrate results, support adaptive management and inform scaling efforts. Because SLM seeks to achieve multiple outcomes simultaneously, it is important to build a monitoring framework which balances across the different environmental, economic, social and governance dimensions.

Such indicators could include :

- **Environmental & geophysical indicators** : Soil organic carbon ; Vegetation cover ; Erosion rates ; Water infiltration ; Land productivity ; Biodiversity indicators ; Land cover change.
- **Economic indicators** : Yield changes ; Household income ; Production costs ; Cost-benefit ratios ; Return on investment ; Market access.
- **Social indicators** : Adoption rates ; Women’s ; Participation ; Youth engagement ; Household food security ; Dietary diversity ; Perceptions of benefits.

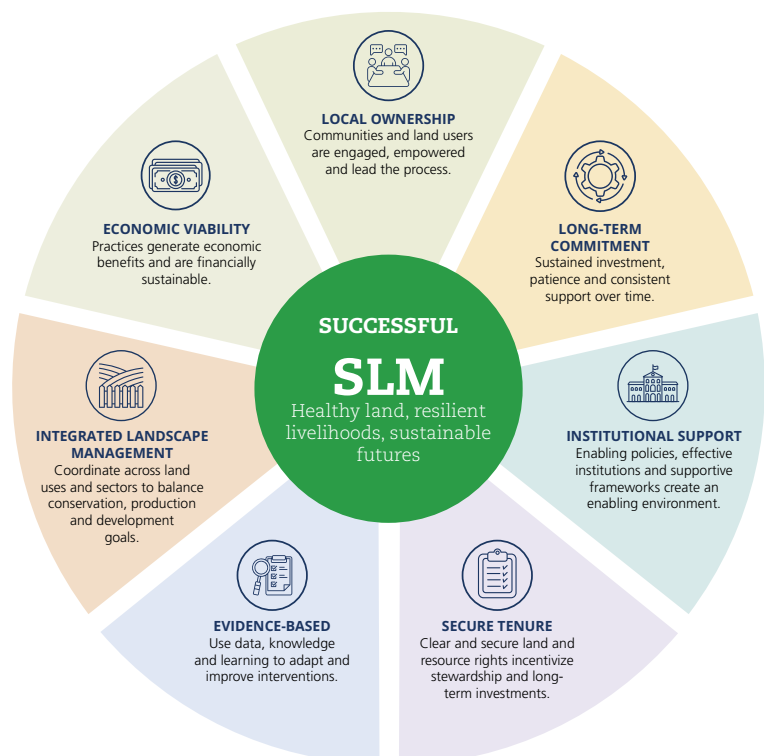
- **Governance indicators** : Functioning multi-stakeholder platforms ; Land use plans implemented ; Tenure security ; Participation in decision-making ; Conflict resolution mechanisms.

Learning and knowledge sharing is an integral part of all process, and is here particularly important as SLM is highly context-specific. Successful experiences often need adaptation before replication. Projects should encourage: adaptive management, farmer-to-farmer learning, peer exchanges; learning alliances, periodic reviews, and documentation of good practices.

Scaling successful SLM practices however requires more than demonstrating technical effectiveness. It generally requires a full enabling environment, involving: supportive policies, institutional capacity, financing, market incentives, extension services and stakeholder ownership. Documenting and sharing good practices can also play an important role in scaling SLM across countries and regions.

Key take-away – What makes SLM successful ?

In short, SLM succeeds when it is people-centred, economically viable, institutionally supported, and implemented as a long-term landscape process rather than as a short-term technical intervention. It is a development approach, not just an environmental response only, allowing to embed the principle that prevention is more effective than restoration.



3. Selected key partners and resources

Frameworks, knowledge platforms and tools

UNCCD : The United Nations Convention to Combat Desertification is the primary global policy framework addressing land degradation and desertification. It acts as the custodian agency for SDG indicator 15.3.1 and leads global efforts to achieve Land Degradation Neutrality (LDN). Through its Science-Policy Interface, Global Mechanism and national reporting processes, the UNCCD provides policy guidance, monitoring frameworks and access to technical resources.

Particularly useful resources include:

- [Land Degradation Neutrality conceptual framework](#)
- [LDN Target Setting Programme](#)
- [Global Land Outlook](#)
- [Drought Toolbox](#)
- [Land Tenure Toolbox](#)

WOCAT : The World Overview of Conservation Approaches and Technologies is the leading global network dedicated to Sustainable Land Management. Established in 1992 with long-standing support from SDC, WOCAT promotes the documentation, sharing and scaling of SLM knowledge and good practices. The WOCAT database currently contains more than 2,000 documented practices from over 100 countries, covering a wide range of agroecological zones and land use systems.

Particularly useful resources include:

- The world's largest [Global SLM database](#) of documented SLM technologies and approaches;
- [SLM](#) and [LDN](#) Training material;
- [Tools](#) and [Apps](#) for mapping land degradation and restoration opportunities;
- [Guidance](#) on scaling and policy integration;
- Standardised methodologies for documenting and evaluating practices.

FAO : The Food and Agriculture Organization of the United Nations provides extensive technical expertise on sustainable agriculture, soils, forestry, water management, tenure and food systems. FAO also hosts several important knowledge platforms and technical tools.

Particularly relevant areas of work include:

- [Sustainable soil management](#);
- [Agroecology](#), [Climate-smart agriculture](#) and [Pastoralism and rangeland management](#);
- [Land restoration](#);
- [Land tenure governance](#).

CGIAR : CGIAR is the world's largest agricultural research partnership and plays a central role in generating evidence on sustainable land management, landscape approaches, agroecology, climate adaptation and restoration. CGIAR's work on multifunctional landscapes, climate resilience, restoration and food systems provides important evidence for programme design.

Particularly relevant CGIAR centres include : CIFOR-ICRAF ; ICARDA ; IWMI ; Alliance of Bioversity International and CIAT ; ILRI.

Trends.Earth : Trends.Earth is a geospatial monitoring platform for land degradation and restoration, which enables users to analyse : land cover change; productivity dynamics; soil organic carbon trends. The tool notably supports SDG 15.3 reporting and LDN monitoring.

ROAM : The Restoration Opportunities Assessment Methodology, developed jointly by IUCN and the World Resources Institute, helps identify and prioritise restoration opportunities across landscapes through participatory processes. It is useful for : Restoration planning; Landscape approaches; and Investment prioritisation.

Regional initiatives

Great Green Wall : The Great Green Wall is one of Africa's flagship restoration initiatives, spanning the Sahel from Senegal to Djibouti. It promotes notably restoration, climate resilience, livelihood improvement, and sustainable food systems.

CACILM : The Central Asian Countries Initiative for Land Management supports sustainable land management across Central Asia through regional cooperation, policy development and knowledge exchange.

Initiative 20x20 : A major restoration initiative in Latin America and the Caribbean that seeks to restore degraded landscapes while generating social, economic and environmental benefits.

Annexe: Examples from around the world

Diverse SLM solutions:

Multi-storey intercropping with coffee and fruit trees - Vietnam

Robusta coffee is intercropped with pepper vines and fruit trees, increasing total planting density and leading to higher land equivalent ratios compared to monocropping, thereby increasing land use efficiency, profitability, soil protection and resilience.

See: <https://wocat.net/en/database/>



Organic agriculture with reduced tillage – Ukraine

This organic agriculture technology combines reduced tillage with organic farming practices to enhance soil health, increase carbon sequestration, and maintain sustainable agricultural productivity.

See: <https://wocat.net/en/database/technologies/7440/>

Biochar production and application to improve soils - Benin

Biochar is generated through the process of pyrolysis (partial combustion) of plant biomass like corn cobs or forest residues, in a heat-intensive, oxygen-free or low-oxygen environment. By spreading biochar on fields, the objective is to enhance the nutrient-holding capacity and structure of soil, and thereby to improve plant production.

See: <https://wocat.net/en/database/technologies/6665/>





Soil and water conservation and pasture management through check dams and fencing - Somalia

The technology involves enclosing a degraded area to exclude livestock and human disturbance, allowing natural regeneration of vegetation. Structural measures include check dams constructed across erosion-prone gullies to slow runoff, trap sediments, and improve soil moisture.

See: <https://wocat.net/en/database/technologies/7752/>

Successful landscape approaches :

The Nature Conservation Project (NCP), North Macedonia

This SDC project operated in three phases from 2012 to 2023. With the goal of conserving the diverse flora and fauna of the Breglanica watershed, it adopted a [landscape approach](#) that brought together all stakeholders. Detailed participatory planning allowed for the conservation of the most important areas for biodiversity at the same time as actively creating opportunities for local people to gain an economic livelihood, enjoy pleasant scenery and preserve their cultural heritage. One project activity was support for healthy, “nature-friendly” food production, with a focus on the value chains of rice and honey.



Agriculture Landscape Approach in SLM – Bhutan

An integrated, whole-community strategy implemented in Namlaythang village, where 55 resettled households applied SLM technologies (terracing, stone bunds, hedgerows, check dams, plantations) and climate-resilient practices to prevent land degradation, reducing soil erosion and nutrient loss while improving soil health, food security and farmer empowerment at the landscape scale.

See: <https://wocat.net/en/database/approaches/6848/>



Swiss examples:

Sustainable livestock management in Ethiopia

The SDC Natural Resource Management (NRM) Borana Project in Southern Ethiopia intervened in a manner that sought to combine the traditional knowledge of [Borana pastoralists](#) with the development objectives of the government administration. [Traditional water management](#) and [pasture management](#) was enhanced with modern technology and inputs, placing focus on greater equity. [Gender issues](#) were also especially considered. In 2023, the project was incorporated into a [Regional Livestock Management Project](#) for the Horn of East Africa.

Rural Advisory Services in Laos

The LURAS project builds on previous SDC experience supporting agricultural extension services in Lao PDR spanning over 22 years. Over the past few decades, agriculture in the uplands changed radically from largely subsistence to more commercially oriented production. In the process, agrochemicals have become widely used, forest permanently cleared, water supplies altered, and biodiversity threatened. Accordingly, the focus has shifted from food production alone to sustainable resource management. One example is [coffee production under natural](#) forest; another is a campaign [against excessive herbicide](#) use in maize production. The project has been successful in facilitating farmer groups, allowing them to share agricultural information (ranging from pest control to market prices) and to have a voice up to national level. Recognising the likely major impacts of climate change in the Lao uplands, in its final years of operation LURAS has introduced climate resilient extension development.



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