



United Nations
Convention to Combat
Desertification

SCIENCE-POLICY BRIEF

Integrated Land Use Planning and Integrated Landscape Management for Land Degradation Neutrality



Country Parties gathered at the UNCCD COP14 requested that the UNCCD Science-Policy Interface (SPI) provide “science-based evidence on the potential contribution of integrated land use planning (ILUP) and integrated landscape management (ILM) to positive transformative change, achieving land degradation neutrality (LDN) and addressing desertification, land degradation, and drought issues” (Decision 18/COP.14).

ILUP refers to assessing and allocating land-based resources across a landscape while accounting for differing uses and demands from different users. It requires the coordination of planning and management across sectors concerned with land resources and their use within a spatial administrative

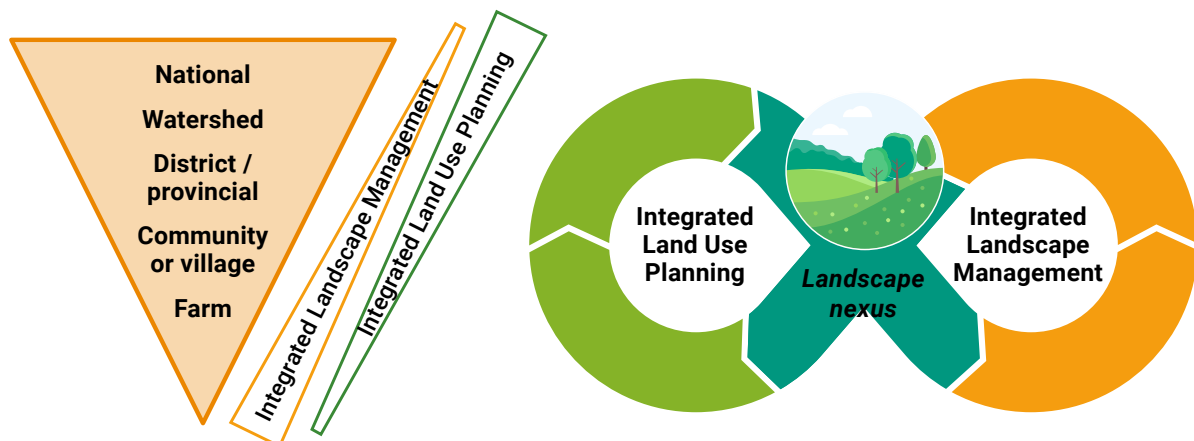
or geographic unit (e.g., a catchment, region, and/or country). The purpose of ILUP is to identify the combination of land uses that can meet stakeholders’ needs while safeguarding natural resources for the future. By examining all land uses in an integrated manner, ILUP assesses trade-offs between land use options. It links social and economic development with environmental protection and enhancement to help achieve sustainable land management. ILUP is an umbrella term that includes more specific approaches such as—but not limited to—territorial planning and spatial planning.

ILM refers to long-term collaboration among different groups of stakeholders to achieve the multiple objectives required from the landscape. Five key features—all of which facilitate participatory development processes—characterize ILM: 1) shared or agreed upon management objectives that encompass multiple landscape benefits; 2) field practices that are designed to contribute to multiple objectives; 3) management of ecological, social, and economic interactions for realizing positive synergies and mitigating negative trade-offs; 4) collaborative, community-engaged planning, management, and monitoring processes; and 5) the re-configuration of markets and public policies to achieve diverse landscape objectives.

Both ILUP and ILM have integral roles to play in achieving LDN. Traditionally, land use planning mainly involved the technical process of allocating land use rights according to land suitability. By comparison, ILUP allows a consideration of the diverse interests in the land that are increasingly recognized as key to environmental targets and to socioeconomic and cultural values (Figure 1). ILM is concerned with the development of management strategies for landscapes rather than with a determination of how they are spatially parceled or zoned.

FIGURE 1

The scale of ILUP and ILM (left) and the continuum of ILUP-ILM (right). Governance at different scales (i.e., national to local) of ILUP is needed to assess and allocate land resources across a landscape. ILM fosters collaboration across actors, sectors, and scales in a manner that is essential to ILUP.



The transformative potential of ILUP and ILM in achieving LDN

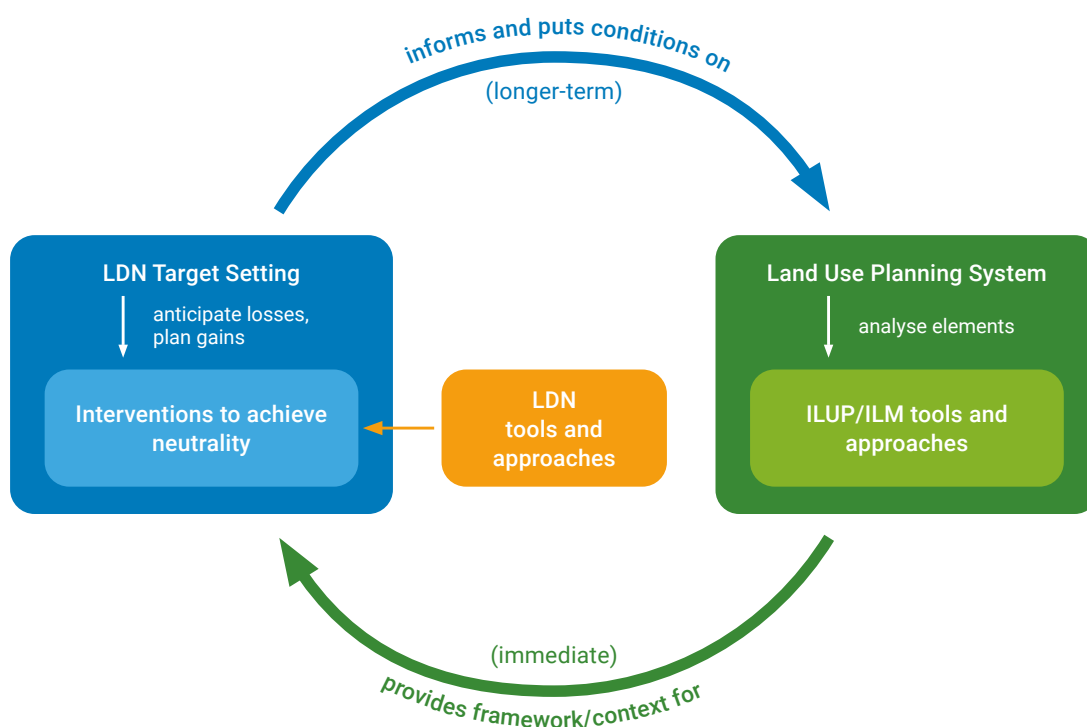
The neutrality principle—also known as the zero net principle—requires landscape planning and management efforts that go beyond a consideration of individual land parcels and sustainable land management practices to embrace national planning. This allows unavoidable losses to be compensated and landscape diversity (e.g., socioeconomic, ecological, and cultural) to optimize the LDN response hierarchy (i.e., avoiding, reducing, and reversing land degradation). The neutrality principle permits trade-offs among competing interests across a landscape and helps optimize synergies between the mandates of the three Rio Conventions for which land is central (i.e., UNFCCC, CBD and UNCCD; [Figure 2](#)).



Achieving LDN requires more than just scaling up sustainable land management. Realizing the neutrality principle is most effective when it is integrated (alongside actions relevant to the other Rio Conventions and UN Sustainable Development Goals) into existing national planning systems that govern the use of natural resources for development.

FIGURE 2

Transformative change can be operationalized by identifying entry points for LDN into national planning systems. The land use planning system of a country (right) provides the context in which LDN targets are set and implemented (left). It determines the suite of ILUP-ILM tools and approaches most suitable for LDN target setting and implementation. Specific LDN tools and approaches can also be employed outside of a land use planning system (centre) but without the benefit of capitalizing on synergies with other planning processes.



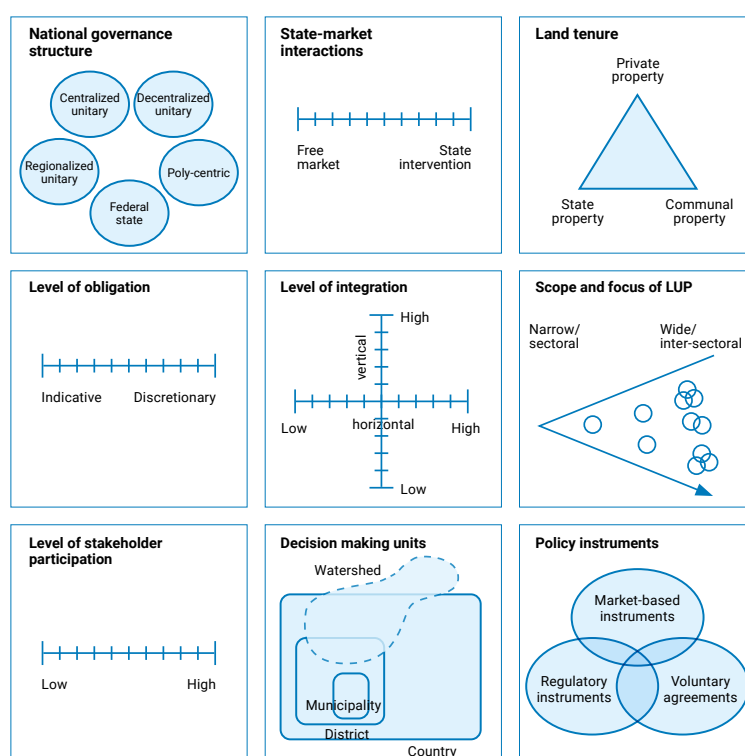
A common typology of planning systems: key elements

National land use planning systems provide the immediate context in which LDN targets are set and implemented. The relationship between these national planning systems and how LDN is being pursued in a country will determine the suite of ILUP-ILM tools and approaches most suitable for LDN target setting and implementation.

A common typology of planning systems can be characterized by nine key elements (Figure 3). In this typology the characteristics (i.e., the type, strength, quantity and configuration) of each element can assist project developers in identifying entry points for the coherent design and implementation of LDN interventions.

FIGURE 3

Summary figure of the nine elements of land use planning systems. The value (i.e., the type, strength, quantity, and configuration) of these elements can assist project developers in identifying entry points in the planning system for the coherent design and implementation of LDN integration.



The shared goals of LDN and ILUP-ILM

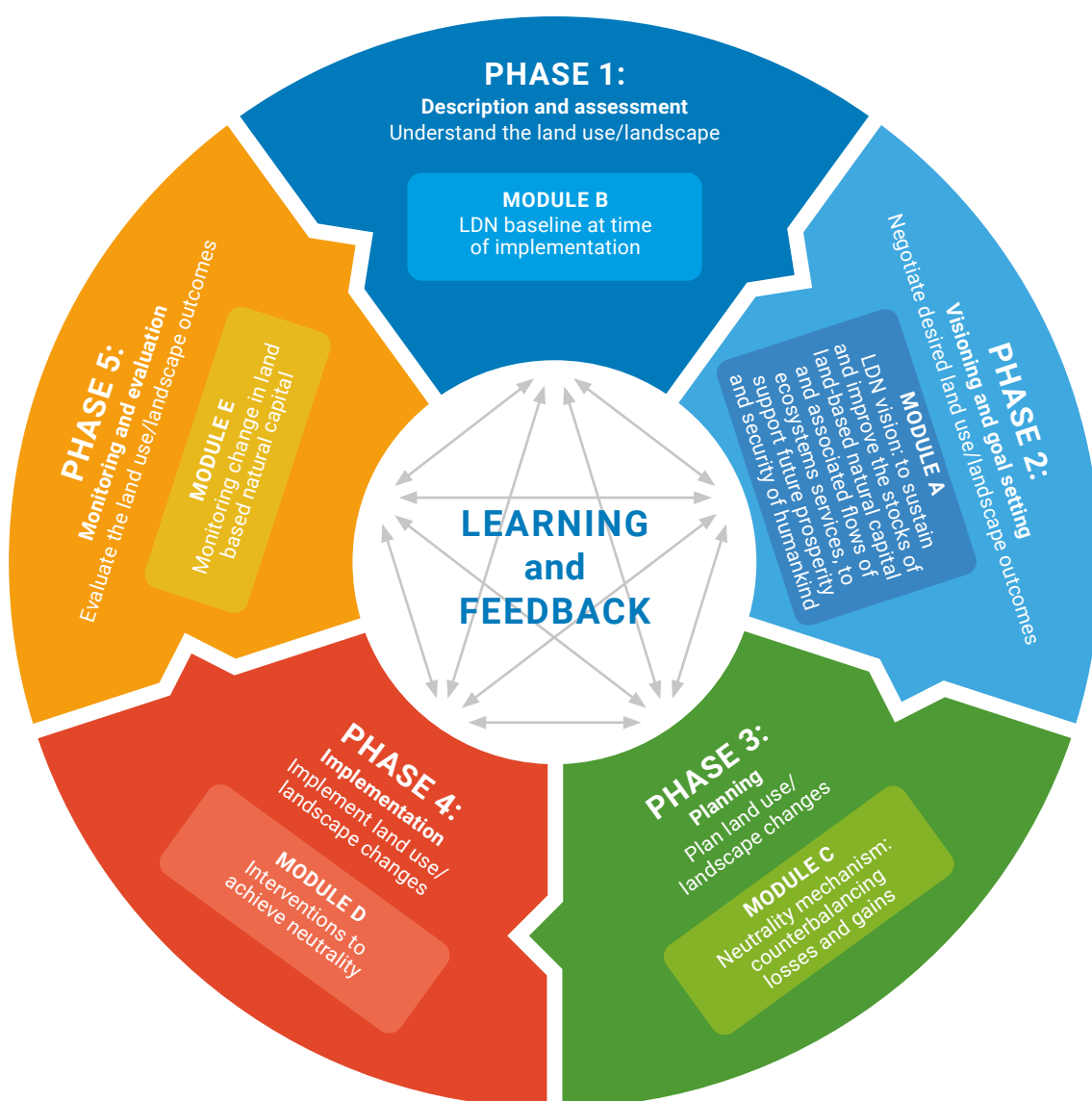
The integration of LDN into the land use planning system of a country must be achieved through a national, long-term vision that integrates the interests of multiple sectors with different demands for land resources. This vision requires sufficient financial support and a land governance system that is designed to enable the achievement of LDN. The land governance system should secure land tenure and equitable access to land for men and women and ensure regulatory and policy alignment so all dimensions of the enabling environment work effectively together. As working effectively together entails the concurrent pursuit of economic, sociocultural, and environmental targets within land governance frameworks, LDN and ILUP-ILM processes can be described as sharing many common goals. This commonality opens up several entry points for LDN into national planning systems that include ILUP-ILM processes. These entry points relate to land zoning, financial measures (e.g., payments for ecosystem services), agricultural, conservation and landscape regeneration extension services, sustainable land management training, and regulatory instruments (e.g., through secure land tenure). Importantly, entry points differ depending on the interests and influence of decision-making powers.

Linking the phases of cyclical ILUP-ILM planning processes with the LDN framework

There are five generic phases of cyclical ILUP-ILM planning processes: (1) description and assessment, (2) visioning, (3) planning, (4) implementation, and (5) monitoring and evaluation (Figure 4). The boundaries between these phases may be blurred, and, depending on the planning systems, not all phases are necessarily distinctive. Feedbacks and learning occur among all phases (thin arrows), sometimes disrupting or shortcutting the cyclical process. For example, obstacles arising in the implementation phase (e.g., a new actor is added, unforeseen pressures are applied from interest groups, or natural disasters occur) may require going back to the assessment and planning phases to accommodate the new information or situation. Similarly, when implementing LDN, the monitoring and evaluation phase contributes to learning so that mid-course adjustments can be taken. Thus, the results from the monitoring and evaluation phase of LDN should feed into subsequent planning processes in the form of new knowledge and understanding, contributing to future land use planning decisions.

FIGURE 4

The five phases of a cyclical ILU-ILM planning process and entry points for the modules of the LDN scientific framework (i.e. rectangles in the outer circle). While general ILUP-ILM processes are cyclical, feedback and learning happen among all phases.



Tool groups to support LDN implementation in ILUP-ILM

Figure 5 illustrates a broad categorization of groups of available tool types. An analysis based on the functionalities of each tool group reveals how these groups (e.g., optimization, forward-looking, etc.) can support countries to integrate LDN into ILUP-ILM processes.

Various tool groups can be used to integrate different modules of the LDN framework into particular phases of ILUP-ILM planning cycles (Figure 6).

The integration of LDN into **the assessment phase** of an ILUP-ILM cycle includes determining the land degradation status and evaluating the socioeconomic environment. For this, indicator-assessment and rapid-appraisal tools are suitable.

In **the visioning phase**, future projections of land degradation and possibilities for restoration are explored using the multi-criteria analysis and forward-looking tool groups. Specific locations and suitable actions for avoiding land degradation and/or undertaking land restoration or land rehabilitation can be considered in **the planning phase** with support from process-oriented, optimization, and forward-looking tools.

The implementation phase carries out actions negotiated with stakeholders for avoiding, reducing, or reversing land degradation. Process-oriented, optimization, and multi-criteria analysis tools can support this phase.

Lastly, in **the monitoring phase**, indicator-assessment and rapid-appraisal tools can provide evidence about whether development follows the desired trajectories or if actions should be adjusted following adaptive management that characterizes ILM.

FIGURE 5

A classification of tool groups along two axes capturing differences between participatory and expert analysis and temporal dynamics. Examples of tools are given in *italics*.

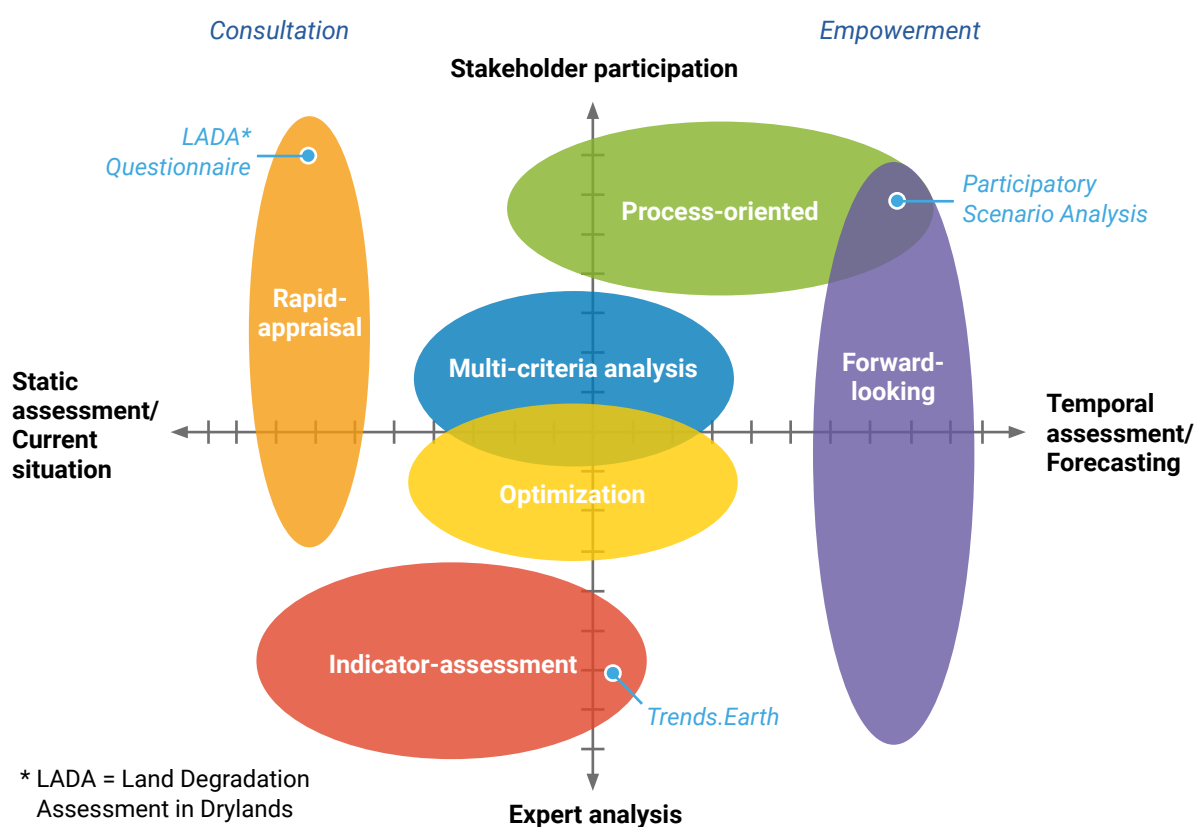
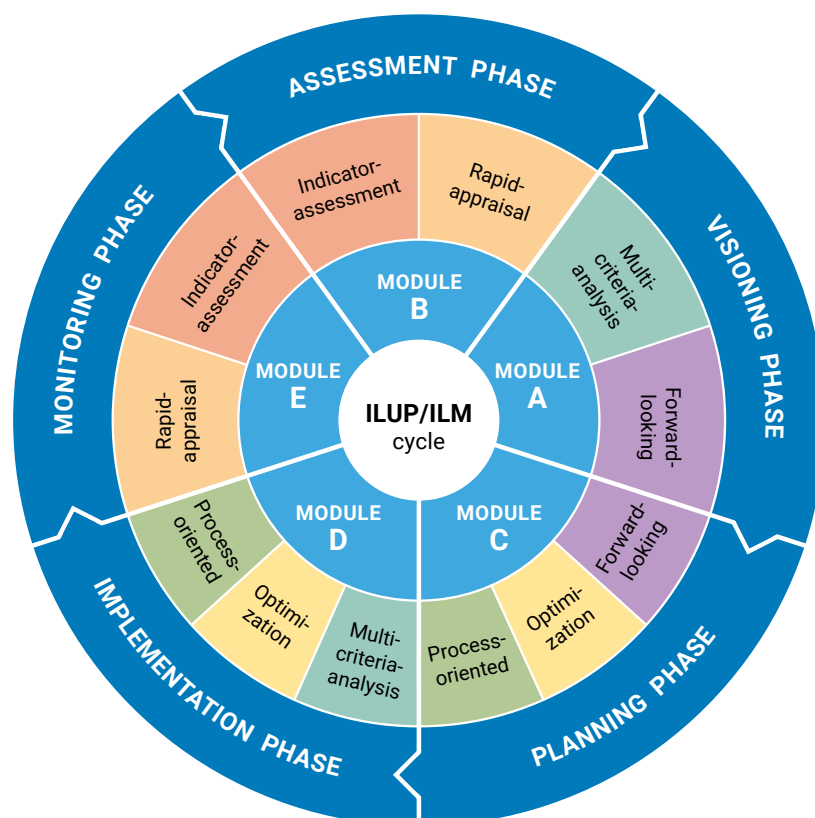


FIGURE 6

A schematic diagram illustrating the ILUP-ILM cycle (Chapter 4), its connection with the modules of the LDN conceptual framework, and tool groups that can support LDN integration into particular phases of the ILUP-ILM planning cycle (outer circle).




What can policy makers do right now?

The illustrative examples show that ILUP and ILM can help reconcile multi-objective land uses, seek LDN (i.e., by balancing gains with anticipated losses), carefully consider trade-offs, and navigate possible conflicts between sectoral interests and potential uses (e.g., conservation and productivity).

In the context of working to achieve or exceed LDN targets, this brief presents action-oriented proposals for policy and decision makers (and other actors involved in land use planning and landscape management). These proposals are intended to help develop inclusive measures for ILUP-ILM that encourage positive transformative change towards a better, land degradation-neutral future.

Policy and decision makers can achieve the following:

1. Provide a more central role for ILUP and ILM in developing national policies to address desertification/land degradation and drought, to help achieve LDN, and to support efforts that address the interlinked challenges underpinning Sustainable Development Goals.
2. Use ILUP and ILM as vehicles to create synergies and policy coherence among the three Rio conventions, including the post-2020 global biodiversity framework and the Paris Agreement, while implementing LDN targets.
3. Integrate LDN target-setting and implementation into national and subnational ILUP and ILM processes.
4. Strengthen cross-sectoral governance and land use planning for transformative change to support efforts to address desertification/land degradation and drought and to achieve LDN.
5. Incentivize collaboration between academic/research and practitioner communities specializing in land use planning to develop new or tailor existing tools and approaches.
6. Promote national knowledge generation and sharing of approaches and tools to support ILUP and ILM to achieve LDN.



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Integrated Land Use Planning (ILUP) and Integrated Landscape Management (ILM) have integral roles to play in achieving land degradation neutrality (LDN) and in reducing decision uncertainties associated with planning for neutrality.

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UNCCD-SPI related publications:

- P.H. Verburg, G. Metternicht, E. Aynekulu, X. Deng, K. Schulze, S. Herrmann, N. Barger, V. Boerger, F. Dosdogru, H. Gichenje, M. Kapović-Solomun, Z. Karim, R. Lal, A. Luise, B.S. Masuku, E. Nairesiae, N. Oettlé, A. Pilon, O. Raja, N.H. Ravindranath, R. Ristić and G. von Maltitz. 2022. *The Contribution of Integrated Land Use Planning and Integrated Landscape Management to Implementing Land Degradation Neutrality: Entry Points and Support Tools*. A Report of the Science-Policy Interface. United Nations Convention to Combat Desertification (UNCCD), Bonn, Germany.
- P.H. Verburg, G. Metternicht, C. Allen, N. Debonne, M. Akhtar-Schuster, M. Inácio da Cunha, Z. Karim, A. Pilon, O. Raja, M. Sánchez Santivañez, and A. Şenyaz. 2019. *Creating an Enabling Environment for Land Degradation Neutrality and its Potential Contribution to Enhancing Well-being, Livelihoods and the Environment*. A Report of the Science-Policy Interface. United Nations Convention to Combat Desertification (UNCCD), Bonn, Germany.
- B. J. Orr, A. L. Cowie, V. M. Castillo Sanchez, P. Chasek, N. D. Crossman, A. Erlewein, G. Louwagie, M. Maron, G. I. Metternicht, S. Minelli, A. E. Tengberg, S. Walter and S. Welton. 2017. *Scientific Conceptual Framework for Land Degradation Neutrality*. A Report of the Science-Policy Interface. United Nations Convention to Combat Desertification (UNCCD), Bonn, Germany.

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