How can Land Degradation Neutrality contribute to positive transformation?

Barron Joseph Orr, Lead Scientist
The IPCC (2014) has defined transformation as a change in the fundamental attributes of natural and human systems.
Why do we need positive transformation?

- **Land is finite** in quantity. Competing demands for its goods and services are increasing pressures on land resources in virtually every country.
- **Over 1.3 billion people trapped** on degrading agricultural land
- **Land transformation in rural areas** is unprecedented in terms of both speed and scale
- **70 per cent of agricultural land** is now used to grow feed crops and livestock production
- **Consumption** of natural resources **doubled in 30 years**
- **3 planets to meet 2050 natural resource demands**

https://www.unccd.int/actions/global-land-outlook-glo
...because land (and time) are running out

• **1 million species** are threatened by extinction largely because **75% of the land surface has been altered**

• These *(negative)* **transformational changes** are creating the conditions for a biological evolution **so rapid**, it is **visible just over a few years**.

• The **conversion of land** for agriculture is the leading driver of land-use change, with **meeting the demand for food, feed, fibre and bioenergy production in the lead. Forests, wetlands and grasslands and savannas are paying the price.**

https://www.ipbes.net/news/ipbes-global-assessment-preview
Land can accelerate many SDGs...

...but SDGs compete for the same land resources.
How can navigate the inevitable SDG trade-offs?
A balanced approach is needed.

- One that anticipates new degradation even as we plan to reverse past degradation
- One that considers tradeoffs among competing interests across the landscape

LDN provides the framework for this.
Land Degradation Neutrality (LDN)

“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 and ecosystems”

*UNCCD COP12 October 2015*
Land Degradation Neutrality

- LDN seeks to maintain natural capital and the ecosystem services that flow from it
- LDN is about keeping land in balance
- Keeping land in balance provides the basis for keeping food, carbon and biodiversity in balance as well.
- LDN is about achieving multiple benefits
- LDN provides a framework with multiple entry points which facilitate optimizing the synergies among the Rio Conventions (Climate Change, Biodiversity, Land Degradation)

The Vision of LDN

Human wellbeing
Food security
Healthy ecosystems

The goal of LDN is maintaining or enhancing the land resource base - in other words, the stocks of natural capital associated with land resources and the ecosystem services that flow from them.
Neutrality = *no net loss* compared to the reference state (baseline)

Baseline is NOW (current condition)

**Counterbalancing** future land degradation (anticipated *losses*) through planned measures to achieve equivalent *gains* elsewhere within the same *land type*

“like for like”
LDN planning (which begins with target setting) involves anticipating where degradation is likely so that the optimal mix of interventions across the landscape to achieve neutrality can be pursued.

- Occurs at multiple levels
- Leverages existing land use planning

**Integrated land use planning**
Optimizing land use planning and management decisions across the landscape

A Map of Land Types

- **A1**: Land Area: 15,000 ha, Use: short grazing period, Status: Not Degraded
- **A2**: Land Area: 25,000 ha, Use: grazing excluded, Status: Not Degraded
- **A3**: Land Area: 10,000 ha, Use: long grazing period, Status: Degraded
- **A4**: Land Area: 40,000 ha, Use: med. grazing period, Status: Degraded
- **A5**: Land Area: 10,000 ha, Use: short grazing period, Status: Not Degraded

**Context**

- **A1**: Grazing period extended
- **A2**: Livestock exclusion maintained
- **A3**: Long grazing period continued
- **A4**: Sustainable grazing management introduced
- **A5**: Urban expansion

**Preparation for Integrated Land Use and Management Planning (t0)**

- Assessment of land potential, condition, resilience and socio-economic status, including the baseline (t0) measurement of the metrics of land-based natural capital.

**Decisions**

- **A1**: Negative change anticipated
- **A2**: No change anticipated
- **A3**: Negative change anticipated
- **A4**: Positive change anticipated
- **A5**: Negative change anticipated

**Anticipated Change In Metrics (t1)**

- **A1**: Loss: 15,000 ha degradation anticipated
- **A2**: Stable: 25,000 ha no change anticipated
- **A3**: Loss: 10,000 ha degradation anticipated
- **A4**: Gain: 40,000 ha improvement anticipated
- **A5**: Loss: 10,000 ha degradation anticipated

**Projected Gains vs. Losses (t1 vs. t0)**

Legend:

- "O" All metrics are anticipated to remain stable
- "↑" Positive change anticipated (in at least one metric, others stable)
- "↓" Negative change anticipated (in at least one metric)
- "No change anticipated" Stable (no change)
- "Degraded land or anticipated negative change"
- "Not degraded land or anticipated positive change"

Land Degradation Neutrality Status Anticipated

Net Gain: 5,000 ha
Response Hierarchy

Prevention is better than cure

Avoid: Land degradation can be avoided by addressing drivers of degradation and through proactive measures to prevent adverse change in land quality of non-degraded land and confer resilience, via appropriate regulation, planning and management practices.

Reduce: Land degradation can be reduced or mitigated on agricultural and forest land through application of sustainable management practices (sustainable land management, sustainable forest management).

Reverse: Where feasible, some (but rarely all) of the productive potential and ecological services of degraded land can be restored or rehabilitated through actively assisting the recovery of ecosystem functions.
Integrated land use planning is the key to achieving LDN

Using the best information available

- Land degradation status
- Land potential
- Resilience
- Socio-economic data
- Gender considerations

In order to

- Optimize the spatial mix of possible interventions
- Navigate trade-offs
It is about having the right information...
...to do the right thing in the right place at the right scale
Land potential is the inherent, long-term potential of the land to sustainably generate ecosystem services, which reflects the capacity and resilience of the land-based natural capital, in the face of ongoing environmental change.

http://www.resourcepanel.org/reports/unlocking-sustainable-potential-land-resources
Assessing land potential is part of most land and soil evaluation methodologies.

Henry, Murphy, Cowie, 2018
Appropriate land use depends on the underlying land potential

WARNING: Similar soils in similar climate conditions may not mean similar land potential

Similar, but different!
Objective: match land use with its potential to maximize return on investment

Slide courtesy of Jeff Herrick and the LandPKS initiative
The SLM cornerstone of LDN

Sustainable Land Management can be defined as the use of land resources, including soils, water, animals and plants, for the production of goods to meet changing human needs, while simultaneously ensuring the long-term productive potential of these resources and the maintenance of their environmental functions.

Source: WOCAT
Multiple benefits of soil carbon

- Stores atmospheric C
  - Cost effective climate mitigation measure
- Improved water holding capacity
  - Buffer against drought
- Improved soil fertility
  - Nutrient store and supply
  - Improved productivity / yields
- Improved soil structure
  - Improved workability
- Improved soil habitat soil organizations
  - Improved biodiversity

What should we measure?

For harmonization of LDN monitoring, 3 essential variables are measured in all countries.

Countries also measure any other relevant indicators.
Monitoring and learning

- Global indicators: Land cover, land productivity and soil organic carbon
- “One out, all out”, area basis
- Complemented by:
  - Locally-relevant indicators
  - Process indicators
  - Outcome indicators
- Verified using local knowledge (multi-stakeholder platforms nested across scales)
Selection of indicators based on ecosystem functions that provide ecosystem services

- Land Degradation Neutrality
- Suite of measured values
- Derived Indicators (metrics)
- Land-based Ecosystem Services (ES)
- Land-based supporting process

The framework does not prescribe how to measure the indicators.

It recommends effort to achieve consensus on common criteria and standards to harmonize application.

Monitor indicators relative to the baseline...
Default Land Cover data

- Tree covered areas
- Grassland
- Cropland
- Wetland
- Artificial surfaces
- Other land
- Water bodies
Default land productivity dynamics data
Default global soil organic carbon data
The combination = SDG indicator 15.3.1

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”

SDG Indicator 15.3.1:
Proportion of land that is degraded over total land area.
Guiding principles

Principles are provided to govern application of the framework and to help prevent unintended outcomes during implementation and monitoring of LDN.

These principles are central to how LDN can encourage responsible governance and help safeguard land tenure.
Guiding Principles (1)

Principles govern application of the framework, and prevent unintended outcomes during implementation of LDN

1. Maintain or enhance land-based natural capital.
2. Protect the rights of land users.
3. Respect national sovereignty.
4. For neutrality, the LDN target equals (is the same as) the baseline.
5. Neutrality is the minimum objective: countries may be more ambitious.
6. Integrate planning and implementation of LDN into existing land use planning processes.
7. Counterbalance anticipated losses in land-based natural capital with interventions to reverse degradation, to achieve neutrality.
8. Manage counterbalancing at the same scale as land use planning.
9. Counterbalance “like for like” (within the same land type). Not between conservation and production areas.
10. Balance economic, social and environmental sustainability.
11. Base land use decisions on multi-variable assessments, considering land potential, land condition, resilience, social, cultural and economic factors.

12. Apply the response hierarchy: Avoid > Reduce > Reverse.

13. Apply a participatory process including stakeholders in designing, implementing and monitoring LDN.

14. Reinforce responsible governance: protect human rights, including tenure; ensure accountability and transparency.

15. Monitor using the three UNCCD land-based global indicators: land cover, land productivity and carbon stocks.

16. Use “one-out, all-out” to interpret the three global indicators.

17. Use national and sub-national indicators to aid interpretation and fill gaps.

18. Apply local knowledge to verify and interpret monitoring data.

19. Apply a continuous learning approach: anticipate, plan, track, interpret, review, adjust, create the next plan.
The Scientific Conceptual Framework for LDN was endorsed by all 197 UNCCD Parties in COP 13

Decision 18/COP.13

Follow-up on the work programme of the Science-Policy Interface for the biennium 2016–2017

The scientific conceptual framework for land degradation neutrality

1. **Endorses** the scientific conceptual framework for land degradation neutrality summarized in document ICCD/COP(13)/CST/2 and **encourages** further conceptual elaboration and practical verification;

2. **Calls upon** Parties pursuing land degradation neutrality to consider the guidance provided by the scientific conceptual framework for land degradation neutrality and observe the principles summarised in document ICCD/COP(13)/CST/2, taking into account national circumstances;
• A tool to help country-level project developers and their technical and financial partners to design effective LDN interventions.
• The checklist is optional, not prescriptive.
• It provides a pragmatic and scientifically grounded guide that encourages innovation.
• It aims to ensure consistency and completeness in the implementation of LDN, and to lead to a positive transformation.

Countries are embracing the LDN target

122 countries have committed to set LDN targets so far

83 countries have officially validated their targets

51 countries targets adopted by their governments
Main achievements of LDN Target Setting

- Facilitated national **stakeholder consultation process**
- **Identified drivers** of land degradation
- Analyzed legal and institutional **environment**
- Identified comprehensive technical and policy **LDN measures**
- Identified opportunities to **mainstream** LDN and develop **LDN Transformative Projects and Programmes**

- **80+ countries developed leverage plans**
- **90+ countries established LDN national working groups**

*LDN targets are: national in scope; aligned with SDGs; based on quantitative elements that can be monitored, and; founded on the LDN response hierarchy*
Contribute to the achievement of LDN

Deliver multiple benefits, including climate

Scale up what works

Leverage finance including private sector

Enhance national capacities

LDN Transformative projects & programmes (LDN TPP)
LDN transformative projects

Primary Focus of Global Mechanism Activities

Early Project Idea
- From ambition statements to early outline of interventions to be discussed with potential funders

Funding Proposal
- Preparation of proposals and engagement with funding entity

Lessons learned
- Assess implementation and early impacts
- Learning and knowledge sharing

Selective Involvement in support of countries and their funding partners

Strategies
- Convention Strategic Planning
  - LDN Targets and other Convention implementation plans

Concept
- Design
  - Technical feasibility studies, gender informed designs and interventions, detailed social and environmental safeguards analyses

Feasibility

Proposal
- Continued support
  - Technical support during implementation of projects (procurement, financial management, technical oversight)

Implementation

Evaluation
From target to implementation
LDN transformative projects and programmes

**Scientific Conceptual Framework for LDN**

**LDN governance principles and project Checklist**

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**Actions:** Prevention, SLM, restoration/rehabilitation; sustainable value chains

**M&A**

**Incentives**

**Full project proposal development**

**Global agenda**

**M&A, best practice, science & technologies**

**Capacity**

**Government (Ministries, Agencies, etc.)**

**Implementing partners**

**Civil society**

**Funding sources**

**Technical partners**

**Project target**

**Project concept notes**
LDN financing

- Attaining LDN, and SDG target 15 requires a broad range of financing options
- Harnessing the pre-existing land-use finance continues to play a pivotal role
- Important is bringing together private sector investors and firms to finance projects that will help achieve LDN
GM support for LDN TPPs

- Supporting the **early-stage project preparation** to address the country’s land degradation phenomenon, identified through LDN target setting process

- **Collaborating with various financial and technical partners** worldwide

- Developed a **checklist** on LDN features to support the development of TPPs in collaboration with the UNCCD Secretariat, the SPI and the GEF

- **Today, engaged in 20 countries and 5 regions** worldwide
What UNCCD can provide

**UNCCD can**
- Convene key stakeholders
- Finance the recruitment of a national consultant to develop a project concept note
- Provide technical support for the development of project concept note
- Facilitate dialogue with GEF Secretariat, national focal points of relevant funding sources (GEF, GCF, AF...) and other relevant entities

**UNCCD can**
- Upon Government request, partially fund/cover implementing/funding agency costs of preparation of full project proposal
- Join country missions
- Facilitate dialogue (continuing from earlier stage)
Requirements for UNCCD support

Demonstration of country ownership

✓ LDN targets endorsed at the highest political level
✓ Official request for support from country Parties
✓ Identification of potential project ideas, targeted funding sources (including climate finance) and potential implementing partners
✓ Political buy-in an commitment of national and local authorities with relevant expertise
✓ Collaboration in facilitation of in-country activities related to the development of the project

Strong linkages to LDN

✓ Close alignment of project ideas with the national LDN targets, LDN Scientific Conceptual Framework, and UNCCD/SDG reporting process
✓ Demonstration of multiple benefits: benefits targeting vulnerable groups (e.g., young, women); emphasis on value chain development; strengthened land tenure governance; gender; climate benefits etc.
It is time for *positive* transformation

And LDN provides a framework to get there
Thank you!

Web: www.unccd.int
Twitter: @UNCCD
Facebook: www.facebook.com/UNCCD
The Great Green Wall initiative

Initially covering an area 15 km wide and 7,775 km long from Dakar to Djibouti, by 2030, the Wall aims to:

--Restore 50 million hectares of currently degraded land
--Sequester 250 million tonnes of carbon
--Create 10 million green jobs in rural areas.

Led by the African Union and funded primarily by World Bank and the GEF, multiple international and national institutions have mobilized resources and are coordinating development projects in support of the Great Green Wall.

GGW is a $8bn project restoring degraded land

http://www.greatgreenwall.org/
Great Green Wall: Restoration approach

- Landscape scale restoration across land uses and production systems (e.g. forests, agroforestry, croplands, grasslands, and pastoral and fishery systems).
- Involves many sectors and groups, putting communities – and their livelihoods – at the centre.
- Restoration planned along the entire value chain, from land and seed to end products and markets.
Great Green Wall: Strategic relevance

- African ownership and leadership
- Alignment with regional priorities
- Strong poverty reduction focus
- Promotion of climate resilience
- Focus on knowledge networks
A 2016 FAO assessment of the GGW core area shows that 166 of 780 million hectares provide opportunities for restoration.
**GGW: Impacts**

- **SENEGAL:** 12 million drought resistant trees have been planted in less than a decade.

- **ETHIOPIA:** 15 million hectares of degraded land restored.

- **BURKINA FASO:** 3 million hectares of land have been rehabilitated through local practice used by communities called the Zai.

- **NIGERIA:** 5 million hectares of degraded land restored.

- **NIGER:** 5 million hectares of land restored; delivering an additional 500,000 tonnes of grain per year. Enough to feed 2.5 million people.