DOKSAY

Çok Nemli İklime Sahip Doğu Karadeniz Bölgesinde
Entegre Doğal Kaynak Yönetimi

Integrated Natural Resource Management in Very Humid
Climatic Regions of Eastern Black Sea Coastal Region in Türkiye

LAND DEGRADATION NEUTRALITY APPROACH

Local Solutions for a Climate-Resilient Future

Land Degradation Neutrality Approach Booklet, 2025

Republic of Türkiye Ministry of Environment, Urbanization and Climate Change General Directorate of Combating Desertification and Erosion

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Baskı:

The Integrated Natural Resource Management in Very Humid Climatic Regions of the Eastern Black Sea Coastal Region in Türkiye (DOKSAY) Project is a project supported through GEF-7 cycle carried out in partnership with the General Directorate of Combating Desertification and Erosion Control (ÇEM) under the Ministry of Environment, Urbanization and Climate Change (MoEUCC), relevant governmental institutions, and with financial support from the Global Environment Facility (GEF). The project is being implemented by the Nature Conservation Centre (DKM) with the support from the United Nations Development Programme (UNDP).

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ABBREVIATIONS

LDN	LDN Land Degradation Neutrality
UN	UN United Nations
UNCCD	United Nations Convention to Combat Desertification
UNCCD COP12	United Nations Convention to Combat Desertification 12th Conference of the Parties
UNGA	United Nations General Assembly
DKM	Nature Conservation Centre
DOKSAY	The Integrated Natural Resource Management in the Very Humid Climatic Regions of the Eastern Black Sea Coastal Region in Türkiye Project
GEF	Global Environment Facility
SLM	Sustainable Land Management
SDGs	Sustainable Development Goals
SOC	Soil Organic Carbon
UNDP	United Nations Development Programme

Land Degradation Neutrality as a Global Sustainable Development Goal

The 17 Sustainable Development Goals (SDGs) were adopted at the United Nations General Assembly in September 2015, with the principle of leaving no one behind on the path to the global ideal of eradicating poverty, protecting our planet, and ensuring that all people live in peace and prosperity. The 15th of the Sustainable Development Goals (SDGs), Life on Land, consists of 12 sub-targets. The goal that SDG 15 aims to achieve by 2030 is to protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. Sub-goal 15.3 sets forth the objective of "achieving a Land Degradation-Neutral (LDN) world

Sustainable Development Goal 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.

What is Land Degradation Neutrality (LDN)?

It is possible to meet the increasing demand for goods and services for limited land resources in a sustainable way by protecting and increasing the production potential of land. Ensuring the continuity of the ecosystem services provided by land is one of the main tools that increase resilience against environmental changes, including climate change.

At the 12th Conference of the Parties to the United Nations Convention to Combat Desertification (UNCCD COP12), held in Ankara between October 12-23, 2015, member countries were called upon to establish "National Voluntary Targets" for Land Degradation Neutrality (LDN) (COP12/Dec.3). In 2016, Türkiye prepared these targets and submitted them to the UNCCD Secretariat.

The United Nations Convention to Combat Desertification (UNCCD) defines the concept of Land Degradation Neutrality 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 and ecosystems».

In the Land Degradation Neutrality (LDN) approach, preventing degradation is the highest priority, followed by reducing degradation, and finally, reversing past degradation. This approach, defined as the LDN Response Hierarchy, encourages the limited use of actions for reversal, while widely using prevention and reduction measures. The main options for reversal are restoration and rehabilitation activities. The stages in the LDN Response Hierarchy, "avoid," "reduce," and "reverse," can also be expressed as "protect," "manage," and "restore."

◆ Restoration:

It is to help improve a degraded ecosystem by aiming to re-establish the pre-existing biodiversity in terms of species composition and community structure.

◆ Rehabilitation:

It is the sum of actions taken to restore ecosystem functionality in areas focused on providing goods and services, rather than on restoration.

◆ Avoid (Protection):

It includes preventive actions that will prevent negative changes in land quality and ensure resilience in non-degraded lands by eliminating the causes of degradation through regulation, planning, and management practices.

◆ Reduce (Management):

It includes measures to reduce degradation on agricultural and forest lands through sustainable management practices (sustainable land management, sustainable forest management).

◆ Reverse (Restore):

It includes restoration and rehabilitation activities aimed at regaining the productive potential of degraded lands and providing a portion (if possible, all) of the expected ecosystem services.

The aim of the LDN approach should be to create a balance between the effort to be spent on improving degraded land and the ongoing land degradation. In other words, it aims to balance potential gains and losses without a net loss in healthy and productive lands in terms of the ecosystem services and functions provided by land resources.

1 Avoid (Protection):
It includes preventive actions that will prevent negative changes in land quality and ensure resilience in non-degraded lands by eliminating the causes of degradation through regulation, planning, and management practices.

2 Reduce (Management):
It includes measures to reduce degradation on agricultural and forest lands through sustainable management practices (sustainable land management, sustainable forest management).

3 Reverse (Restore):
It includes restoration and rehabilitation activities aimed at regaining the productive potential of degraded lands and providing a portion (if possible, all) of the expected ecosystem services.

Why is Land Degradation Neutrality Important?

The measurement, monitoring, and interpretation of LDN indicators contribute to ensuring the continuity of ecosystem services by providing reliable supporting data for decision-makers' Sustainable Land Management (SLM) policies

Vision of the LDN Approach

- **To maintain and enhance the sustainable delivery of ecosystem services,**
- **To sustain and enhance productivity to improve food security,**
- **To increase the resilience of the land and the people dependent on it,**
- **To seek synergies with other social, economic, and environmental objectives,**
- **To reinforce responsible and inclusive land governance.**

On the other hand, measures for LDN increase the resilience of people who depend on land to shocks such as the effects of climate change and disasters. It supports responsible, inclusive land governance for the benefit of all by focusing on protecting the land use rights of vulnerable groups.

Sustainable Land Management activities provide direct and indirect benefits to society through ways such as increasing soil organic carbon and soil fertility, ensuring efficiency in water use, conserving biodiversity, and contributing to climate change adaptation and mitigation activities. Therefore, it also contributes to the synergy between policies addressing environmental and development goals.

Principles of Land Degradation Neutrality

The fundamental approach is to conserve and strengthen natural capital while carrying out LDN activities, but to do so while respecting the rights of land users.

- Neutrality is the minimum target; countries can set more ambitious targets, such as achieving a better state.
- Planning to achieve LDN should be integrated with existing land-use plans.
- Anticipated losses should be counterbalanced by reversal interventions.
- Counterbalancing activities should be undertaken within the same land-use type.
- Land-use decisions should be based on multi-variable assessments, taking into account land potential, land conditions, resilience, and social, cultural, and economic factors; economic, social, and environmental sustainability should be considered in planning activities.
- The LDN hierarchy should be applied (Avoid > Reduce > Reverse).
- A participatory approach involving all stakeholders in planning, implementation, and monitoring should be applied.
- Be reliable and transparent.
- In monitoring, the global indicators of the United Nations Convention to Combat Desertification (land cover, land productivity, and carbon stocks) should be used. In interpreting the indicators, the rule “if one is degraded, the whole is considered degraded” applies.
- Global indicators should be supported by national and regional indicators to aid interpretation and fill gaps.
- Local knowledge should be used to interpret and validate monitored data.
- A continuous learning approach should be applied in the form of forecasting, planning, monitoring, interpreting, reviewing, adapting, and creating the next plan.

Management Principles for Land Degradation Neutrality

◆ **Effectiveness:**

LDN goals and objectives should be clearly defined at all levels of governance.

◆ **Efficiency:**

The benefits of LDN interventions should be maximized at the lowest possible cost.

◆ **Trust and Participation:**

It should be inclusive, based on collaboration, to ensure livelihood security and justice for all.

◆ **Sustainability and Local Responsiveness:**

The economic, social, and environmental needs of current and future generations should be balanced.

◆ **Legitimacy and Equity:**

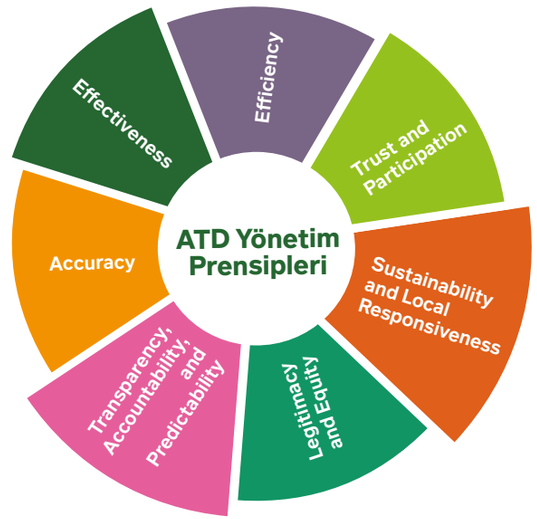
There should be a system based on collaboration, that is fair, impartial, where gender equality is observed, and where everyone has access to services without discrimination.

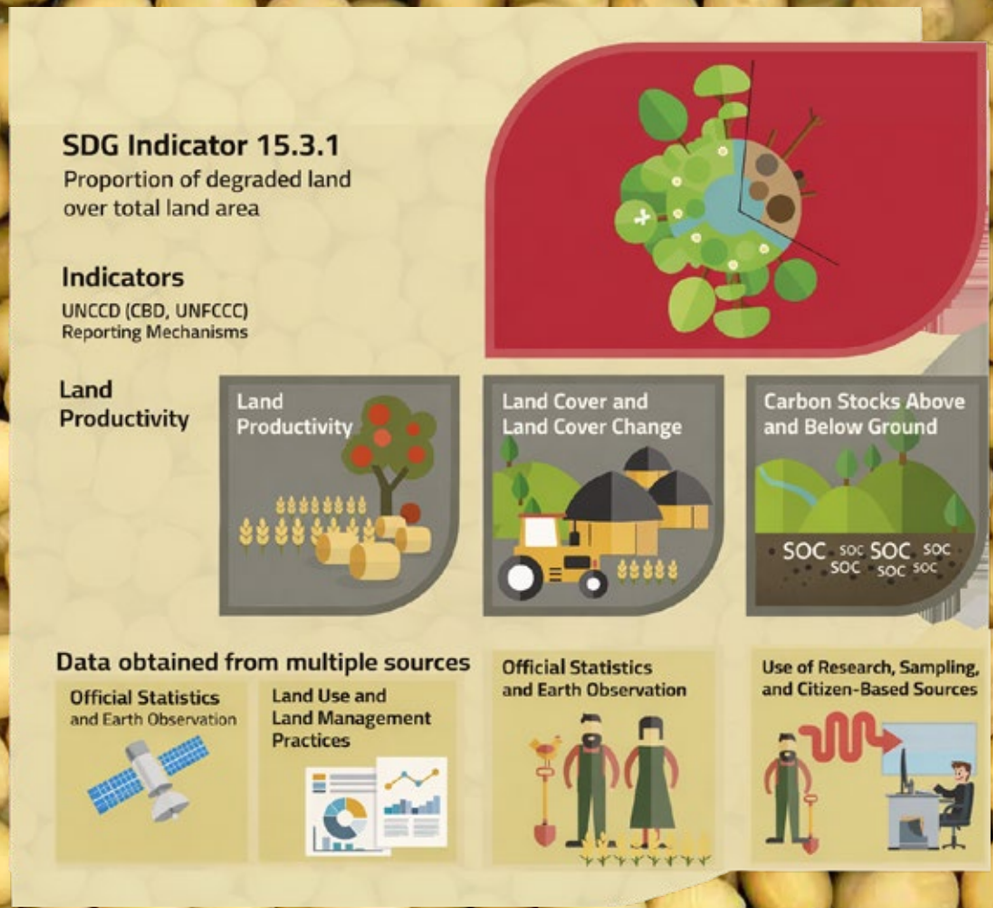
◆ **Transparency, Accountability, and Predictability:**

Governance responsibility should be demonstrated, feedback provided, questions answered, and decisions communicated.

◆ **Accuracy:**

Individual private interests and governance decisions should be separated from each other.





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Land Degradation Neutrality Baseline and Indicators

A reference time frame or a comparison baseline should be established to determine whether the LDN target has been achieved. The LDN target means maintaining or improving the baseline condition. In determining the baseline, identifying changes over time, and reporting progress towards LDN targets, the UNCCD Secretariat recommends the use of "land cover," "land productivity" (metric: net primary productivity), and "below- and above-ground carbon stocks" (metric: soil organic carbon [SOC]) indicators. These indicators are also used as sub-indicators in the calculation of the "proportion of land that is degraded over total land area" indicator used to measure progress recorded in Sustainable Development Goal 15.3, and parties make their reports in this context.

◆ Land Cover:

Changes in land cover are one of the fundamental indicators that must be monitored as they are the first signs of increases and decreases in vegetation cover, habitat fragmentation, and land-use change.

◆ Land Productivity:

Land productivity refers to the total above-ground net primary production (NPP), defined as the net energy remaining after subtracting the respiration share from the energy taken in by plants.

◆ Below- and Above-Ground Carbon Stocks:

Carbon stock is the amount of carbon in a pool (systems with the capacity to store or release carbon). Terrestrial carbon pools are biomass (above- and below-ground biomass); dead organic matter (litter); and soil (soil organic matter). Soil organic carbon is an important indicator of soil quality as it affects the soil's nutrient cycle, pH, water holding capacity, aggregate strength (soil structure stability), and structure.

"Land Degradation Trends" obtained by evaluating these fundamental indicators together is an important tool used on a global scale to examine the current state of land degradation, identify degraded areas, understand the underlying causes of degradation, and make intervention decisions. The indicators can be supported by national or local indicators when necessary. Global data sources can be utilized if national-level data is not available or if there is a need to supplement and improve existing data. The "one out, all out" principle is essential in calculating land degradation indicator trends. In other words, if any of the indicators show a negative trend, it is concluded that there is a degradation trend, regardless of absolute positivity.

REFERENCES

Erpul, G., Akça, E., Tekin, S.N., Karaman, N.A., Canlı, P., Morkoç, S., Kavaklı Karataş, Z., 2023. Arazi Tahribatının Dengelenmesi Karar Destek Sistem İl İstatistikler ve Sürdürülebilir Arazi Yönetimi Yaklaşımları ve Uygulamaları (Land Degradation Neutrality Decision Support System Provincial Statistics and Sustainable Land Management Approaches and Applications), Çölleşme ve Erozyonla Mücadele Genel Müdürlüğü Yayınları, Ankara. The section taken from this work has been reproduced with the permission of the publisher.

Türkiye Arazi Tahribatının Dengelenmesi Ulusal Hedefler Raporu (2016-2030) (Türkiye Land Degradation Neutrality National Targets Report), 2016, Mülga Orman ve Su İşleri Bakanlığı, Çölleşme ve Erozyonla Mücadele Genel Müdürlüğü, Ankara, Türkiye.

Land Degradation Neutrality Target Setting – A Technical Guide, Land Degradation Neutrality Target Setting – A Technical Guide, UNCCD, The Global Mechanism, May 2016. http://unstats.un.org/sdgs/files/metadata-compilation/Metadata-Goal-15.pdf.

Orr, B.J., 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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The DOKSAY Project is a multi-faceted project that aims to provide significant environmental, social, and economic contributions to Türkiye. It aims to develop low-cost and nature-based solutions to problems related to land management. This project, which blends traditional knowledge with innovative practices, plays an important role in the areas of environmental sustainability, rural development, and combating climate change. It particularly supports the transition to a sustainable development model with more resilient and compatible land use in the Eastern Black Sea Region.

The project directly contributes to the Land Degradation Neutrality (LDN) targets set by Türkiye within the scope of the United Nations Convention to Combat Desertification (UNCCD), the United Nations Sustainable Development Goals (SDGs), the Paris Agreement, and Türkiye's mitigation and adaptation strategies for combating climate change.