



**Ministry for Environment and Natural Resources**

**Department of Environment**

**Republic of Kenya**

# **Republic of Kenya National Land Degradation Neutrality Targets**

**Nairobi, Kenya**



**THE GLOBAL  
MECHANISM**  
United Nations Convention  
to Combat Desertification



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Dear

**KENYA LAND DEGRADATION NEUTRALITY TARGETS ENDORSEMENT**

Kenya is grateful for the support received from Global Mechanism (GM) and United Nations Development Program (UNDP) to facilitate the global LDN Target Setting Program (LDN TSP). To achieve this process, the Ministry of Environment and Natural Resources established the National LDN working group drawn from Ministries, Departments, State agencies, civil society and private sector. The process was participatory and incorporated all relevant stakeholders. Baseline Assessments established trends and drivers of land degradation. Three indicators (land use land cover, land productivity and soil organic Carbon) were used to assess past and current status of land degradation in Kenya. Earth observation satellite data was used to perform the analysis. Consultative forums

were held to sensitize stakeholders and refine LDN targets. The final output of this process was endorsement of LDN targets for Kenya. These targets have been set up at national and subnational levels are time bound, quantitative and site specific.

The LDN Targets will form the basis for the intervention strategies through LDN transformative projects. These targets will be monitored and evaluated using Land Cover, Land Productivity and soil carbon as indicators. The country is in the process of formulating transformative programs to implement Land Degradation Neutrality (LDN).

Land Degradation Neutrality (LDN) Target Setting Program is in line with the country's development policies and implementation of priorities related to National Action Program under United Nations Convention to Combat Desertification (UNCCD), Sustainable Development Goals (SDGs) and Vision 2030 which is the national long-term development policy that aims to transform Kenya into a newly industrializing, middle-income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment.

The Government of Kenya is committed to mainstreaming LDN Targets at national and county levels and promotes implementation of land restoration efforts to achieve sustainable development.

Kenya through the Ministry of Environment and Natural Resources is pleased to endorse the LDN Targets as a key driver towards sustainable development.

Please accept, your Excellency the assurances of my highest consideration.

Yours 



**PROF. JUDI W. WAKHUNGU, EGH  
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## 1. Introduction

The Government of Kenya, through Ministry of Environment has committed to establish voluntary Land Degradation Neutrality (LDN) Targets in Kenya. These targets are aimed at addressing the main causes of land degradation, while achieving no net loss or net gain in LDN. The process of setting up LDN Targets in Kenya has been supported by a robust working group comprising of Government sectors, research institutions, universities, civil society organizations and the private sectors Earth observation baseline data on three land degradation indicators (land use land cover; land productivity and soil organic carbon) was analysed revealing severe levels of the phenomena in Kenya. The three indicators supported the identification of hotspots based on most degraded watersheds. These hotspots will support the identification of transformative projects in Kenya. The selected hotspots include: Ewaso Ngiro hydro basin and Tana River basin. The land productivity of these two basins has been declining in the past ten years affecting socio economic livelihood of the people and threatening food security. Field visits to some of the affected counties revealed that land degradation is increasingly impacting on the ability of land to provide ecosystem goods and services. For instance, the County Government of Kitui is trying to address the issue of land degradation through establishment of community groups tasked with spearheading soil conservation practices, one notable soil reclamation practice witnessed is tree planting especially bamboo trees.

National and subnational LDN targets in Kenya have been established. Through the LDN target(s), Kenya aims to achieve a balance between anticipated land degradation (losses) and planned positive actions (gains), in order to achieve, at least, a position of no net loss of healthy and productive land. In Kenya, the impacts of land degradation are severe: they include a reduction in crop and pasture productivity and fuelwood and non-timber forest products, which are closely linked to poverty and food insecurity. The damage to soil, loss of habitat, water shortages, and siltation reduce biodiversity and ecosystem services and have economic consequences. In order to address these land degradation challenges, Kenya has gone a mile further to set more ambitious targets beyond Neutrality which is the minimum objective.

Relevant **stakeholder** groups have also been involved in the LDN target setting process through the LDN national working groups in order to ensure ownership and evaluate trade-offs early on in the planning process. LDN Target(s) will be **integrated** into existing environmental, agricultural, infrastructure and overall development policies and plans, including UNCCD NAPs, NDCs, SDGs and restoration targets. Most importantly, they will become an essential component of integrated land-use planning. Kenya prepared its 2<sup>nd</sup> UNCCD National Action Programme (NAP) for 2015-2025, this document supports reclamation of degraded areas, reduction of further degradation, and conservation of areas that are not degraded. LDN TSP Kenya will enable achievement of commitments laid down in NAP.

The proposed time horizon for the **achievement of LDN targets is the year 2030** in order to align to the 2030 Agenda for Sustainable Development (SDG target 15.3). All targets set are **measurable** according to the LDN indicator framework endorsed at national and global levels. The process of the preparation of the third MTP (2018- 2022) and the second generation County Integrated Development Plans (CIDPs) are ongoing in which SDGs and Africa Agenda 2063 will be mainstreamed. This presents an opportunity for LDN Targets to be harmonised into national development agenda.

## 2. Achieving LDN as a national priority

LDN is in line with Kenya's national development priorities. Achieving LDN will not only improve food security in Kenya but also improve the country's Gross Domestic Product. Land degradation is a key driver of drought in Kenya especially in arid and semi-arid lands (ASALs). ASALs receive below

average rainfall and the high temperature increases evapotranspiration. This leads to reduced recharge of inland water sources. In 2017, Kenya suffered severe drought which led to crop failure, dying herds of livestock, and increased food insecurity. Further, with hydropower being the cheapest source of energy in Kenya, poor rains increased energy costs, their effects spilling over to other sectors. The rise in food and energy prices drove inflation to a five-year high of 10.3% in March 2017 (World Bank, 2017).

GoK is however committed to improving the country's socio-economic status, it has therefore supported national, regional and international development blueprints. Most of these are in harmony with LDN as they support land restoration and conservation to boost land productivity. Therefore LDN becomes a vehicle for realization of such government commitments. Some of these commitments include:

### **National Action Plan (NAP)**

UNCCD calls upon parties to develop and implement National Action Programme (NAP) for the reduction and prevention of Desertification, Land Degradation and Drought (DLDD). The first NAP in Kenya was prepared in 2002, and was included in the UNDP/ GOK Country Cooperation Framework under the environment and natural resources programme. It supported local level community initiatives in Turkana, Samburu Marsabit and Garissa districts among other ASAL counties. Many local communities benefited from this support.

ASAL programmes have continued to receive financial support from the government as well as from bilateral and multilateral development partners. There are increasing opportunities provided by EMCA 1999 (e.g. NETFUND, RESTORATION FUNDS), Constituency development fund, local Authority transfer Funds, and Community Development Trust fund.

The preparation of the 2<sup>nd</sup> National Action Programme (NAP), 2015-2025 was an obligation by all Countries signatory to the United Nations Convention "to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification particularly in Africa". This Kenya NAP was prepared in line with the UNCCD 10 year Strategic Plan agreed on during the Conference of Parties. The preparation was participatory with contributions from lead agencies (Government), civil society, and other stakeholders whose inputs greatly enriched the Plan. In line with Vision 2030 and the devolved units of governance, the proposed interventions are aimed at reducing poverty, vulnerability, addressing gender concerns for people living in the ASALs areas to ensure a nation living in a clean, secure and sustainable environment. The success of the implementation of NAP lies on the preparation of viable projects within the framework of these NAP priority areas.

### **Sustainable Development Goals (SDG)**

SDGs Road Map has been prepared with seven broad areas that will guide the transition process in Kenya. The seven areas are: mapping of stakeholders and establishing partnerships, advocacy and sensitization, domestication/localization, mainstreaming and accelerating implementation, resource mobilization, tracking and reporting and capacity building. The launch of the SDGs in Kenya on 14th September 2016 created awareness among stakeholders and rallied them behind implementation. The Ministry of Devolution and Planning coordinates the implementation and monitoring of the SDGs in Kenya. The SDGs focal point within the Ministry offers technical backstopping for SDGs within government and also among stakeholders. The government directed all Ministries, Department and Agencies (MDAs) to mainstream the SDGs into policy, planning, budgeting, monitoring and evaluation systems and processes. As a result, all SDGs targets and indicators have been mapped against the mandates of the MDAs and assigned the SDGs to the respective development actors. LDN supports realization of Goal 15.3.

### **Vision 2030**

The Kenya Vision 2030 is the national long-term development policy that aims to transform Kenya into a newly industrializing, middle-income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment. The Vision comprises of three key pillars: Economic; Social; and Political. The Economic Pillar aims to achieve an average economic growth rate of 10 per cent per annum and sustaining the same until 2030. The Social Pillar seeks to engender just, cohesive and equitable social development in a clean and secure environment, while the Political Pillar aims to realize an issue-based, people-centred, result-oriented and accountable democratic system. Vision 2030 has launched several flagship projects related to land rehabilitation and restoration that LDN can leverage on. These includes: Rehabilitation and Protection of Indigenous Forests in Five Water Towers, Twenty-Four Medium Sized Multipurpose Dams (Including the 2 Multipurpose) and ASAL Development - Irrigation Projects.

### **County Integrated Development Plan (CIDP)**

Kenya County Planning process provides that every county shall prepare a development plan in accordance with Article 220(2) of the Constitution of Kenya for approval by the County assembly. The development plan informs the budget priorities for the coming year. The County Governments Act, 2012 (CGA),<sup>104</sup> obligates a county to develop an integrated plan, designate planning units at all county administrative levels and promote public participation and engagement by non-state actors in the planning process. The county plans consist of the following;

- The County Integrated Development Plan (CIDP) is a 5 year plan that shall inform the county's annual budget;
- County Sectoral Plan (10 year plan);
- County Spatial Plan is a 10 year plan using the Geographic Information System (GIS)
- City and municipal plans.

For successful implementation of LDN TSP in Kenya, mechanisms are being explored to integrate LDN national/subnational targets into CIDPs.

### **3. National LDN baseline**

For the purposes of LDN, it is important to note that the three indicators provide good coverage of the land-based ecosystem services underpinning LDN and together can be used to monitor the quantity and quality of land-based natural capital and the ecosystem services that flow from that land base. In addition, the indicators address change in the system in different yet highly relevant ways. Land cover provides a first indication of a reduction or increase in vegetation, habitat fragmentation and land conversion, land productivity captures relatively fast changes while SOC reflects slower changes that suggest trajectory and proximity to thresholds.

#### **Land Cover**

The land Cover data provided is of three epochs (2000; 2005; 2010) at 300m spatial resolution. The classification used is FAO classification system with 22 classes which have been aggregated to 6 classes. The 6 classes represent:

- i. Forest: Tree broadleaved evergreen, Tree broadleaved deciduous, Tree needle leaved evergreen, Tree needle leaved deciduous, Tree mixed leaf type, Mosaic tree, shrub / HC, Tree flooded, fresh water
- ii. Shrubs, grasslands and sparsely vegetated areas: Mosaic vegetation / cropland, Mosaic HC / tree, shrub, Shrub land, Grassland, Lichens and mosses, Sparse vegetation

- iii. Cropland: Cropland, rain fed, Cropland irrigated / post-flooding, Mosaic cropland / vegetation
- iv. Wetlands and water bodies: Tree flooded, saline water, Shrub or herbaceous flooded, Water bodies
- v. Artificial areas: Urban areas
- vi. Bare land and other areas: Bare areas, Permanent snow and ice

According to the classification, the predominant land cover is class 2: Shrubs, grasslands and sparsely vegetated areas. This class extends in the northern parts of Kenya (East and West) and south Eastern Kenya towards coastal region. The areas covered by this land cover fall in the ASALs region. The arid parts of Turkana County have bare land. The Humid, sub-humid and semi-humid agro-ecological zones of Kenya are mainly dominated by Cropland as the main land use. The forest land cover is found around most of Kenya's water towers. Mount Kenya, Aberdare ranges, Mau, Elgon, Cherangani. However we also have this land cover in upper central and eastern Kenya. The changes in land cover between 2000 and 2010 mainly results from change in forest cover to either cropland or shrub land. The areas where these changes have occurred, have in recent years experienced rapid population growth. This could explain the deforestation for farming, firewood, timber.

### **Land Productivity Dynamics**

Land Productivity refers to the total above-ground net primary productivity (NPP) defined as the energy fixed by plants minus their respiration (Millennium Ecosystem Assessment, 2005). It's measured in tonnes of dry matter per hectare per year (tDM/ha/year). The dataset has been derived from a 15-year time series (1999 to 2013) of SPOT Vegetation NDVI observations composited in 10-day intervals at a spatial resolution of 1 km.

The upper northern area of Kenya and a big part of central, rift valley and western region, show stable to increasing productivity. Most Eastern parts going down to the coastal region show declining productivity. Bush and tree encroachment in the upper north areas (ASALs) of Kenya show improved productivity, this is a false positive as the bush and shrubs lead to a loss of natural capital with less forage for grazing animals and wildlife.

### **Soil Organic Carbon (SOC)**

Measured in tonnes of carbon per hectare, SOC is an indicator of overall soil quality associated with nutrient cycling, water holding and its aggregate stability and structure. SOC stocks are therefore of local importance, but also of global importance because of their role in the global carbon cycle: the SOC pool can be both a source and sink of carbon and is thus fundamental to the estimation of carbon fluxes. SOC stocks are largely influenced by anthropogenic activities such as land use change and management practices, which affect the productive potential of the soil.

From the SOC product for Kenya, the five major water towers in Kenya (Mount Kenya, Aberdare ranges, Mau Forest, Cherangani hills and Mount Elgon) seem to have highest SOC, this can be attributed to the dense vegetation cover in these regions and soil conservation practices that have helped maintain soil fertility. The dead organic matter decomposes and fertilises the soil. ASALs in Kenya are shown to have low SOC, this can be attributed to low vegetation cover, high evapotranspiration and poor soil structure.

#### 4. Kenya's LDN targets and associated measures

##### **LDN at the national scale**

- LDN is achieved by 2030 as compared to 2015 and an additional 9% of the national territory has improved (net gain)

##### **LDN at the sub-national scale**

- LDN is achieved in Ewaso Ngiro North (Lak Dera 2) of Kenya by 2030 as compared to 2015 (no net loss)
- LDN is achieved in the Tana River catchment zone of Kenya by 2030 as compared to 2015 and an additional 16.7% of the zone has improved (net gain)
- LDN is achieved in Athi River catchment zone (Galana, Pangani, Kenya South east Coast) of Kenya by 2030 as compared to 2015 (no net loss)
- LDN is achieved in Rift Valley catchment zone (Lake Turkana, Naivasha, Natron) of Kenya by 2030 as compared to 2015 and an additional 9% of the zone has improved (net gain)
- LDN is achieved in the Lake Victoria region (Nile basin) of Kenya by 2030 as compared to 2015 and an additional 9 % of the zone has improved (net gain)

##### **Specific targets to avoid, minimize and reverse land degradation**

- Increase forest cover through Afforestation/Agroforestry in existing forests; areas of shrubs/grassland; wetlands; croplands by 5.1 M Ha
- Increase by 16% net land productivity in forest, shrubland/grassland and cropland showing declining productivity; achieved through SLM practices
- Increase soil organic carbon by 319626 total tonnes in cropland land use achieved through SLM practices
- Halt the conversion of forests to other land cover classes by 2030
- Rehabilitation of all abandoned Mining and quarrying areas through enforcement of by-laws

**Table 2 - Summary of corrective measures to achieve LDN**

Negative Trend	Area in ha	Corrective measure			Estimated investment required (M USD)
			Area in ha	Timeframe	
Conversion of Forest to Cropland	18100	Afforestation/Agro forestry	18100	2030	3
Conversion of Forest to Shrubs, grasslands and sparsely vegetated areas	4400	Afforestation	4400	2030	0.44
Low Forest Cover /tree cover	4099300	Afforestation	5100000	2030	409.93
Declining net land productivity in all land cover categories	2369200	Rehabilitate through SLM	2369200	2030	100
Forest showing declining and early signs of decline in productivity	615100	Appropriate SLM practices	615100	2030	61.51
Shrubs, grasslands and sparsely vegetated areas showing declining and early signs of decline in productivity	4815200	Appropriate SLM practices	4185200	2030	481.52
Croplands showing declining and early signs of decline in productivity	4251800	Agroforestry;Appropriate SLM practices	4251800	2030	425.18
Bush Enchroachment_Shrubs, grasslands and sparsely vegetated areas showing increasing productivity	4210600	Appropriate SLM practices	4210600	2030	421.06
Low Soil Organic Carbon in Cropland	55.9 (ton/ha)	Appropriate SLM practices	59.5 (ton/ha)	2030	100

## **5. Leveraging LDN targets through the national sustainable development agenda**

For LDN TSP to achieve its objective it must be integrated into the Kenya policy and institutional structure. The National and County Government must own the process. It is currently being coordinated by the Ministry of Environment, Department of Multilateral Environmental Agreements. A network of other key stakeholders drawn from government agencies, research institutions, civil societies and private sector have been engaged to steer the process.

For LDN to achieve its mandate there's need for enforcement of environmental compliance which is attributed to adequate technical capacities, monitoring infrastructure and adequately trained staff. Building a cadre of professionals in environment and natural resource management is an investment for the future that requires short and long term engagements.

A partnership is critical for the success of LDN. To ensure an inclusive LDN partnership and stakeholder involvement in decision making, there's need for wide representation from government agencies and non-state actors (research institutions, private sector and civil society organizations, development partners). Participation of these non-state actors can be encouraged through provision of incentives to enhance investment in LDN, as well through mechanisms that provide a framework for building partnerships between these entities and the government.

Sound environmental protection and management require sustainable financing. The Government budget is the single largest source of funding for protection and conservation of the environment and natural resources. LDN must be mainstreamed in national funding mechanisms. This may be through Medium Term Plan III, National/County Integrated Development Plans and other government budget allocation avenues. However, the current allocation to environment and natural resources is inadequate. As such, there is an urgent need to complement Government funding by harnessing additional funding from multilateral funding mechanisms, development partners, private sector and civil society organizations. Significant benefits of LDN can be realized and effectiveness increased through regional and international cooperation. Kenya is a party to a number of multilateral and regional environmental agreements such as UNCCD, UNFCCC, UNCBD, POPs. These agreements are important in providing a framework for conservation of shared resources between countries.

## **6. Joint bold action to achieve LDN in Kenya**

LDN seeks to leverage on ongoing initiatives drawn from public private partnership (PPP). Diverse stakeholders' engagement had been cultivated in setting up LDN TSP in Kenya. LDN seeks to be further integrated into the Public Private Partnerships (PPP) system in Kenya. The Government of Kenya has introduced PPPs to spur the participation of the private sector in infrastructure development in the country. LDN transformative projects can benefit from this opportunity to tap into private sector involvement. The GOK is confident that through the PPP modality, the private sector can offer a dynamic and efficient way to deliver and manage development agenda. These efforts are geared towards achieving Vision 2030, Kenya's long-term development strategy, so that future generations can gain from the benefits of modern services, improved living standards and reduced poverty. The Public Private Partnership Unit (PPPU) was therefore established, as a specialized unit within the National Treasury, to promote and oversee the implementation of the GOK PPP Program. The PPP Unit, as the resource centre for best practice and guardian of the integrity of the PPP process, plays a large role in identifying problems, making recommendations to the PPP Committee regarding potential solutions, and ensuring that projects meet such quality criteria as affordability, value for money, and appropriate transfer of risk.