UNITED REPUBLIC OF TANZANIA

Land Degradation Neutrality Target Setting Programme Report

Vice President’s Division of Environment

October, 2018
LIST OF ABBREVIATIONS

CBO  Community Based Organisations
DAS  District Administration Secretary
DFID Department for International Development
FAO  Food and Agriculture Organization
ICRAF International Centre Research on Agro Forest
ISRIC International Soil Reference and Information Centre
IUCN International Union for Conservation of Nature
LDN TSP Land Degradation Neutrality Target Setting Programme
LUC  Land Use Cover
MJUMITA Mtandao wa Jamii wa Usimamizi wa Misitu Tanzania
NAFRAC National Resources Management and Agroforestry Centre
NSGPR National Strategy for Growth and Poverty Reduction
NAFORMA National Forest Monitoring and Assessment
NAPA National Adaptation Program of Action
NAP  National Action Plan
NAPCD National Action Programme to Combat Desertification
NCMC National Carbon Monitoring Centre
NGOs  Non Government Organisations
PRSP Poverty Reduction Strategy Papers
RAS Regional Administration Secretary
RCMRD Regional Centre for Mapping of Resources for Development
SDG  Sustainable Development Goal
SSA  Sub Saharan Africa
SLM  Sustainable Land Management
UNDP United National Development Program
UNCCD United Nation Conversion to Combat Desertification
URT United Republic of Tanzania
WWF  World Wide Fund for Nature
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INTRODUCTION

Tanzania is a party to the United Nations Convention to Combat Desertification (UNCCD). UNCCD is among the sister Conventions formulated during the Conference on Environment and Development (UNCED) held in Rio de Janeiro Brazil 1992. Tanzania signed the Convention in the same year 1992 and ratified it in April 1997. The Vice President’s Office is the Focal Point of the Convention on behalf of the Government.

Since then the Country has been participating in the implementation of the activities under the Convention including participating at the Conference of Parties (COP); meeting of the Committee to Review the Implementation of the Convention (CRIC); meeting of the Committee for Science and Technology (CST); various trainings; and different projects which are implemented with the aim of promoting Sustainable Land Management (SLM).

During COP 12 held in Ankara, Turkey in 2015 among other things it was agreed that country parties should set targets to become Neutral from Land Degradation (Land Degradation Neutral World) by 2030. This was derived from the Sustainable Development Goals. Article 15.3 of the SDG insists on the global ambition to shift to sustainable development and to have a land degradation neutral world.

Tanzania obtained support from the UNCCD-GM to conduct the LDN target setting process. The Government, through the VPO in collaboration with UNCCD-GM, engaged a Consultant to conduct the activity. Together with this consultancy a special task force (National Working Group) was established comprised of 30 technical officers drawn from the President’s Office, Vice President’s Office-Division of Environment (UNCCD, CBD, UNCCD Focal Point) government ministries, departments, agencies; local government authorities; higher learning and research institutions; Development Partners; and non-governmental organizations. The group had the aim to oversee the work of the consultant and to guide each step of the target setting process. After accomplishing the process a final report was prepared, validated and submitted to the National Focal Point.

The objective of the final report is to provide a brief and concise synthesis of the national Land Degradation Neutrality Target Setting Process. This report summarizes the process following key steps (1.1 to 1.4) which are further explained below in sections 2 to 5 and contains an analysis of LDN related data sets, i.e. national data on land use cover/change and global default data on land productivity and soil organic Carbon provided by the UNCCD secretariat. Both local and global default data were used to reflect the actual situation of land degradation in Tanzania.
1.0 SUMMARY

1.1 Preparation of a Leverage Plan

The National Leverage Plan plays an important role in the LDN target setting process. This is a plan for the intelligent application of national resources to achieve commitments under SDG 15 by leveraging the strengths of different players and address their weaknesses. In preparing a plan, detailed literature review was conducted as well as consultations held with different key stakeholders. In the plan some of the opportunities have been identified as indicated in section 2 sub section 2.2. Some of key opportunities include creating multiple benefits, fostering policy coherence, country commitments and engagements as well as effective tapping financing from key sources.

1.2 Formation of National Working Group

The establishment of the LDN National Working Group (NWG) was among an initial steps of the LDN target setting process to identify and engage key stakeholders from the key government sectors including agriculture, water, natural resources and tourism, finance, livestock and others relevant national organisations, international organizations (World Bank, UNDP, FAO, WWF and others), universities (Dar es Salaam, Sokoine), private sector, central and local government, None Governmental Organizations (NGO) and International NGO.

1.3 Conducting an Inception meeting with NWG

The workshop was organized by the Vice President’s Office (VPO), Division of Environment with the aim to i) introduce NWG members to the LDN target setting process; ii) clarify roles and responsibilities for LDN NWG members iii) sensitize and create awareness on LDN target setting; iv) seek inputs and views on implementation of the LDN targets setting process. This meeting was facilitated by VPO, Division of Environment through UNCCD National Focal Point (NFP). After presentations, detailed discussions were held on the LDN baseline available data sources related to the LDN indicators (land cover, land productivity and soil organic Carbon). The way forward was agreed whereby the focus should be on data processing and target setting.

1.4 Collection and Processing of National and Global Default Data for LDN indicators

Both global default and national available data on land cover change were assessed and analysed. In general, both data sets showed changes particularly on deforestation, increase of agricultural land and increase of land covered by shrubs, grassland and sparsely vegetated areas. The local data provided by Regional Centre for Mapping of Resources (RCMRD) for setting LDN targets has been used rather than global default data due to; i) the closeness of actual land cover change based on recent analysis for Tanzania and; ii) local data on LUC measure of all components of LUC including water bodies which estimate the total area for Tanzania.

In assessing land use cover change in setting targets, it entails all the use of local data which have been assessed in Tanzania (section 3.3.2). On the other hand, land productivity, soil organic Carbon (Global default Data) used in target setting as discussed in section 3.3.3.
1.5 LDN assessment

Land degradation in Tanzania is caused by a number of biophysical and social economic factors, which could be direct or indirect. These factors and processes vary in their magnitudes and time taken to observe their impacts. It is clearly known that land degradation has both negative and positive impacts which can change the ecosystem and community livelihoods of community as well as the economy of the country. Table 2 in section 3.1 summarizes a number of driving forces and their impacts which needs to be managed in addressing land degradation. On the other hand, chapter 3.2 states that livelihood and the economy of the country depend on natural resources. The government has put in place a number of policies and strategies to ensure sustainable management of natural resources, particularly land degradation. For example, the mission of the Lawyers’ Environmental Action Team is to ensure sound natural resource management and environmental protection in including combating land degradation.

1.6 LDN targets

Taking into account LDN data and after the assessment of land degradation trends in Tanzania, the NWG validated the following LDN targets for Tanzania:

LDN targets at national level:
- LDN is achieved by year 2030 as compared to year 2010 and an additional 25% of the forest has improved (net gain).

LDN targets at the sub-national scale:
- LDN is achieved in the following land degradation hotspots: Dodoma, Singida, Tabora, Shinyanga and Manyara regions by 2030 as compared to 2010 additional 25% of the degraded hotspot regions has improved (net gain).

Specific LDN targets and measures based on targets to avoid, minimize and reverse land degradation:
- Restore 11,011,950ha of forests through sustainable forest management;
- Prevent and avoid decline of land productivity of forests on 2,640,600ha by 2030;
- Improve land productivity of shrub and grassland on 1,714,500ha by 2030;
- Improve land productivity of croplands on 8,462,500.5 ha by 2025;
- Improve land productivity of wetlands on 361,275ha by 2030;
- Increase soil organic Carbon in cropland to 54.5tons/ha by 2030;
- Reduce soil erosion (loss of top soils) by 19tons/ha.

Based on LDN hotspots identified with different levels of land degradation, targets have been set at regional scale with the aim to reach LDN by 2030. For different land cover classes, particularly forest, shrubs and crop land showing negative trends of land productivity as well as soil erosion, a number of interventions have been proposed.
2.0 LEVERAGING LDN

The LDN target setting process offers a unique opportunity for creating leverage among various players in Tanzania including policy makers, development institutions and partners, research and training institutions, civil society organizations and others. Leveraging of all these efforts and resources would create strategic advantage to utilize synergies and achieve something effective and significant and the key question is what to leverage and who to engage in the LDN target setting process which requires a plan.

2.1 Interest of country to commit to LDN and set LDN targets

Since Tanzania ratified the UNCCD in 1997, several initiatives have been undertaken to implement the Convention. Political will and commitment by the government has increased, policies and strategies for socio-economic transformation of the economy have mainstreamed in environmental issues. The first and second national reports on the implementation of the UNCCD have outlined the process of reviewing and updating the policies and action programs to include environmental and land degradation issues, including the Poverty Reduction Strategy Papers (PRSP), Agriculture Sector Development Support (ASDS), Agriculture Sector Development Program II (ASDP II), Regional Development Support (RDS) and key sectoral policies such as agriculture and national tourism, water resource, land resource as well as forests.

The Environmental Management Act (2004) was finalized and enacted by Parliament in November 2004 for use to address land degradation challenges. EMA established the National Environment Trust Fund (NETF) of which the National Development Fund (NDF) is a sub-set. Once the Act became law, the NETF-NDF was registered and used to implement activities to combat land degradation and desertification. LDN related country commitments and engagements are indicated in Table 1.

2.2 Leverage opportunities Identified

The National Leverage Plan plays an important role in LDN target setting process. This is a plan for the intelligent application of national resources to achieve national commitments under SDG 15 by leveraging the strengths of different players and address their weaknesses.

The SDGs are being implemented in the framework of the Tanzania Development Vision 2025 and its midterm five-year development plans. Currently the second phase, Five Year Development Plan II (FYDO II), is being executed. One among the objectives of the FYDP II is to ensure that global and regional agreements, like the SDGs in Tanzania, are adequately mainstreamed into national development planning and implementation frameworks.

The national leverage plan identifies and brings together the government, international and local partners, academic and research institutions and NGOs; this will include sector ministries and different stakeholders in LDN. The Leverage Plan has focused on three main areas of interest by identifying opportunities that are centered into three key areas which are: 1) Why LDN is needed?; ii) What to leverage? and iii) Who to be engaged in creating leverage? (See table 1). These opportunities include for example tapping finance, fostering policy coherence, integrating LDN in different policies and strategies, identifying LDN-related employment and investment opportunities,
The LDN target setting, leverage opportunities have been identified and are based on the current realities in Tanzania. The logical framework shows and explains the leveraging opportunities, identifies the actions to be undertaken in the process of leveraging and defines the responsibilities of the various stakeholders.

Target 15.3 of the Sustainable Development Goals (SDGs) sets out a new global ambition: to achieve a Land Degradation Neutral World by the year 2030. LDN aims to maintain and increase the amount of healthy and productive land resources, in line with national development priorities. Tanzania is not exempt from the effects of land degradation. It is estimated that 61 percent of the country is in danger of turning into desert due to ongoing degradation (NAPCD, 2000; URT, 2014). The magnitude, rates and negative impact on people’s livelihoods and environment vary across regions and agro-ecological zones. The impacts of land degradation are numerous including reduced productivity, food insecurity associated with destruction of important ecosystems and loss of biodiversity and soil fertility. In this regard, the Government has taken a number of initiatives to address land degradation impacts; these include putting in place policies, plans, programmes and its corresponding legislations. Furthermore, projects and programmes that aim to promote Sustainable Land Management (SLM) have been implemented in various areas of the country, including Katavi, Dodoma, Singida, Morogoro, Lindi, Kilimanjaro, Rukwa and Tabora Regions. Some of these projects are ongoing and other transformative projects to be implemented will address LDN in Tanzania by the year 2030.

Table 1: Framework for National LDN Target Setting Leverage Plan

<table>
<thead>
<tr>
<th>Leverage Opportunities</th>
<th>Actions</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Why LDN is needed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 1. Creating multiple benefits | • Justify relevance of LDN to Tanzania development agenda embraced in policies and strategies including MKUKUTA  
• Link LDN to achievement of other SDGs in Tanzania  
• Identify and consult Multi-stakeholder for their involvement in LDN target setting process | • Vice President Office (Division of Environment)  
• Ministry of Agriculture  
• Ministry of Livestock and fisheries  
• Ministry of Land  
• Ministry of Water Environment  
• Prime Minister’s Office  
• Ministry of Local Government |
| 2. Fostering policy coherence | • Integrate LDN and other SDGs in the national development framework  
• Review relevant policies to assess LDN coherence, make recommendations for policies were coherence can be made.  
• Integrate LDN into donor cooperation frameworks  
• Mainstreaming of LDN into relevant | • Development partners  
• Ministry of Agriculture  
• Ministry of Land  
• Ministry of Water  
• Vice President Office  
• Ministry of Natural Resource and Tourism  
• Ministry of Finance  
• NFP/Consultant |
| 3. Advancing climate action | • Integrate LDN into National Action Program of Action  
• Promote synergistic implementation of the three Rio Conventions  
• Intensify implementation of NAPA, Nationally Appropriate Mitigation Action (NAMA) and Nationally Determined Contributions (NDCs) | • Division of Environment (VPO)  
• UNCCD NFP, CBD NFP and UNFCCC NFP  
• NFP/consultant  
• Donors/Development partners (DFID, UNDP, FAO) |
|---|---|---|
| 4. Tapping financing opportunities | • Implement the National Climate Change Adaptation strategy  
• Build capacity to effectively utilize existing UNCCD funding windows  
• Develop fundable transformative LDN project proposals to access the LDN Fund  
• Include LDN in the national budget and allocate adequate resources to LDN related sectors | • Ministry of water  
• Ministry of finance  
• Ministry of Agriculture  
• Ministry of Natural Resource and Tourism  
• Ministry of Land  
• Ministry of Energy  
• Donors  
• UNCCD NFP |
| b) What to leverage? |  |  |
| 5. National development programmes, priorities and objectives | • Sustainable Development Goals  
• National Strategy for Growth and Reduction of Poverty (NSGRP)-MKUKUTA  
• Relevant sector policies  
• LDN related programmes and projects | • Ministry of water  
• Ministry of finance  
• Ministry of Agriculture  
• Ministry of Natural Resource and Tourism  
• Ministry of Land  
• Ministry of Energy  
• Donors  
• Development partners |
| 6. Country commitments and engagements | • World Summit on Sustainable Development (WSSD) Commitments as contained in the National Strategy for Sustainable Development (NSSD)  
• Nationally Appropriate Mitigation Actions (NAMA)  
• NAP which is aligned with International (10 years Strategy for UNCCD (2008-2018)  
• Sub-regional Action Programme to combat desertification (2015-2025)  
• National Biodiversity Strategy and Action Plan 2015 in line with Global Strategic Plan for Biodiversity (2011-2020)  
• Climate Change Strategy 2012 | • Vice President Office (Division of Environment )  
• Ministry of Agriculture  
• Ministry of Finance  
• Ministry of Land  
• Ministry of Water  
• Prime Minister's Office  
• Ministry of Local |
| c) Who to be engaged in creating leverage? |  |  |
| 7. Senior government | • Vice President Office  
• Minister of Agriculture, Livestock and Fisheries Development | • Vice President Office (Division of Environment )  
• Ministry of Agriculture |

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### 2.3 LDN National Working Group issues discussed and agreed upon

The NWG has been able to discuss and agree on the baseline for the respective LDN indicators, i.e. land cover change (global default data) provided by UNCCD Secretariat through the LDN Target Setting Programme (TSP) and national data provided by RCMRD, land productivity as well as soil organic Carbon, taking into account global default data and national data by National Forest Monitoring and Assessment (NAFORMA). The LDN baseline has been validated by the NWG based on local data on land use change and global default data on land productivity and on soil organic Carbon. In the validation workshop, both hotspot and LDN targets set were agreed.
Fig. above: NWG listening to a presentation on land degradation

These targets validated have been discussed in small working groups, which visited selected areas to verify LDN hotspots before presentation to the workshop in Morogoro at Sokoine University of Agriculture on 17th August, 2018.

3.0 ASSESSING LDN

3.1 LDN trends and drivers

Land degradation in Tanzania occurs as a consequence of several human decisions and actions as well as through natural processes which are driving the process. It is clearly known that decisions, actions or processes are the driving forces which cause the gradual or rapid deterioration of the natural environment which in turn impacts people livelihood who almost entirely depend on natural resources for their survival. Driving forces are the factors that cause changes in the system are presented in Table 2. They can be social economical or ecological and can have positive or negative influences on pressures. Examples of driving forces leading to land degradation in Tanzania include human population, climate change, poverty, political instability, insecure land tenure system, unsustainable farming practice as well as cultural believes. The contributions of potential drivers (direct and indirect) of land degradation are listed in Table 2.

Table 2: Main direct and indirect drivers of land degradation in Tanzania

<table>
<thead>
<tr>
<th>Direct drivers of land degradation</th>
<th>Indirect drivers of land degradation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Improper management of the soil</td>
<td>• Population pressure</td>
</tr>
<tr>
<td>• Improper management of annual, perennial, scrub and tree crops</td>
<td>• Migration</td>
</tr>
<tr>
<td>• Deforestation and removal of natural vegetation</td>
<td>• Land tenure</td>
</tr>
<tr>
<td>• Over-exploitation of vegetation for domestic use</td>
<td>• Poverty/wealth</td>
</tr>
<tr>
<td></td>
<td>• Labour availability</td>
</tr>
<tr>
<td></td>
<td>• Inputs (including access to credit/financing) and</td>
</tr>
<tr>
<td></td>
<td>infrastructure</td>
</tr>
</tbody>
</table>
- Overgrazing and shifting cultivation
- Industrial activities, waste deposition
- Uncontrolled Small scale mining
- Urbanisation and infrastructure development
- Disturbance of the water cycle
- Over-abstraction of water
- Natural causes (flood, earthquakes, landslides)
- Uncontrolled fires
- Continuous mono-cropping

- Education and training
- Access to knowledge and support services
- Land use conflict (crop producer and livestock keepers)
- Governance, institutional settings and policies (including taxes, subsidies, incentives)
- Poor technology
- Lack of commitments
- Inadequate awareness and lack of appropriate information

3.2 LDN institutional and legal environment

Tanzania is among other countries in Africa which is endowed with landscape with a number of natural resources, including forest and productive agriculture land (URT, 2014). This landscape is made up of ocean, lakes, arable and non-arable land mass, hills and mountains. Livelihood and the economy of the country depend on natural resources. The government has put in place a number of policies and strategies to ensure sustainable management of natural resources, particularly land to address land degradation.

The Tanzanian Government is committed to LDN to ensure sustainable social economic development of the country by implementing strong national environmental policies to protect the ecosystem. For instance; agriculture is the backbone of Tanzanian economy, through the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) which is part of Tanzania’s Kilimo Kwanza (Agriculture first) policy, aiming at increasing the productivity and value of agriculture for economic development and rural poverty alleviation (URT, 2013; URT, 2018). In addition the Government has formed an Inter-Ministerial Steering Committee that is chaired by the Vice President’s office to promote sustainable land management practices and improvement of livestock management systems. And lastly, the Government has considered mobilizing financial resources and influencing partnerships with international partners, national and international non-governmental stakeholders as well private sectors.

In Tanzania, the SDGs are being implemented in the framework of Tanzania Development Vision 2025 and its midterm five-year development plans of which currently the second phase, FYDP II, is being executed in the country (United Nations Association, 2018) (tz.one.un.org/sustainable-development-goals). The FYDP II outlines new interventions to enable Tanzania to industrialize in a way that will transform the national economy and create a wealthier more resilient society. To further clarify the fusion of the development agendas, it is simplest to say that the three dimensions of the SDGs (economical, environmental and social) are being operated through the interventions of the FYDP II in line with the outlined priorities. This has been done in order to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss” with a vision of achieving land degradation-neutral world” by 2030. Policies, strategies and institutions are in place to conserve environment. For example the Lawyers’ Environmental Action Team (LEAT) is the first public interest environmental law organization in Tanzania. Its mission is to ensure sound natural
resource management and environmental protection in Tanzania. The National Environmental Policy clearly stipulates how the country can respond to environment conservation including combating land degradation. The mandate and obligations to protect, conserve and manage the environment for the current and future generations are very fundamental for the Tanzania’s people’s welfare, social and economic development. This also is supported by the National Environment Management Council (NEMC). Among other legal and institutional frameworks, Tanzania’s commitment to environmental sustainability principles is manifested by, among other things, its endorsement and ratification of a number of multilateral environmental agreements and the development of national strategies and action plans to facilitate meeting its international, continental and regional obligations. Tanzania is a signatory to all three Rio Conventions related to land; i) the United Nations Framework Convention on Climate Change (UNFCCC); ii) the United Nations Convention on Biological Diversity (UNCBD) and iii) the United Nations Convention to Combat Desertification (UNCCD), under which the LDN TSP falls.

Tanzania has ratified and is implementing various Multilateral Environmental Agreements (MEAs), including the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) (1973); Kyoto Protocol to United Nations Framework on Climate Change (1997); SADC Protocol on Wildlife Conservation and Law Enforcement (1999); World Heritage Convention (1972); Convention on Migratory Species (CMS) (Bonn) (1985); Convention on Wetlands of International Importance (Ramsar Convention) (1971); Convention on Sustainable Management of Lake Tanganyika (2003); African Convention on the Conservation of Nature and Natural Resources (1968); and United Nations Convention on the Law of the Sea (1982). On the other hand, Tanzania is a member of several regional blocks including Southern Africa Development Community (SADC); East Africa Cooperation (EAC); African Union (AU); and Indian Ocean Rim Association for Regional Cooperation (IOR-ARC).

Informed decisions about avoiding, reducing and reversing land degradation, the LDN response hierarchy, must include critical consideration of enabling conditions such as the regulatory environment, willingness to enforce regulations, and enforcement capacity, among other enabling conditions. In the past before the enactment of the Environmental Management Act in 2004, the body of laws in Tanzania that provided for a right to a clean and healthy environment was based on shaky ground. In Tanzania to date the National Environment Management Council (NEMC) is the one which is mandated to coordinate environment issues in Tanzania while the Vice President’s Office through the Division of Environment handles all key policy issues and strategies aiming for sustainable environmental conservation. The object and purpose for which NEMC is established is to undertake environment management law enforcement, compliance, review and monitor environmental impact statements, research and awareness rising. The nation’s environmental integrity through the Tanzania Development Vision 2025 focused toward achieving high quality of livelihood for all, good governance, the rule of law and building a strong and competitive economy that can effectively withstand global competition as well as observance of high quality environmental standards for sustainable development. Although Tanzania has put efforts to manage environment, in particular land degradation, this is still a challenge, which needs to be addressed (Figure 1). The legal and institutional framework for environmental management in the country is guided by the Environmental Management Act (URT, 2004; URT, 2018). To achieve its
obligations the Division of Environment was established in 1991 under the Ministry of Natural Resources and Tourism. In 1995, the Division of Environment was transferred to the Vice President’s Office to give it the requisite priority and attention on implementing the environmental agenda. In the country for example SLM, also referred to as ‘ecosystem approach’, ensures long-term conservation of the productive capacity of lands and the sustainable use of natural ecosystems. The challenge is that adequately strong policy action for SLM is missing, and a coherent and evidence-based policy framework addressing it is still lacking (Nkonya et al., 2013).

Land degradation in Tanzania affects the majority of the people and is a major problem in the dry land areas and refugee-impacted areas. Population increase puts pressure on land resources to produce food and other needs of the people, often without improved technical inputs and proper land management. Various initiatives were launched in the 1970s and 1980s to combat land degradation, but the UNCCD provided Tanzania with a unique opportunity to join forces with the international community to fight land degradation and poverty.

Since Tanzania ratified the UNCCD in 1997, several initiatives have been undertaken to implement it. Political will and commitment by the government has increased and policies and strategies for socio-economic transformation of the economy have mainstreamed environmental issues. The first and second national reports on the implementation of the UNCCD have outlined the process of reviewing and updating the policies and action programmes to include environmental and land degradation issues, for example in the PRSP, ASDS, RDS and some sectoral policies and strategies. Priorities in sustainable land management include: capacity development particularly at the district and local community levels to train NGOs and CBOs in project formulation, implementation and monitoring; education, sensitisation and awareness creation for the various stakeholders to share information on sustainable land management; and convening a donors’ consultative forum for partnership building for resource mobilisation for NAP implementation.

3.3 LDN Baseline data

Baseline data is the information, which is required to assess the status of land degradation and guide how land degradation can be avoided-reduced-reversed in Tanzania. In setting targets for LDN, three indicators and corresponding data sets have been used: i) For the assessment of land use/cover change, available local data have been used and ii) For the assessment of land productivity and soil organic Carbon, global default data provided by the UNCCD Secretariat through the LDN TSP has been used.

3.3.1 Land Use/Cover

This refers to the observed physical cover of the Earth’s surface which describes the distribution of vegetation types, water bodies and human-made infrastructure. The rate of deforestation as per data provided by RCMRD, which is based on sampling in Tanzania, was found to estimate actual deforestation (close with data by NAFORMA) in the country (URT, 2014).

Major changes detected within a period of ten years (2000-2010) was related to forest cover as well as shrubs, grasslands and sparsely vegetated areas a decrease of 6.1% and 7.7% respectively. The analysis of land use cover (LUC) shows that crop land within the same period increased by 72.7% probably due to increased human population whose livelihood depend on agriculture. Based on that,
the NWG agreed to use local data on land use cover/change from RCMRD (Annex 7.3) for setting LDN targets. Since both shrubs, grasslands and sparsely vegetated as well as forests cover large areas respectively, sustainable conservation needs to be implemented jointly with measures to increase productivity of cropland to support community livelihoods.

A number of LUC analysis have been conducted giving different results, for example global default data provided by UNCCD secretariat measured deforestation of 238,600 hectares from 2000 to 2010 as a net change which is equivalent to 23,860 ha/year. National Forest Resources Monitoring and Assessment (NAFORMA) reported annual change of 81,000 ha/year for the same period while FREL reported deforestation of 469,000 ha/yr from year 2002 to 2013. On the other hand, Regional Centre for Mapping of Resource for Development (RCMRD) covering SADC countries including Tanzania reported measured deforestation change of 1,579,000 hectares for ten years period (2000-2010). This is equivalent to a change of 157,900 ha/year. Based on the four data sources above there are significant disparities. Some of these data are too coarse not reflecting the reality of what is happening on the ground. Based on this RCMRD have been used on LUC assessment.

3.3.2 Land productivity

Results (Annex 7.3) indicate that in general there is a declining biomass production in all land cover categories in Tanzania due to a numbers of factors including deforestation, declining soil fertility particularly loss of organic Carbon, nutrients loss and soil erosion. Declining land productivity was high in crop land as compared to shrubs, grasslands, sparsely vegetated and forest land, which is the least. Causes for declining productivity, which are either direct or indirect, have be assessed see table 2.

Agriculture production is one of the major sources of livelihood and economic development in Tanzania as it feeds people. Crop land has a highest value showing early signs of declining productivity as compared to land under forest. This suggests that forest conservation practices implemented in Tanzania has raised awareness to stakeholders, particularly to the communities practicing sustainable forest conservation which was revealed during hotspot verification (Annexes 7.5 and 7.6). Since crop land covers large areas where communities are involved, particularly in rural areas, an increase of human population associated with an expansion of agriculture create pressure on agricultural land. The effort of Tanzania to conserve land resources is reflected by an increase in land productivity in the following increasing order: forest, crop land and shrubs, grasslands and sparsely vegetated areas respectively (Annex 7.3). In target setting, Tanzania aims to maintain stability of land productivity by 2030 based on targets set. The intention of Tanzania is during the 12 years to come (year 2030) to recover nearly 75% of the land, which has shown declining productivity and land degradation. The implementation or corrective measures needs to be ensured as recommended and should be monitored accordingly (see Table 3).

3.3.3 Soil organic Carbon

Soil organic Carbon (Appendix 7.3) in Land Use/Cover Category range from 32.6 to 44.8 ton/ha based on global data. It is low in bare land and other areas but is high in land covered by shrubs, grasslands and sparsely vegetated areas and forest. Preliminary analysis of soil organic Carbon by NAFORMA is comparable to global data. Tanzania through NCMC of Sokoine University of Agriculture collected strategic soil samples to measure soil organic Carbon, but such soils are not yet analysed due to financial constraints.
3.3.4 Hotspot data
An analysis of both, local and global default data on land use/cover change, land productivity and soil organic Carbon, which the NWG validated, were combined to identify hotspot areas for Tanzania (Figure 1). The NWG listed a number of drivers of land degradation for the identification of hotspots, which were verified in the field with RAS, DAS as well as with natural resource officers (Appendices 7.5 and 7.6). These were subsequently validated at the workshop held on 17th August 2018 in Morogoro. Drivers identified were overgrazing, poverty, land tenure system, scarcity of firewood/charcoal making, population increase, poor farming practices and climate change. These drivers are common in most places with some differences in other areas.

![Figure 1: Hotspot areas for Tanzania with different levels of land degradation](image)

Source: Local LUC overlaid with Global Default Data on LP and SOC (URT, 2018)

The NWG prepared a hotspot table 3, which is in broad agreement with severe degraded regions in Tanzania (URT, 2014 pg 109). Severe degraded areas appear in many parts of Tanzania, which
indicate an alarming situation, if measures are not taken. With respect to the LDN process, the information accruing from this study is reflected in targets set and need to be implemented through the proposed and agreed measures.

**Table 3: Identified Hotspot areas in Tanzania derived from local and global data**

<table>
<thead>
<tr>
<th>Hotspot area</th>
<th>Zone</th>
<th>Indicators</th>
<th>Driver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dodoma</td>
<td>Semi arid central</td>
<td>Decline in Productivity</td>
<td>Agriculture i.e. convention of forest land to cropland</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High soil erosion (high gullies)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bare lands (signs of desertification)</td>
<td></td>
</tr>
<tr>
<td>Lindi</td>
<td>Semi arid southern coast</td>
<td>large area very, severely degraded</td>
<td>Livestock keeping, expansion of agriculture, uncontrolled fire, deforestation</td>
</tr>
<tr>
<td>Tabora</td>
<td>Semi arid western</td>
<td>large area severely degraded canopy cover reduced</td>
<td>Agriculture i.e. tobacco farming</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Grazing i.e. large herds of cattle</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Shifting cultivation</td>
</tr>
<tr>
<td>Singida</td>
<td>Semi arid central</td>
<td>Very severe, severe degraded, moderate degraded</td>
<td>Agriculture i.e. convention of forest land to cropland</td>
</tr>
<tr>
<td>Shinyanga</td>
<td>Semi arid lake zone</td>
<td>Very severe degraded, moderate degraded -</td>
<td>Agriculture i.e. cotton, rice farming</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Grazing i.e. large herds of cattle</td>
</tr>
<tr>
<td>Arusha</td>
<td>Northern highland</td>
<td>Bare lands, soil erosion and gullies</td>
<td>Agriculture i.e. maize, farming</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Grazing i.e. large herds of cattle</td>
</tr>
</tbody>
</table>

4.0 SETTING LDN TARGETS

Policy measures to achieve LDN (URT, 2017) are primary means for the government to communicate nationally and internationally the planned steps to achieve LDN. The LDN targets reflect Tanzania’s ambition for achieving LDN taking into account the magnitude and status of land degradation in the country, social economic activities, natural resource management, environmental issues and ecosystem based on the LDN response hierarchy to avoid, reduce, and reverse land degradation and desertification.

In doing so, a number of policy measures in Tanzania have been put in place showing the commitment on environmental issues in the country. These include the ratification of the UNCCD, UNFCCC and the UNCBD conventions. Tanzania also has a number of strategies which confirm the country’s commitment to achieve LDN, including: i) Climate change adaptation strategy; ii) National Adaptation Programme of Action (NAPA); iii) Poverty Reduction Strategy Paper; iv) Agriculture Sector Development Program 11; v) the National Action Programme (NAP); vi) National Environment Action Plan (NEAP); vii) Environmental Management Act No. 20; viii) National Strategy for Growth and Poverty Reduction and others. Since agriculture in Tanzania is one of the key sectors which
contribute to the national income generation and poverty alleviation, it is the one which contributes to land degradation.

In general LDN cuts across many sectors and among them are the line Ministries that mainly deal with natural resources, particularly land, such as Ministries of Agriculture, Land, Finance, Water Resources, Natural Resource and Tourism, Livestock and Fisheries, Energy, VPO (Division of Environment) under which the UNCCD National Focal Points reside, as well as the Ministry of Local Government. All these Ministries are part of NWG they provided political and strategic support during the LDN TSP. On the other hand they are influencing stakeholders and other sector ministries to support the LDN initiative. In supporting LDN in Tanzania various donor and development partners including DFID, UNDP, FAO and World Bank frameworks provide financial grounds for supporting achieving maximum impact on LDN.

It is widely recognized that land degradation is a serious and enormous problem that both central and local governments alone cannot tackle the problem. Consequently strong technical and financial support from partners is required, if LDN implementation is going to succeed. Hence there are a number of ‘Investment Programmers and Initiatives’ directly related to SLM/LDN, which are supported by different international development partners such as UNDP, FAO, EU, IFAD, GEF, DFID, WWF and others. Technical measures mainly address the direct drivers of land degradation such as non-sustainable agriculture, overgrazing by livestock, overexploitation of forests and woodlands, urbanisation and resettlement and other natural causes (URT, 2014).

The interpretation of the three LDN indicators and related data entailed consultations and collective decision making by the NWG through its two meetings and validation with small groups established. Tanzania has set LDN targets at national scale focusing more on hotspot areas with ambition to reach LDN targets for the entire country in with 12 years to come in order to align to the SDG target (URT, 2014). LDN targets have also been set for achieving a neutral (no net loss) or improved (net gain) state allowing Tanzania to focus on areas that have been identified as major degradation “hot spots” and/or are considered to be a high-value priority in achieving LDN. NFP UNCCD and respective sectors will also be able to give priority for land use cover, land productivity and soil organic Carbon by giving a priority in hotspots areas within their regional boundaries.

The NWG has also ensured ownership and evaluated trade-offs early on in the planning process. Effort has also been made to ensure that all targets set are measurable according to the LDN indicator framework endorsed at national and global levels. All targets were validated by the NWG and endorsed by the Permanent Secretary, Vice President Office.

**LDN targets at the national scale**

- LDN is achieved by year 2030 as compared to year 2010 and an additional 25% of the forest has improved (net gain).

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

- LDN is achieved in the land degradation hotspots: Dodoma, Singida, Tabora, Shinyanga and Manyara regions by 2030 as compared to 2010 additional 25% of the degraded hotspot regions has improved (net gain)
Specific LDN targets and measures based on targets to avoid, minimize and reverse land degradation

- **Restore 11,011,950ha of forests through sustainable forest management**, including initiatives such as; i) Strategic Investment Program for SLM in Sub-Saharan Africa (SIP); ii), Fostering Sustainability and Resilience for Food Security in Sub-Saharan Africa; iii) Global Partnership on Wildlife Conservation and Crime Prevention for Sustainable Development (PROGRAM) and others including upgrading of forest reserve to nature forest reserve and generation of natural forests. These will implement measures such as promoting indigenous forestation practices, agroforestry, destocking, identifying/promoting alternative sources of energy, reinforcing laws and bylaws of natural resource management, promoting sustainable crop livestock intensification.

- **Prevent and avoid decline of land productivity of forests on 2,640,600ha by 2030.** Key measures include the improvement of participatory forest management, strengthening the implementation and supervision of forest and environment policies, promotion of the regeneration of forest species and control of selective encroachment.

- **Improve land productivity of shrub and grassland on 1,714,500ha by 2030.** Key measures include promote fodder bank, farm wood supply and efficient energy utilization, improvement of traditional rangeland management, promote sustainable livestock practices, support livestock infrastructure in the rangeland, SLM practices to avoid overgrazing and SLM practices to avoid soil erosion and fire control.

- **Improve land productivity of croplands on 8,462,500.5 ha by 2025.** Measures include adoption of sustainable land and water management innovation and practices, promotion of integration of crop, livestock and fisheries, mixed farming practices, climate smart agriculture practices, introduction of landscape management based on agroforestry technologies, promotion of integrated soil fertility management, use of improved crop seeds, sustainable management of natural resources, strengthening of local agriculture innovative systems. Others include control population pressure, control overstocking and sporadic burning.

- **Improve land productivity of wetlands on 361,275ha by 2030.** Measures include the promotion of conjunctive use of surface and ground water, rainwater harvesting technologies (construction of strategic dams), promote integrated management practices and development, sustainable management of wetlands, controlled agriculture encroachment, avoid mining and waste dumping in water bodies, river training/river bank stabilization, sustainable fisheries, catchment conservation and restoration.

- **Increase soil organic Carbon in cropland to 54.5tons/ha by 2030** through cereal legume integration, crop livestock integration, crop residue management, cover crop, agro forestry, promote use of organic fertilizers (Green manuring, compost, and farm yard manure).

- **Reduce soil erosion (loss of top soils) by 19tons/ha** through sustainable land management practices, soil and water conservation practises, cover crop, intercropping, good agricultural practices, agro forestry, crop residue management.

Table 4 summarizes negative trends and corrective measures based on land use/cover change, land productivity, soil organic Carbon stock and soil erosion.
<table>
<thead>
<tr>
<th>Negative trends</th>
<th>Corrective measures</th>
</tr>
</thead>
</table>
| Forest showing early signs of decline and having declining productivity | • Prevent and avoid decline of land productivity in forests through improved participatory forest management  
• Strengthen implementation and supervision of forest and environment polices  
• Regeneration of forest species  
• Control selective encroachment  
• Upgrading of forest reserve to nature forest reserve and generation of natural forests.  
• Sustainable management of Game reserves |
| Shrubs, grasslands and sparse vegetation showing early signs of decline | • Promote fodder bank, farm wood supply and efficient energy utilization.  
• Improve traditional rangeland management.  
• Promote sustainable livestock practices.  
• Support livestock infrastructure in the rangeland.  
• SLM practices to avoid overgrazing  
• SLM practices to avoid soil erosion  
• Fire control |
| Cropland showing declining productivity and early signs of decline | • Adopt sustainable land and water management innovations and practices.  
• Promote integration of crop, livestock and fisheries.  
• Mixed farming practices  
• Popularize Climate smart agriculture practices.  
• Introduce landscape based agro forestry technologies.  
• Popularize integrated soil fertility management.  
• Use of improved crop seeds.  
• Sustainable management of natural resources  
• Strengthen local agriculture innovation systems |
| Wetlands and water bodies showing declining productivity and early signs of decline | • Promote conjunctive use of surface and ground water.  
• Promote rainwater harvesting technologies (construction of strategic dams).  
• Promote integrated water resource management and development  
• Sustainable management of wetlands  
• Controlled agriculture encroachment  
• Avoid mining and waste dumping in water bodies.  
• River training/river bank stabilization.  
• Sustainable fisheries  
• Catchment conservation and restoration |
| Low soil organic Carbon on croplands | • Cereal legume integration.  
• Crop livestock integration.  
• Crop residue management.  
• Cover crop.  
• Agro forestry  
• Promote use of organic fertilizers (Green manuring, compost, FYM) |
### Loss of top soil/soil erosion
- Sustainable land management practices
- Soil and water conservation practices.
- Cover crop.
- Intercropping.
- Good agricultural practices
- Agro forestry
- Crop residue management

#### 5.0 ACHIEVING LDN
This is an ongoing process, which includes the identification of LDN transformative projects and programmes (URT, 2018), raising awareness of different government sector stakeholders and other institutions to engage them in the NWG in Tanzania. In general some of the transformative project/programs have already been implemented, for example the Sustainable Management of Miombo Ecosystems in Western Tanzania project, Kilombero and Rukwa Projects on Land Management, Lake Victoria Environmental Management Project II as well as Sustainable Management of Mount Kilimanjaro Ecosystem Project in Kilimanjaro. A number of projects are still under implementation (Table 5) while others have been approved but are not yet implemented (Tables 6). For the projects which are not yet implemented, the Government will ensure that projects and programs will address the LDN targets set.
### Table 5: Relevant ongoing GEF funded LDN related projects in Tanzania with support from main donors/international cooperation partners

<table>
<thead>
<tr>
<th>ID</th>
<th>Title</th>
<th>Focal Areas</th>
<th>Implementing Agencies</th>
<th>Fund Source</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>2139</td>
<td>SIP: Tran boundary Agro-Ecosystem Management Programme for the Kagera River Basin (Kagera TAMP)</td>
<td>Land Degradation</td>
<td>Food and Agriculture Organization</td>
<td>GEF Trust Fund</td>
<td>GEF - 4</td>
</tr>
<tr>
<td>2597</td>
<td>Cogen for Africa</td>
<td>Climate Change</td>
<td>United Nations Environment Programme</td>
<td>GEF Trust Fund</td>
<td>GEF - 3</td>
</tr>
<tr>
<td>3000</td>
<td>SFM: Sustainable Management of the Miombo Woodland Resources of Western Tanzania</td>
<td>Biodiversity, Land Degradation, Climate Change</td>
<td>United Nations Development Programme</td>
<td>GEF Trust Fund</td>
<td>GEF - 4</td>
</tr>
<tr>
<td>3399</td>
<td>SIP: Lake Victoria Environmental Management Project II</td>
<td>International Waters, Land Degradation</td>
<td>The World Bank</td>
<td>GEF Trust Fund</td>
<td>GEF - 4</td>
</tr>
<tr>
<td>4541</td>
<td>Fifth Operational Phase of the GEF Small Grants Program - Implementing the program using STAR resources I</td>
<td>Biodiversity, Land Degradation, Climate Change</td>
<td>United Nations Development Programme</td>
<td>GEF Trust Fund</td>
<td>GEF - 5</td>
</tr>
<tr>
<td>5185</td>
<td>Support to Alignment of Tanzania's National Action Plan with the UNCCD's 10 Year Strategic Framework and Support National Reporting</td>
<td>Land Degradation</td>
<td>United Nations Development Programme</td>
<td>GEF Trust Fund</td>
<td>GEF - 5</td>
</tr>
<tr>
<td>Project Code</td>
<td>Project Title</td>
<td>Focus Areas</td>
<td>Implementing Agency</td>
<td>Funding Source</td>
<td>GEF Round</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>-------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>5463</td>
<td>Securing Watershed Services through Sustainable Land Management in the Ruvu and Zigi Catchments, Eastern Arc Region, Tanzania</td>
<td>Land Degradation</td>
<td>United Nations Development Programme</td>
<td>GEF Trust Fund</td>
<td>GEF - 5</td>
</tr>
<tr>
<td>9132</td>
<td>Food-IAP: Reversing Land Degradation Trends and Increasing Food Security in Degraded Ecosystems of Semi-arid Areas of Central Tanzania</td>
<td>Land Degradation, Biodiversity, Climate Change</td>
<td>International Fund for Agricultural Development</td>
<td>GEF Trust Fund</td>
<td>GEF - 6</td>
</tr>
<tr>
<td>9981</td>
<td>GEF Support to UNCCD 2018 National Reporting Process - Umbrella I</td>
<td>Land Degradation</td>
<td>United Nations Environment Programme</td>
<td>GEF Trust Fund</td>
<td>GEF - 6</td>
</tr>
</tbody>
</table>
Table 6: List of potential LDN transformative projects or programs related to land degradation for LDN under development in Tanzania

<table>
<thead>
<tr>
<th>ID</th>
<th>Title</th>
<th>Focal Areas</th>
<th>Implementing Agencies</th>
<th>Fund Source</th>
<th>Period</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2757</td>
<td>SIP PROGRAM: Strategic Investment Program for SLM in Sub-Saharan Africa (SIP)</td>
<td>Land Degradation</td>
<td>The World Bank</td>
<td>GEF Trust Fund</td>
<td>GEF - 4</td>
<td>Concept Approved</td>
</tr>
<tr>
<td>9070</td>
<td>Food-IAP: Fostering Sustainability and Resilience for Food Security in Sub-Saharan Africa - An Integrated Approach (IAP-PROGRAM)</td>
<td>Biodiversity, Land Degradation, Climate Change</td>
<td>International Fund for Agricultural Development</td>
<td>GEF Trust Fund</td>
<td>GEF - 6</td>
<td>Concept Approved</td>
</tr>
<tr>
<td>9071</td>
<td>Global Partnership on Wildlife Conservation and Crime Prevention for Sustainable Development (PROGRAM)</td>
<td>Biodiversity, Land Degradation, Climate Change</td>
<td>The World Bank</td>
<td>GEF Trust Fund</td>
<td>GEF - 6</td>
<td>Concept Approved</td>
</tr>
<tr>
<td>9264</td>
<td>TRI The Restoration Initiative Fostering Innovation and Integration in Support of the Bonn Challenge</td>
<td>Biodiversity, Land Degradation, Climate Change</td>
<td>International Union for Conservation of Nature</td>
<td>GEF Trust Fund</td>
<td>GEF - 6</td>
<td>Concept Approved</td>
</tr>
<tr>
<td>9857</td>
<td>GEF SGP Sixth Operational Phase- Strategic Implementation using STAR Resources, Tranche 2 (Part IV)</td>
<td>Biodiversity, Land Degradation, Climate Change</td>
<td>United Nations Development Programme</td>
<td>GEF Trust Fund</td>
<td>GEF - 6</td>
<td>Concept Approved</td>
</tr>
</tbody>
</table>
6.0 CONCLUSIONS

6.1 Overall achievements

It can be concluded that LDN target setting is a conceited process which entailed literature review, consultations and analysis of global default data provided by the UNCCD Secretariat and available local national data related to the three LDN indicators, i.e. land cover change, land productivity and soil organic Carbon. The use of local data on land use cover change has been found to be more realistic for setting targets as compared to global default data, while for land productivity and soil organic data global default data has been used for setting the LDN baseline and LDN targets. These indicators have also been used to identify LDN hotspots in Tanzania.

In general, land degradation is a serious and enormous problem that governments alone cannot tackle without involving other key stakeholders. In the LDN target setting process, the establishment of leverage and formation of a NWG have been crucial. Although land degrading is common in most parts of Tanzania, identified hotspots in specific areas have been verified. They are proposed to form the basis for implementing action to achieve the LDN targets. There is a need of having a strong technical and financial support from both the government and international partners in order to succeed in achieving the LDN targets. Furthermore, the Government should consider mobilizing other financial resources from stakeholders who have interests in combating land degradation. These institutions include the private sector, NGOS or CSOs that are nationally or internationally situated. Land degradation is a global challenge that attracts different countries globally.

6.2 Major lessons learned

It has been learnt that availability of up-to-date and comparable data is one of the challenges encountered. For example the existence of various land use/cover assessments done by different institutions in Tanzania shows different rates of deforestation. It was reported by NWG members that soil samples have been collected by NCMC for analysis to get information on current status of SOC in the country. To date soil samples have however not yet been analysed for soil organic Carbon due to financial constraint. Therefore financial support is required in order to accomplish samples analysis to make use of such data.

To achieve the LDN targets set, governmental commitment and willingness to address land degradation and hence desertification is highly needed. This must be implemented staring from local levels to strengthen and support all potential initiatives. On the other hand due to lack of data there is need to have updated national data on land use cover change, land productivity and soil organic Carbon.
7.0 REFERENCES

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URT. (2018). Key Policy-technical measures to achieve LDN.

URT. (2018). Land Degradation Neutrality trends and drivers which are both direct and indirect.

### 8.0 ANNEX

#### 8.1 List of LDN National Working Group Members

**TANZANIA LAND DEGRADATION NEUTRALITY TARGET SETTING WORKING GROUP (2018)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faustin Kamuzora</td>
<td>Permanent Secretary</td>
<td>VPO</td>
</tr>
<tr>
<td>Richard Muyungi</td>
<td>Director</td>
<td>VPO, Division of Environment</td>
</tr>
<tr>
<td>Joseph Qamara</td>
<td>Assistant Director</td>
<td>VPO, Division of Environment</td>
</tr>
<tr>
<td>Majule</td>
<td>Professor, Consultant</td>
<td>Institute of Resource Assessment, UDSM</td>
</tr>
<tr>
<td>Joseph Kihaule</td>
<td>Principal Agriculture Officer</td>
<td>VPO, Division of Environment</td>
</tr>
<tr>
<td>Jimreeves Kawiche</td>
<td>Principal Officer</td>
<td>Ministry of Finance</td>
</tr>
<tr>
<td>Kimaro Antony</td>
<td>Coordinator</td>
<td>ICRAF</td>
</tr>
<tr>
<td>Juma Wickama</td>
<td>Coordinator</td>
<td>National Soil Service, ARI, Mlingano</td>
</tr>
<tr>
<td>Hashim Njowele</td>
<td>Senior Technician</td>
<td>National Bureau of Statistics</td>
</tr>
<tr>
<td>Japhet Kashaigili</td>
<td>Professor, Lecturer</td>
<td>Sokoine University of Agriculture</td>
</tr>
<tr>
<td>Zainabu Shabani</td>
<td>Coordinator, NFP UNCCD</td>
<td>VPO, Division of Environment</td>
</tr>
<tr>
<td>Ms Olipa Simon</td>
<td>Senior GIS technician</td>
<td>Institute of Resource Assessment, UDSM</td>
</tr>
<tr>
<td>Ezekiel Edward</td>
<td>Director</td>
<td>Agriculture Research Institute Hombolo, Dodoma</td>
</tr>
<tr>
<td>Elirehema Swai</td>
<td>Senior Agricultural Research</td>
<td>National Land use Planning Commission</td>
</tr>
<tr>
<td>Jerome Nchimbi</td>
<td>Director</td>
<td>National Carbon Monitoring Center</td>
</tr>
<tr>
<td>Deo Shirima</td>
<td>Senior Lecturer</td>
<td>National Carbon Monitoring Center</td>
</tr>
<tr>
<td>Joseph Mwalugelo</td>
<td>Technical Manager</td>
<td>Tanzania Forest Conservation</td>
</tr>
<tr>
<td>Conrad Ndomba</td>
<td>Senior Livestock Field Officer</td>
<td>Livestock and Fisheries</td>
</tr>
<tr>
<td>Evarist Nashanda</td>
<td>Senior Forest Officer</td>
<td>National Forest Management Agency</td>
</tr>
<tr>
<td>Ms Mary M, Juanita</td>
<td>Principal Agricultural Offices</td>
<td>Ministry of Agriculture, Department of Environment, Environment,</td>
</tr>
<tr>
<td>John Chikomo</td>
<td>Executive Director</td>
<td>Journalist of Environment in Tanzania</td>
</tr>
<tr>
<td>Latif Armar</td>
<td>Assistant Director</td>
<td>World Bank</td>
</tr>
<tr>
<td>Geofrey Bakanga</td>
<td>Management Officer</td>
<td>Food and Agriculture Organization (FAO)</td>
</tr>
<tr>
<td>Timotheo Mande</td>
<td>Principal Forest Officer</td>
<td>VPO, Division of Environment</td>
</tr>
</tbody>
</table>
8.2 Dates of working group meetings and workshops

The inception workshop was organized by Vice President’s Office (VPO) as UNCCD focal point and lead entity for the LDN target setting process in Tanzania on 4th July, 2017 at NIMR in Dar es Salaam. The aims of the meeting were to i) understand what is LDN Process and bringing together National Working Group; ii) clarify roles and responsibilities for the LDN Working group members iii) sensitize and create awareness on the concept LDN to working group and iv) seek inputs and views on LDN target setting process. The meeting before opened it started with self-introductions, welcoming remarks and then it was officially opened Deputy Permanent Secretary (VPO) on behalf of the Permanent Secretary, Vice President’s Office. He recognized the importance he put on the Land Degradation Neutrality Target Setting process for Tanzania. An international consultant on LDN made a presentation on LDN and the process of setting targets in various countries and this was followed by a presentation on what Tanzania is going to respond on LDN TSP. This was presented by the UNCCD National Focal Point Coordinator and national consultant. After presentations there was a detailed discussion on baseline data availability related to land use, land productivity and soil organic Carbon. Thereafter the way forward on the overall process of setting LDN targets for Tanzania was agreed with focus on data collection from various sources, processing, discussion and target setting to be discussed in the next meeting.

A second workshop was held in Morogoro on 17th August 2018 with the aim of bringing together the NWG to discuss findings and discuss data on land use/cover change, land productivity and soil organic Carbon as well as identify LDN hotspots. The workshop also discussed a draft report on LDN Targets prepared by the LDN TSP national consultant, which was then used by NWG to improve it based on the data presented (national and other data available) to come up with realistic targets. Comments and recommendations were given by members, which was further discussed in three major groups formed: the first one addressing land use/cover change, soil organic Carbon and hotspot while the second group discussed data on land productivity and land degradation issues such as causes of land degradation and indicators. Both groups deliberated on LDN targets set and presented and improved them accordingly. Group works were then requested to make presentation, which was followed by discussions. After group discussion and before closure of the meeting, a small group of 4 experts was formed to ensure that all the information and data required to be used should be agreed upon and submitted to a consultant with a period of seven days (by 30th August, 2017). A way forward was also presented and among them was to prepare a meeting report, work on hotspots particularly validation and then continue with other LDN setting blocks as planned. Subsections presents other events followed a plan which was indicated in a workshop schedule. A validation workshop was organized by VPO at Sokoine University of Agriculture in Morogoro on 17th August 2018 to validate LDN Targets set and hotspot areas.
### 8.3 LDN baseline Table

#### 8.3.1 Land Use Cover change from 2000 to 2010 based on local data by RCMRD

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sq km*</td>
<td>sq km</td>
<td>sq km</td>
</tr>
<tr>
<td>Forest</td>
<td>259463</td>
<td>243674</td>
<td>-15790</td>
</tr>
<tr>
<td>Shrubs, grasslands and sparsely vegetated areas</td>
<td>471129</td>
<td>434792</td>
<td>-36337</td>
</tr>
<tr>
<td>Croplands</td>
<td>98632</td>
<td>170427</td>
<td>71795</td>
</tr>
<tr>
<td>Wetlands*****</td>
<td>79159</td>
<td>81877</td>
<td>2718</td>
</tr>
<tr>
<td>Artificial areas</td>
<td>1337</td>
<td>2265</td>
<td>929</td>
</tr>
<tr>
<td>Bare land and other areas</td>
<td>47391</td>
<td>24075</td>
<td>-23316</td>
</tr>
<tr>
<td><strong>Total (sq km)</strong></td>
<td>957,110.78</td>
<td>957,110.62</td>
<td>-0.16</td>
</tr>
</tbody>
</table>
8.3.2 Land productivity and SOC from 2000 to 2010 based on global default data from UNCCD secretariat

<table>
<thead>
<tr>
<th>Land Use/Cover Category</th>
<th>Net land productivity dynamics (NetLPD)** (sq km)</th>
<th>Soil organic Carbon (2000)**</th>
<th>ton/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest</td>
<td>Declining 11752, Early signs of decline 23456, Stable but stressed 22148, Stable not stressed 120390, Increasing 66496, No Data*** 801</td>
<td>ton/ha 44.1</td>
<td></td>
</tr>
<tr>
<td>Shrubs, grasslands and sparsely vegetated areas</td>
<td>27584 22860 19527 119980 31748 1699 41.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Croplands</td>
<td>63526 49308 43378 184288 54134 2584 44.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetlands****</td>
<td>3661 1156 1353 8317 1626 1041 41.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artificial areas</td>
<td>263 86 88 520 64 31 41.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bare land and other areas</td>
<td>269 9 150 286 5 216 32.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Carbon</td>
<td>12% 11% 10% 49% 17% 1% 43.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (sq km)</td>
<td>107054 96875 86643 433781 154072 6372</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Average Carbon: 43.6 ton/ha
8.4 Key documents prepared during the LDN target setting process in Tanzania

Based on the modalities for effective implementation of the LDN TSP at country level in Tanzania, the following key documents have been prepared by the national LD TSP experts and submitted to National Focal Point UNCCD and to Global Mechanism;

a) National Leverage Plan
b) Collection and analysis of baseline data on
   a. Land use cover change
   b. Land degradation and associated causes
   c. Soil organic Carbon
   d. Soil erosion
   e. Land productivity
c) Draft governmental high-level note of Measures to Achieve the National LDN Targets have prepared
d) LDN legal and institutional environment
e) Identification of LDN Transformative Project Opportunities in Tanzania
f) Key Policy-technical measures to achieve LDN
g) Land Degradation Neutrality trends and drivers
h) LDN hotspot map for Tanzania
## 8.5 Validations with Regional and Districts Administrations Secretaries

### Major comments received about land degradation in Hotspot areas

<table>
<thead>
<tr>
<th>Region</th>
<th>RAS</th>
<th>DAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shinnying</td>
<td>There is high degradation especially in the Districts of Kishapu, Kahama rural and Shinyanga Rural. The main causes of degradation are overgrazing, shifting cultivation, artisanal mining and poor farming practices. Others include population increase; lack of land use plans; and tree cutting for charcoal and firewood. Furthermore, most of the areas identified in the map tally with the actual situation on the ground</td>
<td>Parts of Shinyanga Municipal Council are degraded but most of the areas are urbanized in terms of buildings, roads, industries and human settlement in general</td>
</tr>
<tr>
<td>Simiyu</td>
<td>Faces land degradation as stated in the National Action Program to Combat Desertification (2014–2018). The main causes of include low rainfall (Unimodal), tree cutting for expansion of farms, lack of land use plans, increase of livestock from near by Regions</td>
<td>As at the Municipal area most of the places have been developed for residence, some small industries and urban agriculture</td>
</tr>
<tr>
<td>Tabora</td>
<td>Enriched with Miombo Ecosystem. However, land is unequivocal due to invasion of livestock from nearby regions and Countries; over dependence on natural resources especially forests for charcoal, firewood and construction. Others include climatic condition of the area as an area is unimodal which doesn’t favour much of the efforts of restoration especially tree planting; inadequate extension services; inadequate resources (Human and Financial); lack of land use plans</td>
<td>As other Municipalities degradation can be measured by developmental scenarios. Large part of Tabora Municipality is developed for residence and industries</td>
</tr>
<tr>
<td>Singida</td>
<td>Most areas are continuously degraded. Several factors contribute to land degradation. Among them include lack of awareness on environmental management and conservation; improper support from some, forest degradation for example Mgori Forest Reserve; - Forests encroachment; cutting of trees for farm enlargement; overgrazing; and the general habit of cutting trees</td>
<td>Singida was known before to have trees, but now trees are in patches. However this is contributed by several factors but specifically to the Municipal is due to developmental activities and residence</td>
</tr>
<tr>
<td>Dodoma</td>
<td>The Region also faces degradation problems where by major causes are expansion of farms through cutting of existing forests; Overgrazing due to influx of livestock from other Regions. Inadequate resources of human, finance and equipment is also a reason</td>
<td>Like any other Municipalities in the Country Dodoma Municipality is under speedy development. Construction of infrastructures, residence,</td>
</tr>
<tr>
<td>Morogoro (Mvomero and Kilosa)</td>
<td>The region is still considered among the Regions in Tanzania which is still considered to be intact. However, expansion for farms (Rice plantation) and invasion of livestock from other Regions. Furthermore, competition for land between farmers and pastoralists has led to severe conflicts between these two groups.</td>
<td>Most of the Morogoro Municipality is developed with industries, roads, residences and other infrastructures. However, degradation still take place especially in Uluguru Mountains where there has been regular burning of forests for hunting, banana and spices plantations.</td>
</tr>
</tbody>
</table>
### Major comments received about land degradation in Hotspot area

<table>
<thead>
<tr>
<th>Region/Districts</th>
<th>Feedback from Natural Resources, Agriculture Officers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shinyanga</strong></td>
<td>The rate of land degradation in Shinyanga is in alarming state at the moment. The team agreed by 100% that land degradation is taking place and this is caused by social, economic, cultural and environmental factors. Other issues include conflicts of sectors on land use (agriculture, forest, mining etc.), lack of land use plan, population increase and mining activities itself. There are strategies in place to address land degradation and in some case awards have been given by VPO. Institutions and organizations involved in combating land degradation are ICRAF, NAFRAC, MANESA)</td>
</tr>
<tr>
<td><strong>Simiyu</strong></td>
<td>Naturally the large area is not productive however land degradation is a challenge and wide spread in potential areas. Most of the areas which were potential in previous years are now degrading due to factors mentioned for Shinyanga. Efforts made includes acacia tree planting traditionally known Ngitili which have enabled people to undertake sustainable harvesting of trees. Also trees for planting are also annually offered to communities</td>
</tr>
<tr>
<td><strong>Tabora</strong></td>
<td>Agriculture expansion particularly Tobacco farming lead to deforestation in most areas including Nsimbo. Most of the area is under forest conservation but livestock have been illegally moving into protected areas. The carrying capacity of livestock is low in the area leading to conflicts on landuse. Interventions to address land degradation is undertaken by Central and local governments, local communities, Private sector, NGO/CBO, media, research and development as well as champion people. Different trees are being planted in degraded areas including <em>Polyanthus</em> and Acacia.</td>
</tr>
<tr>
<td><strong>Singida</strong></td>
<td>Most of the areas including Iranba and Ikungi are severely degraded and the Region is willing to collaborate all sectors in dressing land degradation. For example Iramba district is planting 1,500,000 trees per year. The Iramba district have so far trained 50,000 households on land management and tree planting. Every household is planting 20 trees per year and manage them. Now the district is distributing cashew trees, which is a national agenda. The team visited degraded area with regional and district staff to verify the areas mentioned to be degraded. They were able to mark areas not degraded.</td>
</tr>
<tr>
<td><strong>Dodoma</strong></td>
<td>Agriculture and livestock production in Dodoma is decreasing. Tanzania Forest System (TFS) offers permit to harvest forest which is against conservation. Land productivity is Dodoma is tremendously decreasing due to declining natural soil fertility, population increase and others factors</td>
</tr>
</tbody>
</table>
likewise those reported for Tabora and Shinyanga

| Morogoro | Land degradation in general is not well pronounced since it is limited to some areas as indicated in Table 4. Gairo areas very close to Dodoma boundary, Mvomero which sporadically face land use conflicts between crop and livestock growers. Soil erosion and uncontrolled fire is a problem in mountain areas which also need to be strategically conserve them. |