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TECHNICAL REPORT

LAND DEGRADATION NEUTRALITY IN SMALL ISLAND DEVELOPING STATES







LDN Land Degradation Neutrality Target Setting Programme

INDIAN OCEAN COMMISSION

Pacific Community
Communauté du Pacifique

PISLM Partnership Initiative on Sustainable Land Management

Land Degradation Neutrality in Small Island Developing States.

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LIST OF ACRONYMS

AFD	Agence Française de Développement (French Development Agency)
AFR100	African Forest Landscape Restoration Initiative
BPOA	Barbados Programme of Action
CBD	Convention on Biological Diversity
COP	Conference of the Parties
EbA	Ecosystem-based Adaptation
FAO	Food and Agriculture Organization of the United Nations
GCF	Green Climate Fund
GEF	Global Environment Facility
GFFFN	The Global Forest Financing Facilitation Network
GHG	Greenhouse gas
GSDR	Global Sustainable Development Report
The HUB	Commonwealth Climate Finance Hub
IOC	Indian Ocean Commission
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
LDCs	Least Developed Countries
LDN	Land Degradation Neutrality
LDN TSP	Land Degradation Neutrality Target Setting Programme
MEAs	Multilateral environmental agreements
NDCs	Nationally Determined Contributions
NGO	Non-governmental organization
NPPPF	National public-private partnership financing
PISLM	Partnership Initiative for Sustainable Land Management in Caribbean SIDS
R2R	Ridge to Reef
REDD+	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation
SAMOA Pathway	Small Island Developing States Accelerated Modalities of Action Pathway
SDGs	Sustainable Development Goals
SFM	Sustainable forest management
SIDS	Small Island Developing States
SLM	Sustainable land management
SPC	The Pacific Community
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-OHRLLS	United Nations Office of the High Representative for Least Developed Countries, Landlocked Developing Countries and Small Island Developing States



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EXECUTIVE SUMMARY

In September 2019, the Global Sustainable Development Report (GSDR) as well as the political declaration of the High-Level Midterm Review of the Small Island Developing States (SIDS) Accelerated Modalities of Action (SAMOA) Pathway reiterated that the countries most vulnerable to the impacts of climate change and land degradation, in particular SIDS, deserve special attention to achieve the Sustainable Development Goals (SDGs) by 2030.

Land Degradation Neutrality (LDN) is an overarching approach with strong linkages with the SAMOA Pathway and the prospect of creating multiple benefits to upscale common efforts for sustainable development. LDN complements the strategic objectives of the SAMOA Pathway and the SDGs and acts as an accelerator to achieve climate change mitigation and adaptation.

A review of the LDN target setting process amongst SIDS committed to achieving LDN confirmed that the rapid upsurge in economic activities over the past few years have led to the expansion of agriculture, mining, logging, and growth in urban and rural areas and settlements. The unsustainable harvesting of forest products (logging, timber and non-timber forest product extraction) and land conversion are both major causes of biodiversity loss and land degradation in forest areas. Moreover, climate change has been identified as a major threat to forests and could lead to further agricultural land degradation, coastal land erosion and salt-water intrusion from sea level rise.

From the Barbados Programme of Action (BPOA) to the SIDS Accelerated Modalities of Action (SAMOA) Pathway, SIDS have underscored the lack of data and knowledge sharing for monitoring and evaluating land degradation and its associated impacts. One of the major contributions of the LDN Target Setting Programme (TSP), implemented by the Global Mechanism and secretariat of the United Nations Convention to Combat Desertification (UNCCD), was increased data capacity among SIDS as a result of the provision of high-resolution data and technical assistance supported by partners such as the Food and Agriculture Organization of the United Nations (FAO). The national assessment and identification of LDN indicators on land cover, land productivity and soil carbon content using these data contributed to establishing science-based LDN targets in SIDS.

An assessment of land degradation trends, coupled with an analysis of the drivers behind these trends, proved an essential step for SIDS to understand the current conditions of land degradation, reveal anomalies and identify degraded areas. It also provided an evidence-based overview of areas that are particularly exposed to land degradation (known as 'hotspots'). SIDS linked the hotspots to disaster-prone areas, which emphasized a strong correlation between land degradation, climate change, biodiversity loss and disaster risks.

The leverage gains from LDN were achieved through the sharing of knowledge and data, and the alignment of targets and common objectives of multilateral environmental agreements (MEAs), and national strategies and programmes. Existing institutional and legal frameworks on land management in SIDS are intricate and complex, comprising several ministries and authorities. Coordination and streamlining commitments under several MEAs as well as data reporting and monitoring are critical and can be best led by a government body that has overarching co-ordination responsibilities with the relevant sectoral ministries and departments. The establishment of strong and diverse LDN working groups increased cross sectoral/institutional collaboration and will further help to eliminate duplication and streamline efforts during LDN implementation.

LDN should be mainstreamed in national plans, strategies and targets, including National Biodiversity Strategies and Action Plans under the Convention on Biological Diversity (CBD), National Adaptation Programmes of Action under the United Nations Framework Convention on Climate Change (UNFCCC), disaster management plans and other related policies. Almost all SIDS linked their LDN targets to their respective national and international priorities outlined in their long-term national country visions and other relevant national plans and strategies, such as the SDG plan, land use, forest management, and national budgeting plans.



By setting science-based LDN targets, SIDS have committed to integrated land-use planning, a shift towards greener economic initiatives and the restoration of degraded landscapes with a focus on land degradation hotspots. The overall focus to address land degradation in SIDS has been on natural resource management and ecosystem conservation, and strengthening the policy and institutional environments to tackle development pressures and competing economic land uses.

Broadly speaking, the LDN targets adopted by SIDS are based on four key points:

1. Mainstreaming LDN in relevant sectoral plans and MEAs;
2. Restoring degraded forests and enhancing protection measures for existing forest cover;
3. Restoring degraded agricultural land and protecting productive lands;
4. Raising awareness of LDN and sustainable land management (SLM) practices.

Several SIDS formulated quantitative targets, seeking interlinkages across all the land use types, while some have set qualitative targets for a specific land use type. Focus on a particular land use could leave gaps or risks of fragmented efforts. Target gaps within a particular land use type could pave the way for uncontrolled expansion and unplanned development, encroaching on vital land uses with essential ecosystem functions. To ensure the maintenance of ecosystem functions whilst balancing other competing land uses, it is recommended that implementation efforts be inclusive of all sectors and have an integrated land use planning approach.

LDN provides the framework for the sustainable development of human settlements in SIDS through policy, planning, design and regulatory instruments. However, SIDS have so far not afforded sufficient attention the national urban context. The United Nations Office of the High Representative for Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS) has emphasized that action on urban-rural linkages in SIDS should include



enhancing infrastructure and housing, upgrading informal settlements, protecting ecosystems, providing access to energy and water, and improving the connections between rural and urban spaces.

The development of an LDN knowledge e-platform to capture spatial data to continuously monitor both LDN and other MEAs is considered highly important. Strategic global and regional action-oriented coalitions/partnerships focusing on deliverables and on enhancing institutional and data capacities is key to ensuring big actions for small islands. Building effective monitoring and evaluation systems, and SLM/LDN knowledge hubs and communication mechanisms will bring together regional institutions working on SLM and climate change adaptation.

Investment in land will be important for SIDS to drive transformational change and economic development. The role of the private sector is crucial in this endeavour. The role of international partners to build technical capacity to develop, manage and evaluate bankable projects for SIDS is also highly important.

SIDS are progressing towards translating LDN commitments into actions. The UNCCD, in close cooperation with implementing partners, is supporting SIDS with the development of early-stage project or programme concept notes with built-in social, environmental and economic co-benefits, which can be further developed into complete project proposals that ensure gender-responsive LDN Transformative Projects and Programmes. The hierarchy of avoid > reduce > reverse land degradation, based on land-use planning, allows SIDS to determine which interventions should be prioritized based on their potential to maximize the conservation of land-based natural capital, recognizing that avoiding or reducing land degradation are generally more cost-effective than efforts to reverse past degradation. In addition to this, the UNCCD's Gender Action Plan represents an opportunity to enhance the implementation of gender-related LDN interventions.



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1. INTRODUCTION

1.1 SIDS and the SAMOA Pathway

Starting with the Earth Summit in Rio in 1992, the United Nations recognized that Small Island Developing States (SIDS) face similar social, economic and environmental crises;[1] and share a unique combination of vulnerabilities, including small size, remoteness from global market centres and undiversified economies, and the resulting susceptibility to economic shocks and high debt loads. SIDS also suffer from the immediacy of climate change impacts such as sea level rise, saltwater encroachment, ocean acidification and more frequent and intense storms that threaten not only health systems and infrastructure, but also each country's very survival.

The SIDS Accelerated Modalities of Action (SAMOA) Pathway provides the overarching framework that sets out the sustainable development priorities of SIDS, building on the Barbados Programme of Action (BPOA)[2] and the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of SIDS.[3] The SAMOA Pathway is also consistent with the 2030 Agenda for Sustainable Development, the Addis Ababa Action Agenda of the Third International Conference on Financing for Development, the 2015–2030 Sendai Framework for Disaster Risk Reduction, the New Urban Agenda and the Paris Agreement adopted under the United Nations Framework Convention on Climate Change (UNFCCC).

SIDS have a combined population of around 65 million people, contributing less than 1% of global greenhouse gas (GHG) emissions, yet they disproportionately face the devastating impacts of climate change, such as extreme weather events, slow-onset events and the increasing frequency, scale and intensity of disasters. The economic cost of climate change for SIDS is projected at 15% or more of their gross domestic product (GDP).[4]

SIDS are among the most vulnerable countries to land degradation due to their physical nature, small size and escarped landscapes. Climate change, land degradation, the loss of forest cover and sea level rise have increased the risk of disaster occurrences in SIDS. The Intergovernmental Panel on Climate Change (IPCC) 2019 special report on climate change and land[5] emphasized that SIDS are particularly affected by land degradation induced by tropical cyclones and that coastal degradation, for example, beach erosion, coastal squeeze and coastal biodiversity loss, as a result of rising sea levels is a major concern for low-lying coasts and SIDS. The 2018 assessment report on land degradation and restoration by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)[6] provided evidence that climate change has resulted in and will continue to result in desertification, coastal erosion and flooding, all of which have been documented to increase emigration from affected areas. Large-scale migration is also expected from SIDS as sea level rise progresses.

1.2 Geographical distribution of SIDS

According to the knowledge platform of the Sustainable Development Goals (SDGs) at the United Nations Department of Economics and Social Affairs (UNDESA), there are 38 United Nations member states that are classified as a SIDS,[7] located across the Caribbean, Pacific, Atlantic and Indian Oceans and the Mediterranean and the South China Seas.

Countries designated as SIDS overlap with the Alliance of Small Island States (AOSIS), a coalition of small island states that acts and negotiates together within the United Nations System. Regional cooperation organizations working with SIDS include The Pacific Community (SPC), the Indian Ocean Commission (IOC) and the Caribbean Community (CARICOM).

1.3 Land Degradation Neutrality and the target setting process

Following the adoption of the SDGs by the United Nations General Assembly, LDN was adopted by the UNCCD at the twelfth session of the Conference of the Parties (COP 12) in Ankara, Turkey, in October 2015, seeing it as a *"strong vehicle for driving the implementation of the Convention."* LDN is defined as a *"state whereby the amount and quality of land resources necessary to support ecosystem functions and services and enhance food security remain stable or increase within specified temporal and spatial scales and ecosystems."*[8]

Figure 1 **LDN Target Setting Programme building blocks**



Source: Global Mechanism-UNCCD, 2016

COP 12 invited UNCCD country Parties to formulate voluntary targets to achieve LDN. In response, the Global Mechanism and the secretariat of the UNCCD, in cooperation with numerous international partners, established the LDN Target Setting Programme to support countries with these efforts. As of November 2019, 123 countries,[9] including 26 SIDS,[10] have committed to setting national voluntary LDN targets.

LDN target setting is not a stand-alone process; it is embedded in overarching national development policy processes and programmes and is based on country ownership and the involvement of all stakeholders and sectors (including scientists, policy makers and practitioners) impacting the land-based natural capital. The main objective of the LDN Target Setting Programme is to enable countries to define national baselines, set voluntary LDN targets and identify associated measures to achieve LDN, using the LDN building blocks as a step-wise process (see Figure 1):

1. Leveraging LDN
2. Assessing LDN
3. Setting LDN targets and associated measures
4. Achieving LDN

The Science-Policy Interface of the UNCCD, a body that promotes dialogue between scientists and policy makers on desertification, land degradation and drought, provided scientific guidance for the operationalization of LDN targets by developing, in collaboration with external experts, a comprehensive scientific conceptual framework for LDN.[11] SDG indicator 15.3.1 provides the progress indicators/ metrics for LDN, based on:

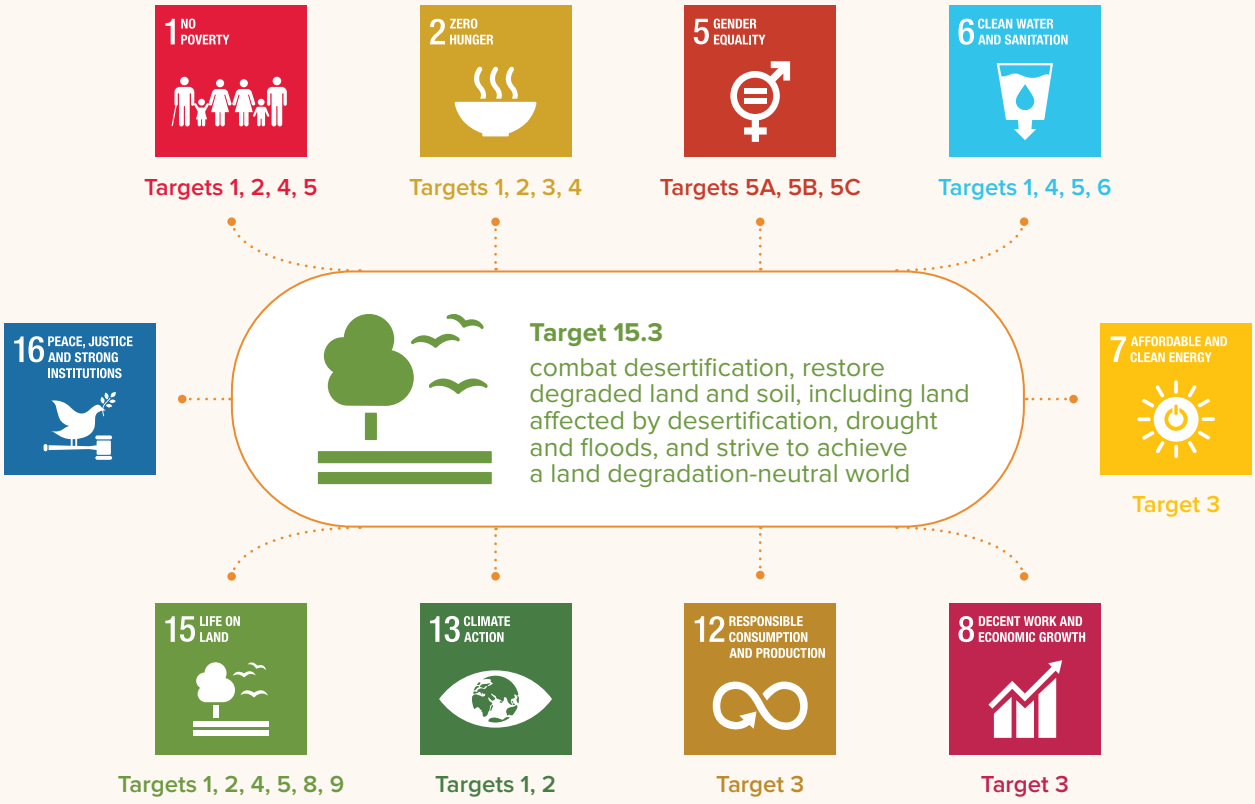
(a) trends in land cover,

(b) trends in land productivity or functioning of the land, and

(c) trends in carbon stock above and below ground.

The LDN response hierarchy of Avoid > Reduce > Reverse land degradation is considered essential in planning. In this hierarchy, avoid and reduce have priority over reversing past degradation, so that an optimal combination of actions can be identified and pursued with the aim of achieving no net loss across the landscape. A strong focus on both social and environmental outcomes within the sustainable use and management of land ensures that LDN consolidates and directly or indirectly supports the achievement of several SDGs simultaneously (see Figure 2).

Figure 2 Land Degradation Neutrality, an accelerator of the Sustainable Development Goals



Source: Global Mechanism-UNCCD, 2019

During COP 13 in Ordos, China in 2017, a SIDS Ministerial Breakfast on Opportunities for LDN was organized by the UNCCD and FAO to discuss the opportunities that had arisen as a result of the LDN targets set by SIDS and the way forward for SIDS to achieve their targets. The breakfast was attended by 7 international partners and delegates from 24 SIDS. Some of the key opportunities identified to address the common challenges facing SIDS include:

- Promoting sound land-use planning to tackle the problem of high competition for land;
- Increasing resilience to natural disasters and climate change;
- Enhancing national capacities and mobilizing innovative financing mechanisms;
- Improving the availability of LDN data and knowledge management; and
- Promoting sustainable agriculture.

Following this, at the UNCCD COP 14 in September 2019, country Parties that had committed to set voluntary LDN targets were invited to implement appropriate measures to accelerate their achievement by:[12]

(a) Fostering synergies among the Rio Conventions and other multilateral environmental agreements, including the consideration of joint programming activities at the national and sub-national levels;

(b) Strengthening national-level coordination and cooperation based on, inter alia, integrated land use planning, to guide the implementation of transformative projects and programmes;

(c) Creating an enabling environment for the achievement of LDN, including the responsible governance of land and tenure security, the engagement of stakeholders and the improved access of smallholders to advisory and financial services.

1.4 Objectives and approach of the study

The objectives of this study were to capture lessons learned from the LDN target setting process in SIDS and to provide a way forward for policy makers and interested stakeholders on future action to achieve LDN in SIDS, taking into account cross-cutting

issues and linkages between emerging and existing challenges and priorities. Areas of particular relevance to SIDS, owing to their unique and particular vulnerabilities, include:

- Fostering policy coherence by integrating into the LDN targets national priorities and other commitments, such as the Bonn Challenge,[13] Reducing Emissions from Deforestation and Forest Degradation (REDD+), the Nationally Determined Contributions (NDCs) of the UNFCCC and the Aichi Biodiversity Targets (ABTs) of the Convention on Biological Diversity (CBD), and linking the above with the SDGs;
- Preventing migration and conflict (SDG 16) and safeguarding life on land (SDG 15) align with other relevant commitments for SIDS, including the Paris Agreement, the Sendai Framework for Disaster Risk Reduction, the UN Habitat Principles for Urbanization, and the SAMOA Pathway.

The underlying assumption of this study is that SIDS face common challenges in achieving LDN. Therefore, land policy makers and practitioners in SIDS may benefit from common approaches and opportunities, as well as from examples from other



SIDS, in developing their LDN targets, measures, projects and policies. This study presents a multitude of opportunities and next steps to support SIDS to make more informed, evidence-based choices to achieve LDN, as per SDG Target 15.3. In this context, it includes examples of LDN Transformative Projects and Programmes, prepared in cooperation with partners, for selected SIDS located in Africa, the Caribbean and the Pacific.

This study is based on a review of the LDN target setting country reports and associated documents submitted by the SIDS participating in the LDN Target Setting Programme, with information available as of November 2019. This includes an analysis of reports from 12 SIDS: Cape Verde, Comoros, Dominican Republic, Grenada, Guyana, Mauritius, Papua New Guinea, Saint Lucia, Samoa, São Tomé and Príncipe, Seychelles and Timor-Leste. It draws on the report of the findings and lessons learned from the LDN Target Setting Programme,[14] and is accompanied by a briefing note on LDN opportunities in SIDS.[15] In addition to this study on LDN for SIDS, other thematic studies have been produced on LDN's contributions to forest and landscape restoration, biodiversity conservation, climate change mitigation and adaptation, understanding poverty and inequality, sustainable agriculture and food security, land-use planning and gender equality.[16]


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2. MAIN FINDINGS

2.1 Leveraging LDN

SIDS linked the LDN target setting process to national priorities outlined in their long-term country visions, land-use planning strategies, forest management plans, agribusiness investment schemes and national budgets, as well as the global SDGs.

All SIDS referred to MEAs (such as the UNCCD, UNFCCC and CBD) and their associated national plans and strategies for LDN leverage and mentioned the recent NDCs under the UNFCCC and the 2015–2030 Sendai Framework for Disaster Risk Reduction. SIDS have also linked LDN to specific initiatives and awareness programmes at international, regional and national levels (such as the Blue Bond, REDD+, AFR100 and the Green State Development Strategy of Guyana).

SIDS have dedicated much attention to the leveraging opportunities within specific sectoral strategies and policies, especially agriculture, environment, forestry and climate change. Some countries also referred to the mining, energy, infrastructure and transport sectors. In addition, land-use plans at different scales and 'mainstreaming' LDN into national, sectoral and local budgets and resource allocations were considered important leveraging opportunities for LDN and were mentioned by Cape Verde, Comoros, Dominican Republic, Guyana, Mauritius, Papua New Guinea, Saint Lucia, Samoa, São Tomé and Príncipe and Seychelles.

The leverage gains of LDN were achieved through the sharing of knowledge and data and the alignment of targets and common objectives of current MEAs and national strategies and programmes. The leveraging process further increased cross-sectoral/institutional collaboration, which helped to eliminate duplication and streamline efforts to achieve LDN.

The economies of SIDS are much less diversified than in larger countries, with a narrow resource base and relatively limited range of activities. National public financing for LDN projects, climate change adaptation and disaster risk reduction measures is challenging for many SIDS. In order to scale up LDN, substantial investment programmes, such as traditional multilateral and bilateral funding and new innovative financing options and incentive packages, are much needed.

Box 1: Guyana aligned LDN with its national development priorities

In Guyana, land degradation has been occurring in sporadic areas due to the unsustainable use of natural resources and recurring natural disasters. The country's coastline is prone to erosion, while salt-water intrusion and the loss of arable land due to floods and droughts are serious problems. Guyana's economy is dominated by the agriculture, forestry, fishery and mining sectors, with forests accounting for 85% of the country's land cover, covering 18.5 million hectares, 12.6 million hectares of which are allocated for timber harvesting. The country has set strong LDN commitments and on-the-ground measures to combat land degradation and to support corrective actions, including the promotion of SLM practices. Guyana has successfully aligned LDN with its national development priorities via a green economic pathway, achieved through the "Green State Development Strategy" of the overarching country development framework.

By integrating LDN, there will be enhanced opportunities to improve livelihoods and contribute to food security, as well as to improve the country's GDP and the population's economic well-being, particularly those living in affected areas. The strategy takes into consideration the need to integrate and strengthen existing national policies and planning frameworks for sustainable development and the role of non-governmental organizations, the private sector, local communities and civil society in its implementation. Some of the opportunities to leverage financial resources that would assist in achieving LDN could come from the Guyana REDD+ Investment Fund and the Guyana Protected Areas Trust Fund.

2.2 Multi-stakeholder engagement

One of the top priorities during the LDN target setting process in SIDS was to establish a strong and diverse LDN working group. SIDS involved a broad spectrum of stakeholders from the public sector, especially ministries or agencies involved in the environment, natural resources, forestry, agriculture, infrastructure, transport, mining, tourism, coastal management, central planning and finance, as well as ministerial advisory groups/councils, statistics offices and regional organizations. Some working groups included non-public sector stakeholders from civil society organizations (usually environmental) and the donor community. A few SIDS also included indigenous organizations (such as in Guyana) and private sector representatives (such as in Mauritius). In general, around 20 to 30 stakeholders were involved in the LDN working group in each country, with scope to further enhance the participation of women and increase the diversity and representation of non-governmental stakeholders. The multi-stakeholder platform ensured:

- cross-sectoral collaboration and knowledge sharing;
- access to key documents;
- LDN-relevant geographic information data and remote sensing imagery;
- identification of strategic LDN interventions;
- review and validation of national reports;
- support for national outreach activities, and
- sensitization and communication campaigns on LDN.

2.3 Assessing LDN in SIDS

Baseline and trend analyses

SIDS assessed land degradation hotspots using the LDN three sub-indicators:

- trends in land cover,
- trends in land productivity or functioning of the land, and
- trends in carbon stock above and below ground.

Special support was provided to SIDS through the LDN Target Setting Programme by availing high-resolution satellite imagery to improve estimates of the LDN sub-indicators. The support included capacity building in the use of LDN GIS-related tools, namely the Collect Earth[17] and Trends.Earth[18] applications, to assist SIDS with the analysis of land degradation trends in their countries. Several capacity-building workshops were organized on using Collect Earth, with the support of FAO, and on collecting data related to land use and land-use change, Normalized Difference Vegetation Index (NDVI) trends and erosion indicators based on freely available satellite imagery through Google Earth (using very high-resolution imagery) and the Google Earth Engine (Landsat, MODIS 5 and Sentinel-2).

During the LDN target setting process, SIDS identified land degradation trends by comparing the spatial changes of the LDN sub-indicators over a period of 10 to 15 years. These three indicators provided good coverage and together can be used to assess the quantity and quality of land-based natural capital and most of the associated ecosystem services. The causal chains of land degradation in the degraded areas (designated as hotspots) and their occurrence and severity at the landscape level, as well as the drivers, were discussed and approved by the national working groups.

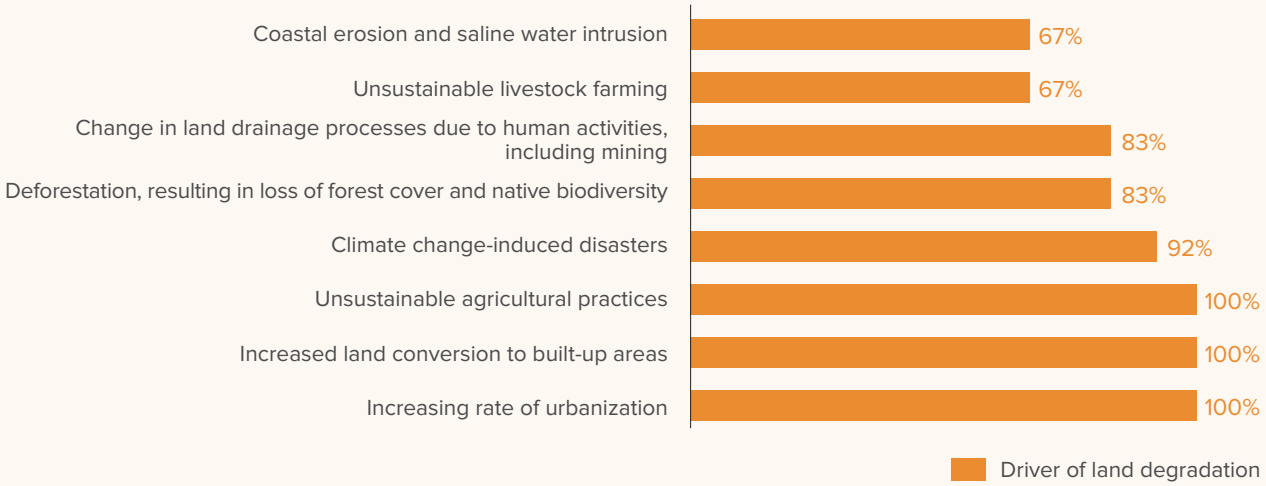
LDN national working groups collated available LDN data from national sources to try to define the baseline, using spatial and non-spatial information on topography, forest/vegetation cover, hydrology, soils, land use, slope, population, agricultural production, etc. However, national data on the three LDN sub-indicators were not always available, and several countries used the default data to establish the LDN baseline and prepare national estimates.

In the future, the Group on Earth Observations (GEO) Initiative on LDN will assist interested SIDS in addressing land degradation, with monitoring and reporting necessary to implement and achieve SDG 15. The data and reporting protocols developed would be accessible via the Global Earth Observation System of Systems (GEOSS) Platform and prove useful to other GEO initiatives, including the GEO Biodiversity Observation Network (GEO BON), GEO Global Agricultural Monitoring Initiative (GEOGLAM) and the Earth Observations for Ecosystem Accounting (EO4EA) Initiative.

Land degradation drivers

A review of the LDN target setting process amongst SIDS confirmed that the rapid upsurge in economic activities over the past few years has led to the expansion of agriculture, mining, logging, and a growth in urban and rural areas and settlements. The increase in unsustainable agricultural practices, such as open grazing, inadequate soil conservation measures and the intensive use of chemical fertilizers, has depleted essential soil nutrients and soil organic carbon content. Insecure land tenure means that farmers have little incentive to invest and maintain good agricultural practices, which further aggravates the situation. The loss of vegetation cover is in turn leading to the loss of the fertile topsoil and a decrease in the infiltration capacity of the soil. This disturbs the water cycle by decreasing ground-water levels and increasing run-off, especially after torrential rains, causing soil erosions, landslides and rock falls.

Figure 3 **Drivers of land degradation in participating SIDS**



SIDS identified deforestation as most prevalent in riparian areas and areas along major forest trails, which are affected adversely by land-clearing activities such as gold mining and human settlements (see Figure 3). For example, Guyana estimated that logging accounted for 40% of its carbon emissions from land use between 2001 and 2012 and has verified that small scale gold mining resulted in 89% of the deforestation recorded in Guyana over the past three years.[19] The loss of forest cover has resulted in significant habitat loss and fragmentation in ecological regions. Climate change is increasing species invasion and forest fires, leading to further land degradation, and has been identified as a major threat to forests and could lead to further agricultural land degradation, coastal land erosion and salt-water intrusion from sea level rise.

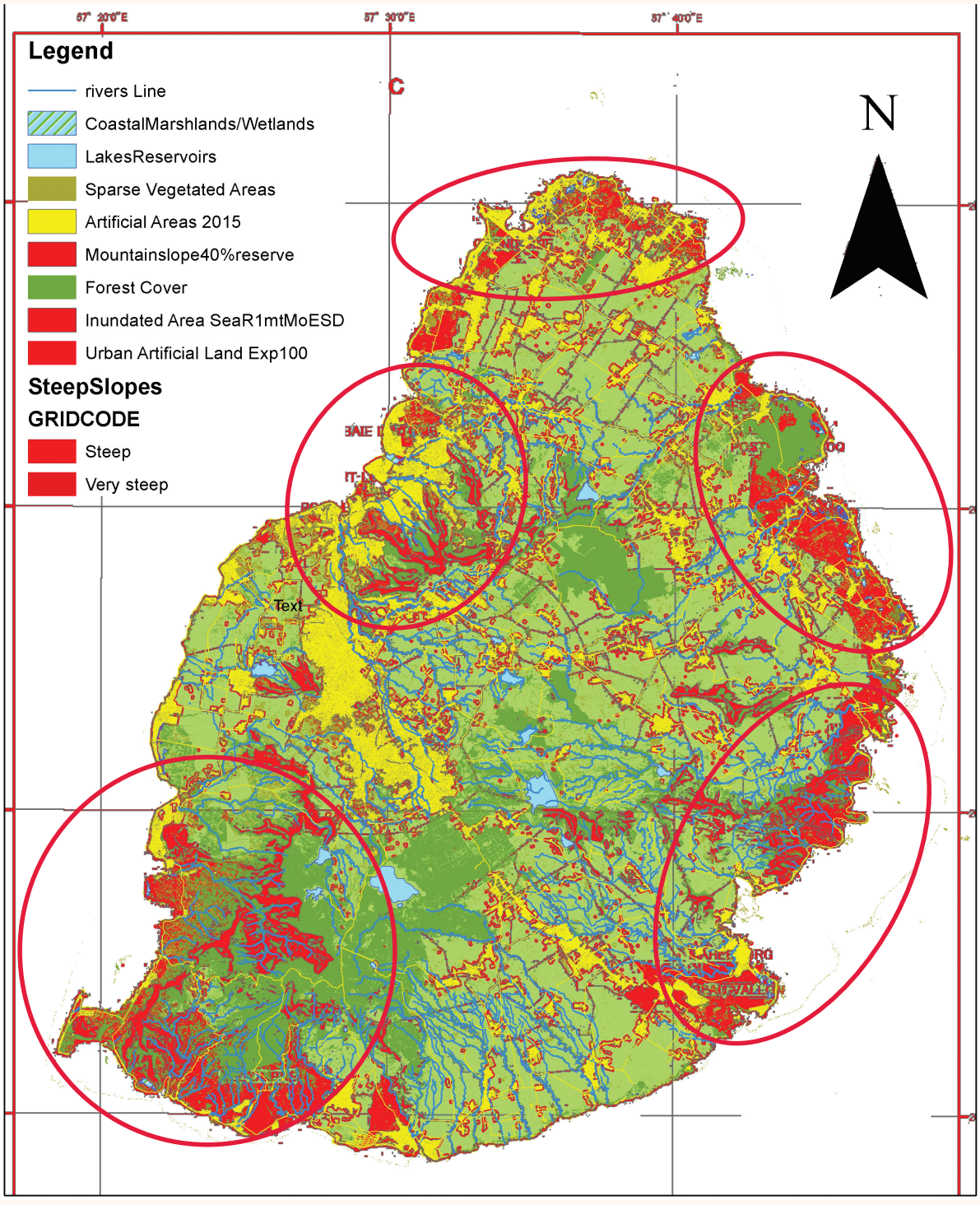
Land degradation hotspots

The assessment of land degradation trends, coupled with the analysis of the drivers behind these trends, proved an essential step for SIDS to understand the current conditions of land degradation, reveal anomalies and identify degraded areas. The assessment and analysis provided an evidence-based overview of areas that are particularly exposed to land degradation (known as 'hotspots'), where the occurence of land degradation is high and severe. In some SIDS, the Ridge to Reef (R2R)[20] approach was used to map and determine the causes and drivers of land degradation. Several SIDS linked the hotspots to disaster-prone areas, which emphasized a strong correlation between land degradation, climate change, biodiversity loss and disaster risks (see examples in Figure 4 and Figure 5 from Mauritius and Saint Lucia, respectively).

Institutional and legal frameworks

The institutional and legal frameworks of land management in SIDS are intricate and complex, comprising several ministries and authorities with overarching responsibilities on managing land use. However, only a few institutions were identified for advancing and coordinating LDN/SLM and the SDGs during the process. For example, Guyana, Mauritius, Saint Lucia and Seychelles each allocated one lead ministry or authority in-charge of land-use planning with the responsibility of coordinating inputs from related MEAs (such as the UNCCD, CBD and UNFCCC) and SDG focal point institutions. Yet, there is further scope for collaboration with institutions involved in land-use and environment planning to develop human resources and capacity to manage and control land-use changes, including development (urbanization) and the integration of LDN in strategic development plans. For instance, in Timor-Leste, the key government agencies involved in economic planning, trade and investment within the Ministry of Planning and Investment Strategy do not necessarily factor ecosystem services in their planning and implementation processes. Table 1 summarizes the analysis of the strengths, weaknesses, opportunities and threats (SWOT) of the legal and institutional frameworks in SIDS.

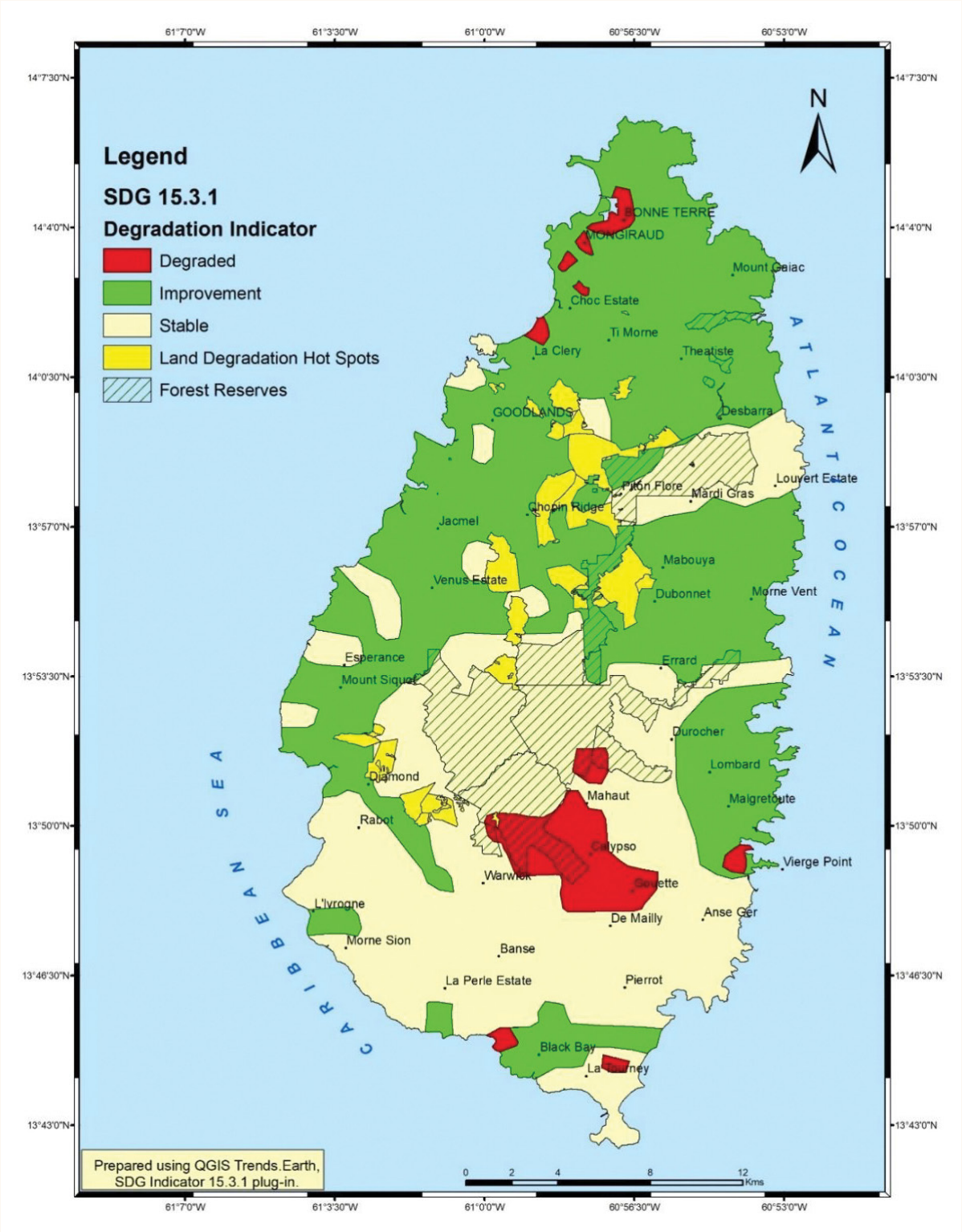
Figure 4 Land degradation potential hotspot areas, Mauritius Island, Mauritius



Source: Final country report of the LDN Target Setting Programme, Republic of Mauritius, 2018

Map conforms to UN World map, February 2020

Figure 5 **Status of land degradation hotspots in Saint Lucia and indications of landslide hotspots**



Source: Saint Lucia LDN Target Setting Programme Baseline Indicators, 2018/ECLAC, 2010

Map conforms to UN World map, February 2020

Table 1: SWOT analysis of the LDN legal and institutional frameworks in SIDS

STRENGTHS	WEAKNESSES
Legal environment	**Legal environment**
• All SIDS have national legal frameworks, laws and regulations covering the safeguarding of natural resources, environment, land use and physical planning; • All SIDS have regulatory frameworks in place including (Strategic) Environmental Impact Assessments; • Some SIDS have a compulsory land acquisition legal framework to acquire strategic private land, including land that forms part of protected areas (water-sheds, areas with high-biodiversity and ecosystem function values, disaster-prone areas, etc.). There are specific agricultural land protection legal frameworks.	• In some SIDS, relevant laws and regulations are out of date, notably planning, agricultural land protection and management, forest conservation through national parks, protected areas and Biodiversity Conservation Acts; • Some national or local laws are not in-line with international agreements and/or conventions; • Poor regulatory provisions for scientific land productivity baseline assessments and ecosystem valuations and land-use conversion cost-benefit assessments are not inadequately considered in permitting processes; • Many of the reasons for determining land-use conversion are based on purely economic decision-making in government and the private sector rather than on the benefits from ecosystem functions; • The legal framework concerning land tenure for farmers and pastoralists is not conducive to LDN best practices or SLM, and the role of non-private sector as civil society, indigenous people, women, and youth are not always duly acknowledged.
Institutional environment	**Institutional environment**
• All SIDS have normative institutional frameworks on natural resources and land management; • In most SIDS, the ministries of environment have the policy mandate, with line agencies in charge of implementation, monitoring and enforcement on environment-related matters; • Some SIDS have specific land conversion processes, committees and regulations; • Several SIDS have legal obligations and processes to include international MEAs in strategic development plans; • Some SIDS have set up protected area network expansions and management processes (including ecosystem functions and biodiversity management).	• Many times, there are no distinct institutions responsible for advancing LDN and for implementing work toward achieving the SDGs; • Key government agencies involved with economic planning, trade and investment do not necessarily factor ecosystem services in their planning and implementation processes; • Weak coordination, including overlapping and sometimes conflicting responsibilities and tasks among institutions/ sectors; • Many SIDS do not have an updated national strategic land-use development plan; • Lack of qualified staff, expertise, funds and equipment, and lack of institutional communication, awareness, sensitization and extension services on the environmental implications of unsustainable agricultural practices.

Table 1: SWOT analysis of the LDN legal and institutional frameworks in SIDS *(continued)*

OPPORTUNITIES:	THREATS:
Legal environment	**Legal environment**
• Integrating environmental or specific LDN concerns in national strategic development plans and local planning policies; • Mainstreaming and integrating LDN and SLM in national sectoral plans, existing legal frameworks and policy regulations; • Reviewing and mainstreaming LDN in the forest code and preparation of national forest action plans and other related legislations; • Integrating LDN into disaster risk reduction, prevention and infrastructure resilience legal frameworks; • Putting in place land-use conversion regulations and processes to protect ecosystem services derived by land (forest, biodiversity, wetlands).	• Poor land governance; • Lack of coordinated regulatory implementation and enforcement; • Inadequate land-use planning, control and monitoring; • Absence of cost-benefit analysis of the impacts of land degradation to inform the legal framework.
Institutional environment	**Institutional environment**
• Increasing awareness of SLM; • Integrating LDN in National Adaptation Programmes of Action and NDCs; • Setting up national LDN learning and knowledge research institutions, and mapping and capturing traditional and innovative practices in SLM and LDN.	• Downgrading the land-use conversion mechanism due to economic, real estate and tourism development pressures, leading to land degradation and disrupting island ecosystems; • Adverse trend in global and national financing for sustainability; • Climate change and negative impacts of extreme weather events.

2.4 Setting LDN targets and measures

Based on the land degradation assessments, LDN targets were formulated and associated measures were identified to tackle and possibly reverse land degradation. Each of the SIDS formulated their targets and measures based on the trends, drivers, degree of degradation, associated disaster risks, landscape characteristics and national priorities. Figure 6 summarizes the significant LDN measures adopted by the SIDS, showing the percentage of SIDS adopting each measure.

The LDN targets adopted by SIDS are based on four key entry points as explained in Table 2:

1. Mainstreaming LDN in relevant sectoral plans and MEAs;
2. Restoring degraded forests and enhancing protection measures for existing forest cover;
3. Restoring degraded agricultural land and protecting productive lands;
4. Raising awareness of and monitoring LDN and SLM practices.

LDN aims to foster integrated action across all land-use types. It is recognized that focus on a particular land use to the detriment of others can leave gaps and fragment efforts, which may result in the uncontrolled expansion of urban development and encroachment on vital land with essential ecosystem functions. LDN quantitative targets, supported by policy measures, should be inclusive of all sectors and land-use types. LDN's emphasis on an integrated land-use approach ensures the protection of ecosystem functions whilst balancing other competing land uses.

Several SIDS have successfully formulated quantitative LDN targets seeking interlinkages across all land-use types; for example, Mauritius and Seychelles set LDN targets to limit the area/rate of urbanization, reduce further loss and support the restoration of forests, wetlands, agricultural land and abandoned cropland, as well as to maintain inland water resources (Figure 7).

A dynamic spatial system that has the capacity to evolve in accordance with changes in social and/or ecological conditions is important to achieve local or

regional conservation objectives. Several SIDS have also prioritized integrated land-use planning and the expansion of protected areas as the main measures and tools to achieve LDN. However, the challenge remains to acquire more accurate spatial data to enable continuous monitoring of progress of towards LDN.

Although the overall actions by SIDS to address land degradation have been focused on strengthening policy and institutional targets to tackle development pressures and competing economic land uses, and on preserving natural resources and ecosystems, there is scope for further revision of targets in a few SIDS that have set qualitative targets for a specific land-use type only.

Figure 6 **LDN measures among participating SIDS**

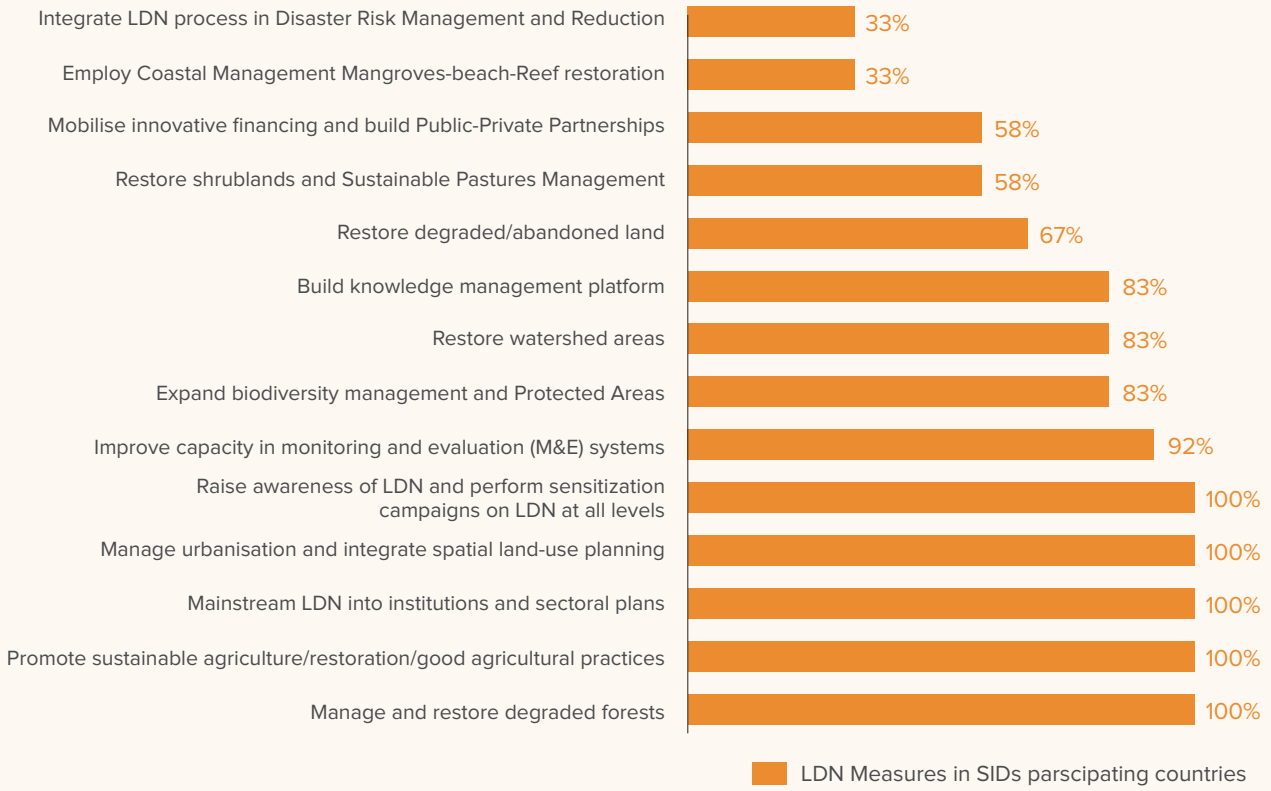


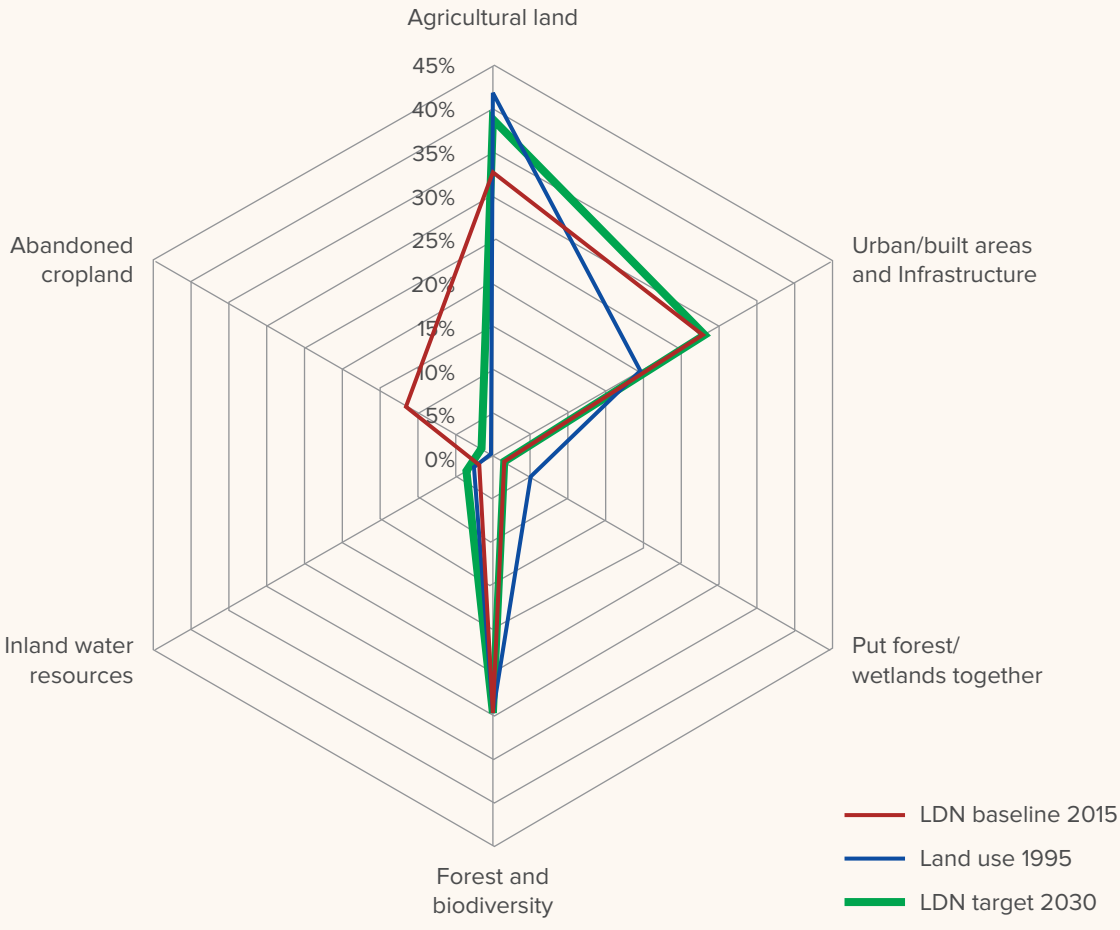
Table 2: Summary of the key entry points of LDN targets identified by participating SIDS and measure to achieve the LDN targets

Entry point of LDN targets	Measures to achieve LDN targets
1. Mainstreaming LDN in relevant sectoral plans, MEAs and public-private partnerships	1.1 Mainstream LDN/SLM in legal and institutional frameworks at national and/or regional levels, and regularize land tenure in sectoral plans; 1.2 Align UNCCD National Action Plans with LDN targets and measures; 1.3 Manage urbanization by integrating LDN in national spatial land-use planning, including in coastal areas (ridge- mangroves-beach-reef) and/or land degradation hotspots; 1.4 Integrate LDN processes in disaster risk reduction and management; 1.5 Identify and develop LDN financing incentives and mechanisms, international funding, national investment schemes and public-private partnerships.

Table 2: Summary of the key entry points of LDN targets identified by participating SIDS and measure to achieve the LDN targets *(continued)*

2. Restoring degraded forests and enhancing protection measures for existing native forest cover and biodiversity	2.1 Promote sustainable forest management (SFM); reduce forest and landscape loss; manage and restore degraded forests through landscape restoration (national forest inventory and planning, forest fire management and planning); 2.2 Integrate soil and watershed management; restore freshwater resources, catchment areas (basins, lakes, rivers, reserves, storm water drains and ground water replenishment).
3. Restoring degraded agricultural land and protecting productive lands	3.1 Promote sustainable agriculture and land productivity management/restoration of cropland with good agricultural practices; 3.2 Restore pasture land and grassland; apply pasture management practices; 3.3 Restore degraded/abandoned land.
4. Raising awareness of and monitoring LDN and SLM practices	4.1 Develop LDN communication, awareness and sensitization campaigns; 4.2 Establish an LDN knowledge management platform, including a monitoring and evaluation system; 4.3 Focus on LDN community learning and leadership development programmes.

Figure 7 **Example of LDN targets with 100% land coverage from Mauritius**





©Shutterstock/Quick Shot

3. ACHIEVING LDN IN SIDS: LESSONS LEARNED

3.1 Sustainable forest management and forest restoration

Many SIDS have highlighted how LDN provides them with the opportunity to halt and reverse forest cover loss by restoring degraded landscapes and biodiversity (as summarized in Table 3). Achieving LDN by implementing sustainable forest management (SFM) directly contributes to achieving the Bonn Challenge of restoring 150 million hectares of degraded and deforested land. Some SIDS, such as Papua New Guinea, with large tropical forest areas are leveraging on REDD+ and the Bonn Challenge to set their LDN and SDG targets.

Papua New Guinea, which has a tropical forest area of up to 377,580 km^2, is experiencing land degradation due to the impacts of forest exploitation for commercial logging, oil palm production and Special Agriculture Business Leases (SABLs). The Ministry of Environment and Conservation, through the Conservation and Environment Protection Authority, together with relevant stakeholders, mapped the ongoing forest-related activities to be brought under the umbrella of LDN. The development of the Papua New Guinea Sustainable Palm Oil Platform, a multi-stakeholder forum that brings together key representatives from the palm oil industry, civil society, communities, the government and development partners, to support the development of sustainable palm oil in the country, is an example of one effort to address land degradation.

In Mauritius and Seychelles, the United Nations Development Programme (UNDP)/GEF-funded projects' expansion of the protected areas network under the Aichi Biodiversity Targets of the CBD is working towards establishing legal protection of high-biodiversity-value native forests as well as restoring native terrestrial biodiversity by ramping up the fight against invasive alien species proliferations. Biodiversity restoration stewardship programmes by national park authorities have been put in place, and private sector nature-based tourism operators are being encouraged to contribute and participate.

Table 3: Opportunities to achieve LDN through sustainable forest management and expansion of protected areas

Threats to land and forest degradation	Opportunities to achieve LDN through sustainable forest management and expansion of protected areas
Increased degradation of forest quality, grazing areas and sparsely vegetated areas	• Carry out national forest inventory, and identify the quality and health of forest and degraded areas in need of rehabilitation; • Explore the potential of agroforestry and silviculture as part of the degraded forest restoration programmes; • Maintain and restore grassland, grazing and sparsely vegetated areas by implementing pasture management measures, encouraging cut and carry fodder, and encouraging pasture enclosure.
Increased encroachment on forest land, illegal logging and conversion of private forest into other land uses	• Review the forest code and other related legislation for the preparation and implementation of a national forest action plan for the monitoring and protection of privately owned forest, including native species restoration; • Put in place a forest stewardship and conservation easement mechanism in association with private forest owners.

Table 3: Opportunities to achieve LDN through sustainable forest management and expansion of protected areas *(continued)*

Threats to land and forest degradation	Opportunities to achieve LDN through sustainable forest management and expansion of protected areas
Lack of monitoring of forest areas	• Prepare a national forest management action plan, identifying opportunities and threats to manage productive forests; • Developing participatory forest landscape restoration plans.
Unsustainable forest practices, loss of native terrestrial biodiversity, increased soil erosion and depletion of water resources	• Expand protected-area networks by taking remedial actions to protect native forest, restore terrestrial biodiversity, and restore degraded forest landscapes and ecosystem functions.
Increased climate-induced forest fire occurrence and increased intensity	• Prepare national forest fire management plans, open and maintain fire breaks in strategic areas, and put in place community-based forest fire fighting training programmes and procure of forest fire-fighting equipment;
Increased developmental pressure on native forest resources and coastal wetlands	• Set up a national forest research institute to advise on forest ecology, sustainable forest products and management of nature-based tourism activities.
Limited financial resources to preserve, manage and rehabilitate native forest areas and resources	• Encourage public-private partnership in managing forest lands and promoting forest products, e.g. the Forest Stewardship Council (FSC) and eco-labelling forest products (nature-based tourism activities, woods products, medicinal plants, honey products, forest mineral water resources, handicrafts, etc.).
Poor monitoring of forest quality and cover, and loss of mangrove forest and wetlands in coastal areas	• Build local capacity to detect climate-induced forest land cover change (using remote sensing and GIS) and monitor invasive alien species proliferation, land degradation and coastal mangroves forests.

3.2 Sustainable agricultural practices

The conversion of cropland to artificial areas is one the main causes of land degradation identified in SIDS. Large areas of abandoned agricultural land adjoining human settlement are rapidly being consumed by urbanization. Several LDN measures have been adopted: from restoring abandoned cropland and increasing financial viability of alternative crop production, to protecting highly productive cropland and researching and adopting sustainable agricultural practices. The LDN measures for sustainable agricultural practices used by SIDS are shown in Table 4.

Table 4: Opportunities to achieve LDN through sustainable agricultural practices

Threats of land degradation in cropland	Opportunities of achieving LDN through sustainable agricultural practices
Increased crop production cost (and use of fertilizers)	• Prioritize the use of renewable energies (photovoltaic) over conventional energies in water pumping; • Support the development of alternative economically viable crops and by-products such as bio fertilizers, organic manure and composting.

Table 4: Opportunities to achieve LDN through sustainable agricultural practices *(continued)*

Threats of land degradation in cropland	Opportunities of achieving LDN through sustainable agricultural practices
Unpredictable extreme weather patterns and coastal erosion (heavy rainfall, change in peak temperature and prolonged drought, saline water intrusion, increase in pests, invasive alien species, etc.)	• Explore agroforestry, crop production alternatives using bio-farming techniques and support research and capacity building in climate-smart agricultural practices; • Encourage initiatives that favour sustainable intensification and soil protection, e.g. by promoting the efficient use of existing natural resources as water and soils, through drip irrigation, permanent soil cover, use of water efficient crops and varieties, building of terraces, etc.; • Introduce fruit trees to optimize microclimatic conditions on agricultural land and manage areas invaded by inappropriate pests and invasive species; • Integrate sustainable agriculture and coastal management initiatives based on community-driven land-use planning; • Address the most pressing development needs of atolls, including food and nutritional security, climate change mitigation and sustainable management of the environment.
Loss of soil fertility due to increased soil erosion, intensive mechanization and agricultural malpractices	• Strengthen research in the area of soil fertility management (human, material, financial) and minimize intensive mechanization; • Support farmers, land owners and communities in their efforts to prevent and reverse land degradation through application of SLM and good agricultural practices (soil removal, terracing, burning, weeding, mulching, etc.), including conservation agriculture.
Lack of financial resources to support farmers in maintaining land productivity	• Provide financial and technical incentives to farmers to maintain and encourage agronomy for seedling production facilities, sheltered farming, shade houses, greenhouses and mechanized planting and harvesting processes; • Provide food-crop processing and export facilities for regional and international markets; • Promote sustainable food production practices and responsible commodity value chains.
Overgrazing of livestock in uncontrolled open pasture significantly reducing vegetation cover and exposing bare soil to erosion	• Establish educational programmes for small- and medium-size livestock producers, and promote the silvo-pastoral system and conservation areas on farms; • Raise awareness and involvement of farmers in the production, enhancement and management of fodder resources; • Strengthen the protection and conservation of natural resources, and strengthen human capacity in the livestock sector at the field level; • Construct infrastructure for livestock housing where it proves necessary and create of conditions for the collection and conservation of pasture; • Encourage the production, use and marketing of manure.
Insecure land tenure, with farmers having little incentive to invest and maintain good agricultural practices	• Implement training and extension programmes to promote SLM and good agricultural practices; • Strengthen human and institutional capacity in the rural agricultural extension sector and review land-tenure mechanisms to enhance ownership and stewardship agreements to ensure sustainable governance of croplands.

Table 4: Opportunities to achieve LDN through sustainable agricultural practices *(continued)*

Threats of land degradation in cropland	Opportunities of achieving LDN through sustainable agricultural practices
Land development pressure for competing land uses	• Demarcate and protect highly productive agricultural land from land conversion to other land development purposes; • Evaluate and improve the methodology of participatory approaches in rural and peri-urban areas through the Rural Extension sector; • Promote farming schemes in cities and urban areas; Implement a soil information system and soil charter to identify and protect highly productive and fertile soils; • Promote integrated and participatory land use planning; • Integrate sustainable agriculture and coastal management initiatives based on community-driven land-use planning.

3.3 Promoting sound land-use planning to address high competition for land

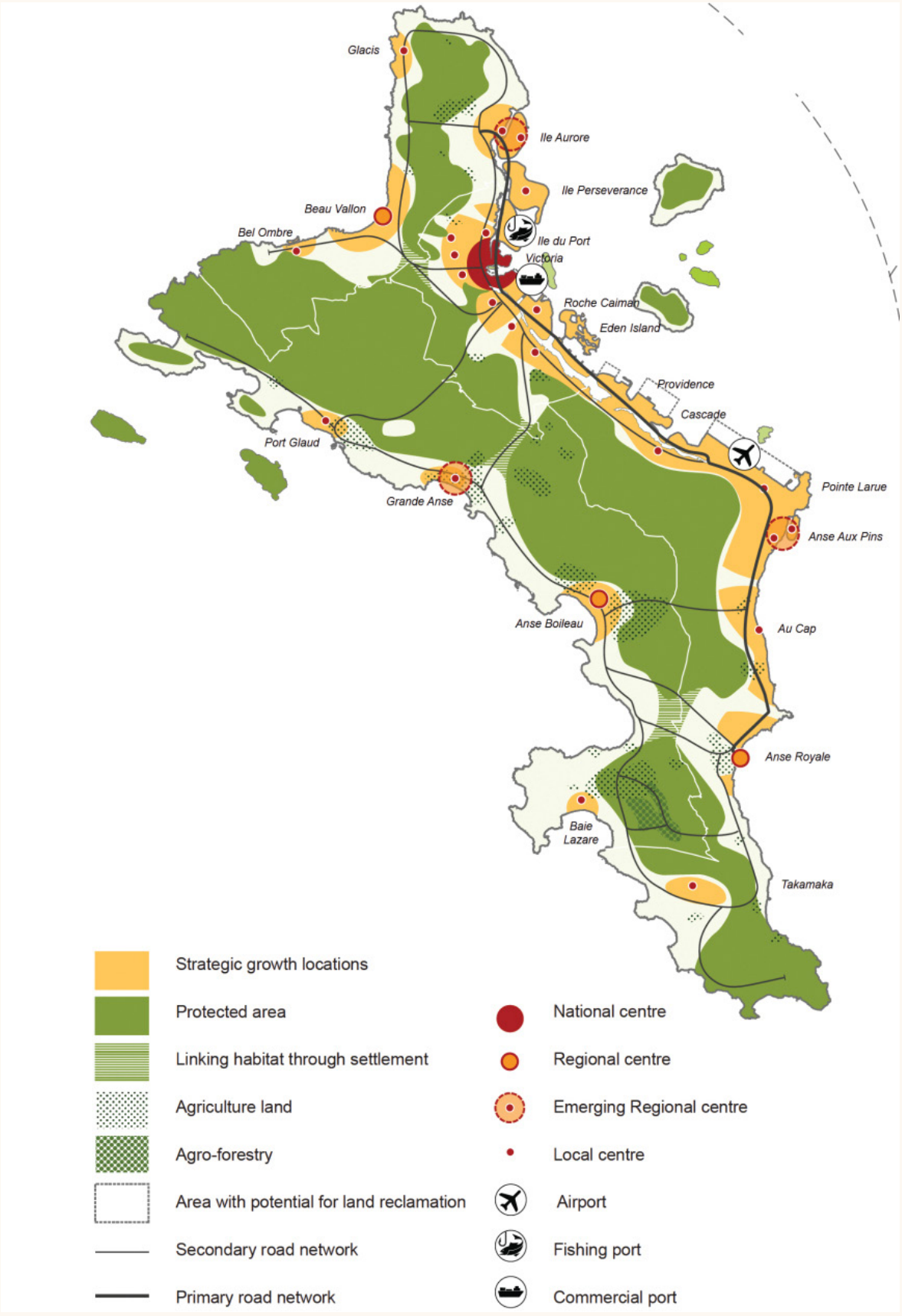
Achieving LDN in SIDS requires immediate interventions at various land-use sector levels. Several SIDS have developed national strategic land-use plans that provide an integrated approach towards managing competing demands in land-use development in economic sectors, such as tourism, agriculture, forestry, industrial activities and infrastructure, whilst preserving and enhancing the ecosystem functions of land, and minimizing land degradation. The LDN Target Setting Programme provided an opportunity to revise the existing national land-use strategic plans, for example, in Mauritius, where the plan is being reviewed based on the LDN baseline and target indicators as well as the SDGs. Likewise, Seychelles prioritized LDN in its Strategic Land Use and Development Plan 2014–2040 (see Figure 8) to create a strong balance between economic sectors, such as tourism, agriculture, forestry, industrial activities, infrastructure and environmental sustainability; and will greatly improve climate resilience.

The LDN Target Setting Programme provided critical support to SIDS in using evidence-based strategic land-use planning and policymaking, and enabled SIDS to both expand their data capacity and increase their opportunities for finance. Incorporation of science-based information at all stages in planning and management, which takes into account social, economic, developmental, ecological as well as environmental dimensions, and stresses interactions and synergisms, is essential. The use of tools, such as the FAO/WOCAT Land Degradation Assessment in Drylands[21] assessment methodology and the Land Resources Planning Toolbox developed by FAO, could assist SIDS in bringing comprehensive perspectives to land-use planning.

Table 5: Opportunities to integrate LDN into sectoral policies in strategic land-use plans

Threats of land degradation	Opportunities to integrate LDN into sectoral policies in strategic land-use plans
Water shortages, prolonged drought, flash floods (climate-induced disasters), food insecurity and increased poverty	• Protect and restore watershed areas; • Integrated soil and water management; • Restore fresh water resource catchment areas (basins, lakes, grasslands, river reserves) to ensure ground-water replenishment.
Increased encroachment on forest land, illegal logging, conversion of private forest into other land uses and lack of monitoring of forest areas	• Protect and restore forest land and vegetation/tree conservation and landscapes.
Loss of native terrestrial biodiversity, degradation of landscapes leading to soil erosion and disruption of ecosystem functions	• Expand protected-area network ecosystems and biodiversity restoration; • Promote alternative compatible economic incentive uses, such as nature-based tourism, etc.

Figure 8 **Spatial Land Use Strategy Map, Mahe Island, Seychelles**



Source: Final Country Report LDN Target Setting Programme, Republic of Seychelles, 2018/Seychelles Strategic Land Use and Development Plan 2014-2040

Map conforms to UN World map, February 2020

Table 5: Opportunities to integrate LDN into sectoral policies in strategic land-use plans *(continued)*

Threats of land degradation	Opportunities to integrate LDN into sectoral policies in strategic land-use plans
Increased land degradation due to land conversion in peri-urban areas and infrastructure development	• Integrate landscaping corridor conservation as bio-infrastructure in peri-urban areas and city planning.
Increased loss of productive agricultural land due to unsustainable practices and eroding of economic incentives for food production by small farmers	• Protect and restore agricultural land; • Restore degraded and abandoned land with alternative cash, mixed crops or agroforestry, and secure land tenure.
Loss of soil carbon content and decreasing land productivity of pasture land, and increased conversion of abandoned pasture into artificial areas in peri-urban areas	• Protect and restore pastures; • Promote good pasture management practice, e.g. mulching to enhance soil cover and reduce runoff, as well as compatible alternative economic incentives, such as agro-tourism, etc.
Increased climate change and human-induced disaster risk such as flash floods, landslides, extreme droughts and heat emissions from buildings	• Manage artificial areas and the urbanization process to minimize impervious layers and storm water run-off; • Promote urban design that minimizes urban heat emissions.
Increased development pressure in coastal areas and climate-induced threats (coastal erosion, saline water intrusion, sea level rise) resulting in forced migration	• Ecosystem-based adaptation and disaster-resilient integrated coastal land-use plan (sustainable use of coastal and marine resources such as fisheries and tourism); • Restoration and protection of mangrove ecosystems mitigating climate change and promoting economic benefits.
Gender inequality in the land-use management decision-making process	• Ensure equal representation and participation of both men and women in every phase of LDN implementation; • Promote women's leadership and participation in identifying land-degradation hotspots, and associated response measures in land-use planning, disaster risk reduction and prioritization of interventions in the designated sectors/site areas; • Ensure the effective and efficient distribution and use of resources among communities.

3.4 National and regional partnerships to leverage gains

The scaling up and development of genuine and durable partnerships with all stakeholders at national, regional and international levels are key for SIDS in their transition toward more sustainable and resilient communities. The SIDS Partnership Framework[22] has laid a strong foundation for future work for promoting and driving genuine and durable partnerships. During LDN target setting, SIDS continued to leverage regional partnerships to carry forward the transformative agenda. Some key examples are highlighted below:

- The Caribbean islands of Antigua and Barbuda, Belize, Dominica, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname and Trinidad and Tobago came together to identify opportunities for integrating gender in LDN transformative projects and programmes during a technical workshop entitled Strengthening Gender-Responsive and Climate-Smart Land Management in the Caribbean, which was co-organized by the Partnership Initiative for Sustainable Land Management (PISLM) in Caribbean SIDS, UNCCD/Global Mechanism, UN Women, IUCN and FAO, held from 26–28 September 2018 in Saint Lucia. Participant countries identified practical approaches to reinforce the capacities of all stakeholders on gender (especially women farmers' group representatives) and designed gender-responsive LDN Transformative Projects and Programmes.

Box 2: The Caribbean Small Island Developing States SoilCare Project

The estimates provided by the Economic Commission of the United Nations (ECLAC) on the costs of inaction regarding desertification and land degradation in LAC countries is of particular importance on how and why the national efforts to achieve LDN could efficiently and effectively allocate the required resources.[23] The LDN target setting participating Caribbean SIDS of Antigua and Barbuda, Belize, Grenada, Guyana, Haiti, Jamaica and Saint Lucia have developed a set of targets, based on baseline data, which they will track until 2030 (as part of their commitments to SDG 15), including the three LDN indicators. A multi-country soil management initiative is being established by these countries to mainstream sustainable and climate-resilient soil/land management in national policies and regional policy frameworks. The initiative aims to meet SLM and LDN targets, and to contribute to food security, environmental sustainability and achievement of the SDGs. It will also contribute additional data on issues such as soils and soil carbon, which are currently in need of being updated.

The High-Level Ministerial Body of the Partnership Initiative on Sustainable Land Management (PISLM) for Caribbean SIDS works toward achieving SDG Target 15.3 as a region. PISLM allocated resources from their respective countries' System for Transparent Allocation of Resources from the Global Environment Facility's 7th programme cycle (GEF-7 STAR) to undertake a set of specific actions at both the regional and national levels.[24]

- The Secretariat of the Indian Ocean Commission (IOC) hosted the Regional Expert Consultation on LDN in IOC SIDS and Madagascar, entitled Opportunities for Transformative Projects and Programmes, from 21–22 November 2018 in Ebène, Mauritius. The consultation brought together some 20 participants from Comoros, Madagascar, Mauritius and Seychelles, as well as participants from the World Bank, who put together a note entitled Neutral Islands (Neutral-is) – Mainstreaming land-use planning, solid waste management and sustainable agriculture in the peri-urban environment at landscape level in Indian Ocean SIDS and Madagascar.
- For the Pacific island countries, building resilience to climate change and disaster is extremely important, and achieving LDN is a priority in the region. The Pacific Community (SPC), through its Atoll Centre of Excellence for Sustainable Agriculture, is developing ways to increase crop production, improve marketing opportunities and raise local incomes. It is also is integrating sustainable agriculture and coastal management initiatives based on community-driven land-use planning, which can be leveraged as LDN targets and projects.
- Similarly, the Secretariat of the Pacific Regional Environment Programme (SPREP) is also promoting integration of climate change adaptation and disaster risk management through capacity building within an ecosystem-based approach to climate change resilience on islands. Several LDN-related projects are being implemented (expansion of a protected-areas network, capacity building to strengthen land-use planning, state of the environment assessment and reporting, biodiversity conservation).

At the mid-term review of the SAMOA Pathway in October 2018, the SAMOA partnership dialogue stressed SIDS partnership building at the international and regional organizational levels, as well as including national research organizations, local non-governmental organizations (NGOs) and private businesses as partners. Partnership building and peer-to-peer learning can pave the way forward for achieving the SDGs by 2030, and are essential for sharing success stories, best practices, improving awareness and sensitization as well for monitoring progress.

Partnerships for LDN initiatives further support the common stand of SIDS in combating climate change and improving bilateral and multi-lateral international relations and high-level negotiations. NGOs at the local level, such as women organizations, farmers associations, and youth environmental observatory and awareness clubs, are watchdogs of the state of land and environmental degradation, climate hazards and disaster occurrences. Partnerships will also provide the tools and working hands for achieving LDN at the local community level in SIDS. Empowering communities will ensure that LDN practices and climatic resilience is integrated with local cultures. The LDN E-Knowledge Platform further promotes knowledge sharing and exchanges, building the SIDS partnership framework toolbox adopted in the mid-term review of the SAMOA Pathway at the 74th session of the UN General Assembly (UNGA 74) in September 2019.

Box 3: Increasing Saint Lucia's capacity to monitor MEA implementation and sustainable development

In 2018, Saint Lucia's Department of Sustainable Development launched a National Environmental Information System to monitor the implementation of multilateral environmental agreements (MEAs) and sustainable development through the coordination of existing data and the collection of new data on the state of the environment. This integrated action will promote LDN if all sectors effectively and efficiently participate. In this regard, a grant has been received from the Global Environment Facility (GEF) to address issues related to environmental information management under the initiative "Increase Saint Lucia's Capacity to Monitor MEA Implementation and Sustainable Development." This initiative aims to support the development of the country's environmental information management system, improve coordination, help in the sharing of existing knowledge, and generate new information on the state of the environment.

3.5 Bridging the data gap and building knowledge management

SIDS are challenged by their limited data processing capacities, which are key to monitoring LDN and to reporting on the SDGs and MEAs. From the Barbados Programme of Action (BPOA) to the SAMOA Pathway, SIDS have struggled with and called attention to their lack of data and technical support for planning, monitoring and evaluation. One major achievement of the LDN Target Setting Programme was helping to filling these data gaps for SIDS by providing high-resolution data and technical support to build data capacity, with the assistance of partners such as FAO. The national assessments and identification of LDN indicators on land cover, land productivity and soil carbon content have contributed to establishing science-based LDN targets. The development an LDN knowledge platform to capture spatial data to continuously monitor both LDN and other MEAs is planned.

Capturing higher resolution spatial imagery of land cover has enabled the identification of temporal trends and drivers of land degradation as well as the identification of hotspots and potential disaster risk areas. However, there is an increasing need to build data capacity and resolve resource constraints (human, institutional and financial) to enable SIDS to achieve transformational change at scale. It is essential to highlight the urgent need to put in place an LDN monitoring system (GIS and remote sensing) and develop adequate human-resource skills at the national level to annually assess and review the land-use carrying capacity/LDN measures of each sector to achieve LDN by 2030. The setting up of a regional platform for tracking, monitoring and reporting is essential to the advancement of LDN in SIDS.

Periodic data on LDN will enable SIDS to improve national land-use planning processes through efficient land resource allocation to various economic and land-use sectors, while ensuring ecosystem functions are restored and protected, enabling sustainable development. It is also obvious that continued financial resources are needed to reach the goal of LDN – not only to address direct land degradation, but also to build human and institutional capacities as a contribution to changes in policies and strategies at national and local levels.



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4. ACHIEVING LDN IN SIDS: THE WAY FORWARD

4.1 LDN to achieve the SAMOA Pathway and SDGs

At the High-Level Midterm Review 2019 of the SAMOA Pathway on 27 September 2019 in New York, SIDS called for action on the development, adaptation and transfer of technology and policies for sustainable forest management to prevent and combat desertification, land degradation and drought in SIDS, and to boost knowledge exchange, including traditional knowledge, capacity-building and sharing of technologies on mutually agreed terms.

The SAMOA Pathway has identified numerous challenges linked to land degradation in SIDS with respect to depletion of freshwater resources, including pollution; the overexploitation of surface, ground and coastal waters; saline intrusion; drought and water scarcity; soil erosion; and wastewater treatment and disposal. In addition, changes in rainfall patterns related to climate change have regionally varying and potentially significant impacts on water supplies in SIDS. The LDN Target Setting Programme has captured relevant data supporting the establishment of the baseline LDN indicators as well as initiatives related to the implementation, monitoring and reporting on SDGs to set LDN targets for 2030. This LDN framework further consolidates and supports the implementation of several SDGs in addition to SDG 15 (see Figure 1 and Table 2, which outline how LDN acts as accelerator towards achieving SDGs).

LDN is an overarching approach, interlinked with and beneficial to the SAMOA Pathway, creating a means to upscale common efforts in meeting the SDGs. LDN fully complements the strategic objectives of the SAMOA Pathway and the SDGs, and acts as an accelerator to their implementation and future monitoring. LDN could help SIDS achieve several objectives of the SAMOA Pathway through investing, developing, adapting and scaling up the application of technologies, policies, methods and tools to combat desertification, land degradation and drought in SIDS. Adopting LDN inexorably consolidates efforts towards meeting the strategic objectives of the SAMOA Pathway (see Figure 9).

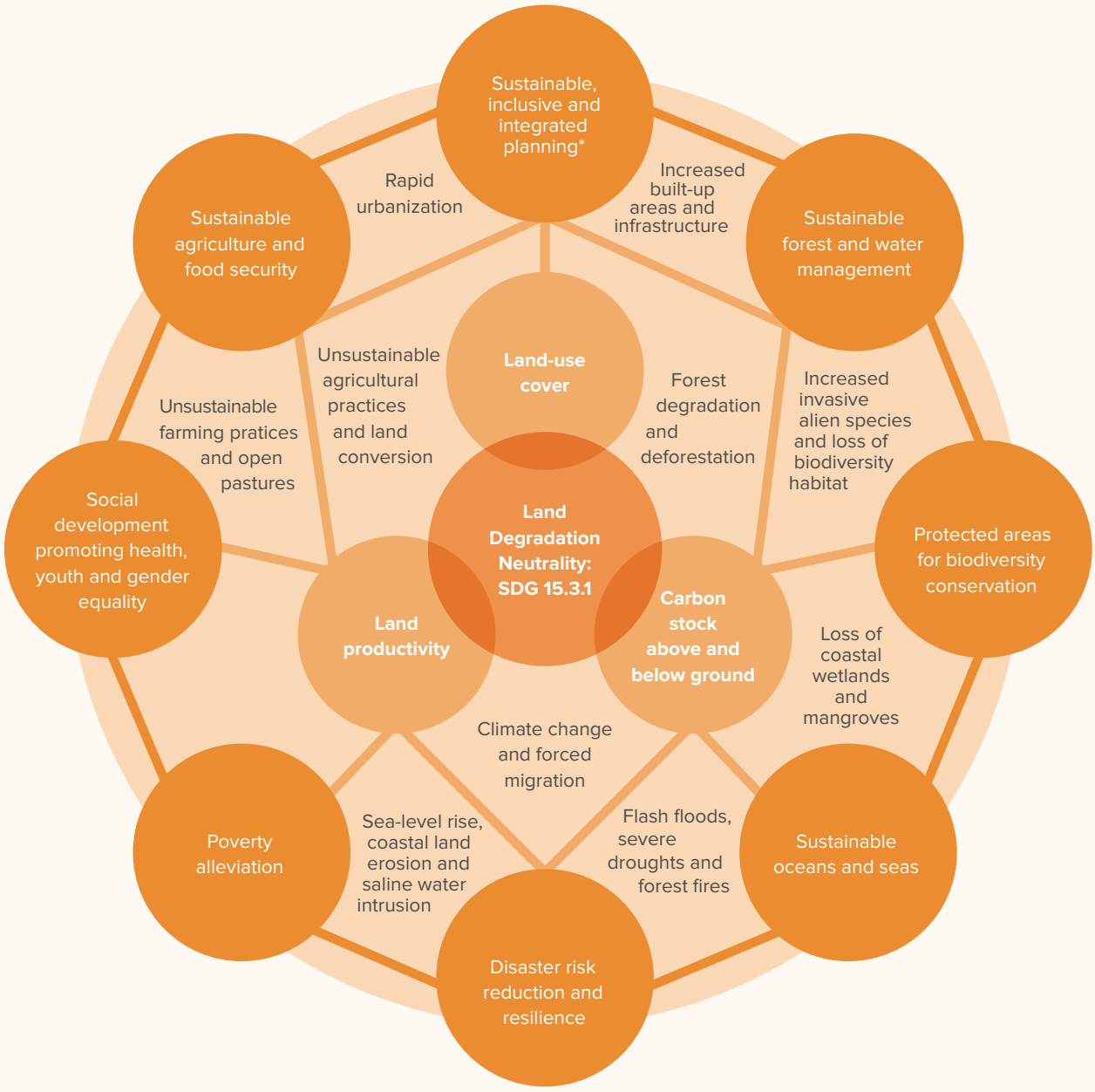
4.2 LDN for climate resilience, biodiversity conservation and disaster risk reduction

Linking climate change and biodiversity

LDN provides an overarching framework of complementary rehabilitation, restoration and SLM interventions to reduce the effects of threats associated with climate change, including sea level rise, coastal land erosion, saline water intrusion, loss of food and fresh water supply, loss of livelihood, conflicts, forced migration and other disaster risks to SIDS. Since 2014, several SIDS, such as Cape Verde, Mauritius, Sao Tome and Principe, Seychelles and Timor-Leste, have LDN targets and have identified unsustainable agriculture, land-use changes and forest degradation as main sources of carbon emissions in their Nationally Determined Contribution (NDC). In Guyana, the Agriculture, Forestry and Other Land Use (AFOLU) sector is responsible for 84% of the total greenhouse gas (GHG) emissions of the country. The removal of carbon emissions by forests is estimated at 3% of the total emissions of the country. Due to the role of terrestrial ecosystems as a sink for emissions, land is positioned as a key point of intervention for climate change mitigation and adaptation, as reflected in Guyana's NDCs.

There is a need to promote more synergies between SIDS respective objectives, particularly the actions at the national level, as the land-based approach offers an appropriate anchor for blending relevant priority actions under the three Rio Conventions using the linkages that exist between land and biodiversity, and land and climate change.

Figure 9 **LDN-SAMOA Pathway linkages**



*Sustainable, inclusive and integrated planning includes an equitable economy, transport, sources of energy, food, housing, forests, ecosystems and infrastructure.

SIDS have also earmarked sustainable agriculture practices, sustainable forest management, land-use planning, and energy-efficient infrastructural urban design as potential mitigating measures to reduce carbon emissions. The LDN Target Setting Programme in SIDS has provided baseline data indicators to monitor for land-use changes and forest degradation as well as the opportunity to set LDN restoration targets that directly contribute to the sequestration and reduction of carbon emissions (see Table 4). The baseline indicators will further support the review of NDCs in SIDS in 2020.

Table 6: Nationally Determined Contributions (NDC) linkages with LDN targets

NDC commitments by SIDS on mitigation and adaptation measures	Linkages with LDN targets/measures set by SIDS
Sustainable agriculture, agro-forestry and pasture management practices	Restoration of agricultural/farmland
Sustainable forest management and restoration	Restoration of forest and expansion of protected areas
Land-use planning and energy efficient infrastructure/building design	Mainstreaming LDN in national and sectoral plans and promoting integrated land-use planning by managing urban expansion
Integrated water resource management	Restoration across landscapes (agriculture, forest and biodiversity)
Encouraging renewable energy resources	Reducing deforestation and dependence on charcoal and wood as fuel sources
Increase resilience to disaster risks induced by climate change (flash floods, drought, sea level rise, coastal erosion)	Ecosystem-based adaptation measures to restore and protect water shed areas, forest cover, wetlands and mangrove coastal forest
National capacity building in determining GHG and carbon emission, and sequestration balance	Restoration of land productivity and soil organic carbon

Table 7: Potential linkages between LDN targets and measures and IPCC and IPBES as a means to address the cross-sectoral issues in biodiversity loss, land degradation and climate change relevant to SIDS

IPBES assessment report on land degradation and restoration, 2018[a]	IPCC special report on land and climate, 2019[b]	Potential linkages with LDN targets and measures
Climate change is projected to lead to large-scale migration, with much of the migration resulting from climate-induced land degradation	City-states as well as many small island states do not have adequate farmland to feed their populations.	Restoration and protection of productive agricultural/farm land. Contribute land to poverty alleviation and reduce forced migration.
Climate change and land degradation acting in tandem: Climate change has resulted in and will continue to result in desertification, in coastal erosion, and in flooding – all of which have been documented as increasing outmigration from affected areas. Large-scale outmigration is also expected from small island states as sea level rise progresses	Restoring mangroves through rewetting and reducing the conversion of coastal wetlands (mangroves, seagrass and marshes) could significantly contribute in reducing emissions by 2050. Mangroves are natural carbon sinks and are nationally important for SIDS with extensive coastlines. SIDS are particularly affected by land degradation induced by tropical cyclones, and climate change. Coastal degradation – for example, beach erosion, coastal squeeze, and coastal biodiversity loss – as a result of rising sea levels – is a major concern for low-lying coasts and small islands.	Restoration and protection of wetlands, mangroves in coastal areas will further help in reducing emissions as well as mitigate coastal land degradation and beach erosion. Hence, reducing disaster risk from land degradation, cyclones, sea level rise and coastal land erosion. Restoration of coast areas including wetlands and mangroves through ecosystem-based adaptation processes reduce further loss in coastal biodiversity and maintain the carbon sink.

Table 7: Potential linkages between LDN targets and measures and IPCC and IPBES as a means to address the cross-sectoral issues in biodiversity loss, land degradation and climate change relevant to SIDS *(continued)*

IPBES assessment report on land degradation and restoration, 2018[a]	IPCC special report on land and climate, 2019[b]	Potential linkages with LDN targets and measures
In the context of SIDS, natural capital values for international tourism informed the introduction of a Green Departure Tax on tourists to fund protection of coastal biodiversity – for example, in the Republic of Palau and Micronesia		LDN is focusing on innovative financing strategies to implement transformative measures. Public-private partnerships in nature-based tourism will play a key role in achieving LDN by 2030 in SIDS

[a] IPBES. 2018. The IPBES assessment report on land degradation and restoration. Montanarella, L., Scholes, R., and Brainich, A. (eds.). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Bonn, Germany. 744 pages.

[b] Intergovernmental Panel on Climate Change (IPCC). 2019. Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse gas fluxes in Terrestrial Ecosystems. Summary for Policymakers.

Figure 10 **Ridge to Reef landscape in Papua New Guinea**



Source: Yasmeen Telwala, 2018

Linking Ridge to Reef and Ecosystem-based Adaptation

The Ridge to Reef (R2R) processes, Ecosystem-based Adaptation (EbA) and disaster risk reduction measures were adopted by a few SIDS to identify LDN measures. EbA involves the use of biodiversity and ecosystem services to help people and communities adapt to the adverse impacts of climate change.[26] R2R, as defined in the Pacific island's initiative,[27] identified the landscape and ecosystem network at the source (watershed areas-mountain) to the coast and lagoon. Hence, the landscape (R2R) approach, including integrated land-use planning and managing ecosystems, is considered central in achieving LDN in SIDS. Loss of fertile topsoil and vegetation cover can be disastrous for SIDS, as a few hours of torrential rainfall (flash flooding) can cost the inhabitants their livelihoods, food security and even their lives. Restoration of degraded forest, agricultural land and wetlands (from the ridge and the river basin landscapes to coastal areas) is a priority for SIDS, as it reduces multiple direct impacts of land degradation downstream in wetlands and at the ocean's edge. Coastal wetlands and mangrove ecosystems are the habitat of for a large number of species, providing marine biodiversity, and are important as flood buffers, for fish spawning, protection of juvenile fish and preservation of coral reefs. Wetland areas are one the main land-use types for the LDN targets, as they support both the green (land) and blue (water) economies, particularly in SIDS.

The following EbA measures were designated as helping to achieve LDN in SIDS:

- Restore mangroves and coastal forest as coastal erosion measures against storm surges and the effects of sea level rise.
- Promote ground water recharge through water-sensitive urban design to channel storm water to replenish water tables and wetlands, and to reduce saline water intrusion.
- Restore native upland/mountain forest in watershed areas, and enhance biodiversity and quality of forest canopy by managing invasive alien species to mitigate against long-term drought, forest fires and other climate change effects (maintain carbon sink).
- Restore degraded abandoned croplands, maintain soil organic carbon content and mitigate climate change (carbon sequestration), thereby reducing food and water shortage risks.
- Expand protected area networks by restoring vegetation cover along river reserves, natural storm drains, mountains and steep slopes, acting as buffers to potential flash flooding disasters.
- Promote sustainable tourism through coastal zone management measures to protect near-shore marine resources.
- Encourage communities, civil society organizations and the private sector to participate in integrated land-use planning to manage competing land uses.

LDN reducing disaster risks

The Sendai Framework for Disaster Risk Reduction 2015–2030, adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, on 18 March 2015, outlines four priorities for action to prevent new and reduce existing disaster risks:

1. Understanding disaster risk;
2. Strengthening disaster risk governance to manage disaster risk;
3. Investing in disaster reduction for resilience; and
4. Enhancing disaster preparedness for effective response and to 'Build Back Better' in recovery, rehabilitation and reconstruction.

Integrated land-use planning as an LDN measure in SIDS has been identified as an essential tool for long-term disaster risk reduction. The mapping of land degradation hotspots in SIDS has enabled the identification of potential disaster risk areas and remedial measures. High disaster risk areas are also correlated to land degradation hotspots. The severity of land degradation and the response required in the hotspot areas are based on the frequency (seasonality) of occurrences and magnitude of its impacts on the landscape. The causal chains of land degradation and disaster risk can be further categorized to various levels of responses and areas of intervention at:

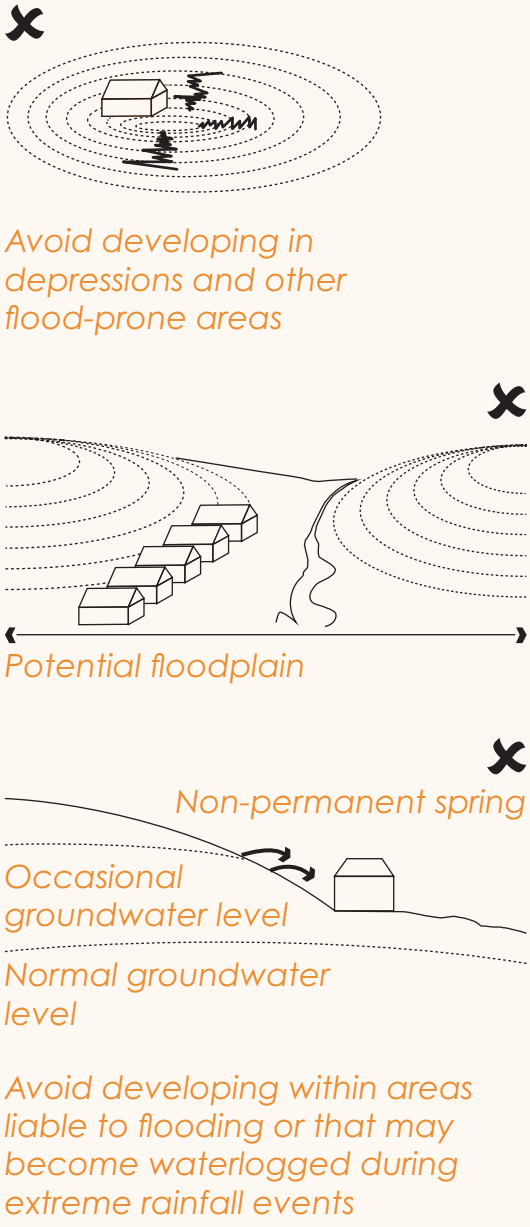
- Landscape level
- Ecosystem R2R level (mountain, ridge, forest, rivers, lakes, wetlands, coastal areas, reefs, etc.)
- Site level

Mapping the drivers and causes of potential land degradation at various landscape levels further enables ecosystem-based adaptation and integrated land-use (landscape) plan responses, for example:

- Restoring degraded forest and landscapes (sustainable forest management practices);
- Preparing forest fire management plans and capacity building in forest fire-fighting techniques;
- Expanding protected area networks (buffer or reserve protections) from R2R (mountains, steep slopes, rivers, lakes, coastal wetlands, reef system);
- Enabling sustainable land management (sustainable agriculture, good agricultural practices, etc.) at landscape and ecosystem levels;
- Managing urbanization with LDN-sensitive urban infrastructure design at local and site-specific levels;
- Restoring mangroves forest and wetlands.

These, in turn, reduce the risk of disasters, enabling communities to be prepared and resilient to the impacts of climate-induced disasters.

Figure 11 **Planning for disaster risk reduction in Mauritius**



Source: Mauritius Ministry of Housing and Lands, 2004

4.3 Sustainable cities and land-use planning through LDN

Rapid urbanization represents a significant challenge for national and local governments in SIDS with a current estimate of 59% of the total population in SIDS living in urban areas, with the percentage continuously increasing. UNOHRLLS and UNHABITAT have both emphasized that action on urban-rural linkages in SIDS should include enhancing infrastructure and housing, upgrading informal settlements, protecting ecosystems, and increasing access to energy and water, as well as increasing connectivity between rural and urban spaces. Promoting sustainable land and coastal planning and enhancing resilience of the urban and rural areas in SIDS are considered essential. LDN provides the framework for sustainable development of human settlements in SIDS through policy, planning and design, and regulatory instruments.

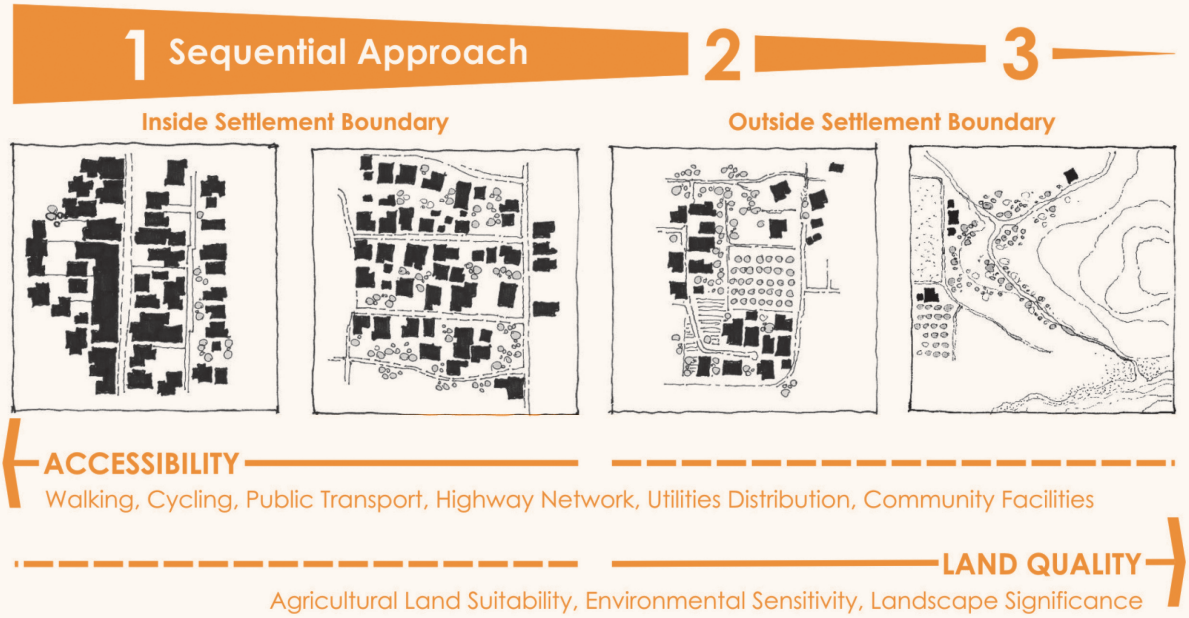
Land-use management and the urbanization process on islands are complex, with several ministries and multi-tier institutions being involved. However, it is essential to integrate LDN along with climate actions within the national strategic land-use planning mechanism to ensure that SDGs are met by 2030 and disaster risks are kept to a minimum.

The local outline planning schemes (local plans) may incorporate specific performance criteria in managing land-cover changes with the aim of clustering artificially built-up areas within existing settlement boundaries and minimizing urban sprawl in agricultural land whilst protecting forest land, river and mountain (steep slope) reserves, environmentally sensitive areas and areas of landscape significance.

Specific LDN urban design measures may be devised for artificial areas in SIDS, for example, in Mauritius (see Figure 13), by

- Defining building-plot coverage based on achieving LDN;
- Promoting vertical extension rather than horizontal settlement expansion;
- Promoting tree/forest conservation and native plants as soft landscaping features;
- Encouraging step building design and construction adapted to contour/slope to minimize cut and fill (excavation);
- Minimizing impervious layers, wherever possible, to allow for ground water replenishment and to reduce run off of storm water;
- Promoting water-sensitive urban design

Figure 12 Performance criteria for the sequential land-use planning approach as an outline planning scheme in Mauritius



Source: Mauritius Ministry of Housing and Lands, 2004

4.4 LDN and gender inclusion

The 2030 Agenda for Sustainable Development and the associated SDGs reinforce a focus on gender equality and the empowerment of women in access and control of natural resources such as land. Despite progress in implementing gender-responsive initiatives globally, gaps remain in country efforts toward meeting SDG 5: Achieve gender equality and empower all women and girls.[28]

Land degradation and climate change have been recognized as root causes of poverty and social instability in SIDS. These issues can lead to domestic violence, conflict and forced migration as a result of resource scarcity and increased disaster occurrences. Out of the population of 65 million in SIDS, approximately 50% are female within the working-age group.[29] Women are the first bearers of food and water in SIDS and are more sensitive to issues of land degradation, as they are at the forefront of facing the climate-induced impacts of sea level rise, coastal erosion, saline water intrusion, and depletion of fresh water and food supply.[30] Women in SIDS are more exposed to disaster risks as they have higher levels of poverty, have extensive responsibilities in caring for others, are more prone domestic and/or sexual violence, and lack access to land and resources. The need for gender-disaggregated data in national assessments and for engaging women and vulnerable social groups in land-related issues are being increasingly acknowledged.

The UNCCD's Gender Action Plan represents a landmark opportunity to transform gender equality and human rights into action. Its overall goal is to support and enhance the implementation of the gender-related decisions and mandates adopted in the UNCCD process. *The Manual for gender-responsive land degradation neutrality transformative projects and programmes*[31] provides step-by-step guidance to countries on integrating gender issues and promoting gender equality in the design of transformative LDN projects.

Raising awareness at the community level and mainstreaming gender into LDN are well recognized by SIDS as integral to achieving LDN. SLM implementation in SIDS involves an assessment of communal tenure systems, traditional land-use practices, cultural values, and the integration of environmental and developmental decision-making. For example, some SIDS in the Caribbean (Antigua and Barbuda, Belize, Dominica, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago) came together to identify opportunities for integrating gender in LDN Transformative Projects and Programmes during a technical workshop entitled ''Strengthening Gender-Responsive and Climate Smart Land Management in the Caribbean'', co-organized by the PISLM, the Global Mechanism of the UNCCD, UN Women, the International Union for Conservation of Nature (IUCN) and FAO, held on 26-28 September 2018 in Saint Lucia. Participant

Box 4: Mauritius integrated LDN and the National Planning Policy Guideline

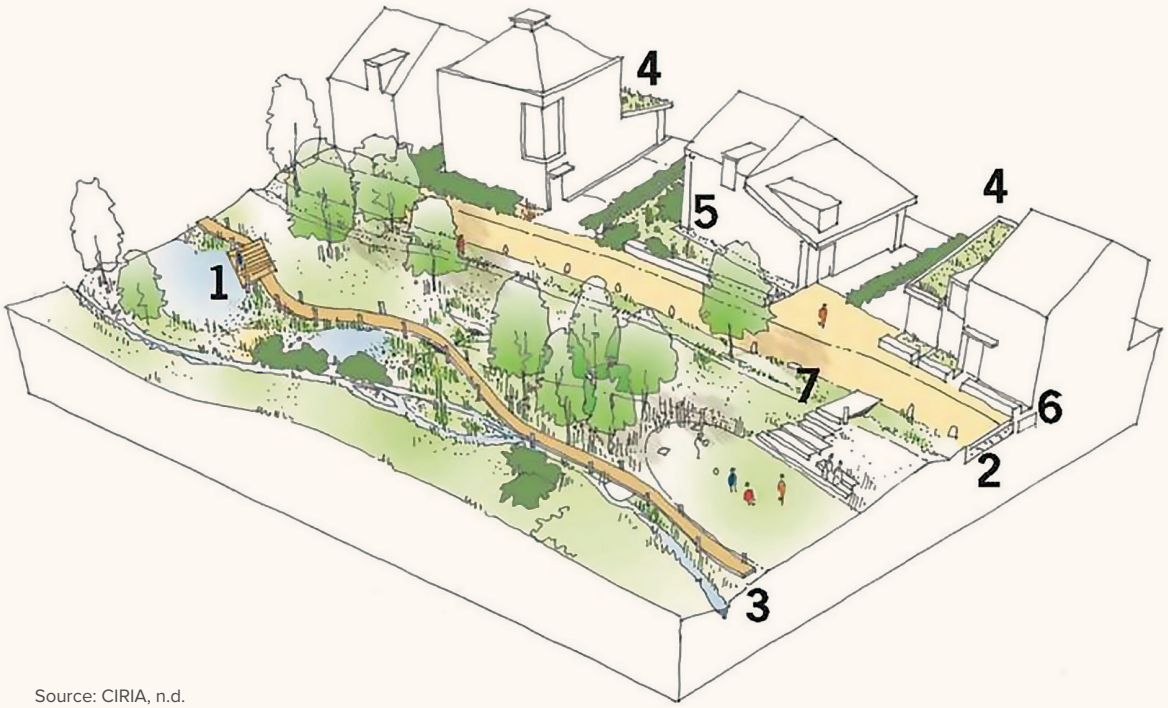
In Mauritius, the total annual cost of land degradation is estimated at USD 16 million – this is equal to 0.2% of the country's GDP. A considerable share of the costs of land degradation (37%) is due to the decline in ecosystem services (such as food security, water supply, etc.), which has a significant impact on the population of the country.

The National Development Strategy (NDS) of Mauritius provides the basis for strategic land-use planning. The policies and proposals of the NDS have been successfully translated at the local level through the preparation and approval of local development plans for both urban and rural areas. During the LDN target setting process, Mauritius has further committed to minimizing land degradation in artificial areas by applying specific LDN land-use planning policy and urban design guidelines and the national development strategy (such as the ratio of tree cover, green area to built-up area including infrastructure, roads, excessive parking requirements and driveways, building-plot coverage); minimizing land degradation in infrastructure expansion by applying specific LDN water-sensitive urban infrastructure designs to allow for adequate run-off water percolation and ground-water recharge; and putting in place landform/terrain profile/slope-change monitoring systems on steep slopes to restore wetlands and mangrove in coastal areas and encourage ground-water recharge to mitigate saline water intrusion.

Figure 13 **Water-sensitive urban design**

Sustainable drainage systems (SuDS) in low-density developments

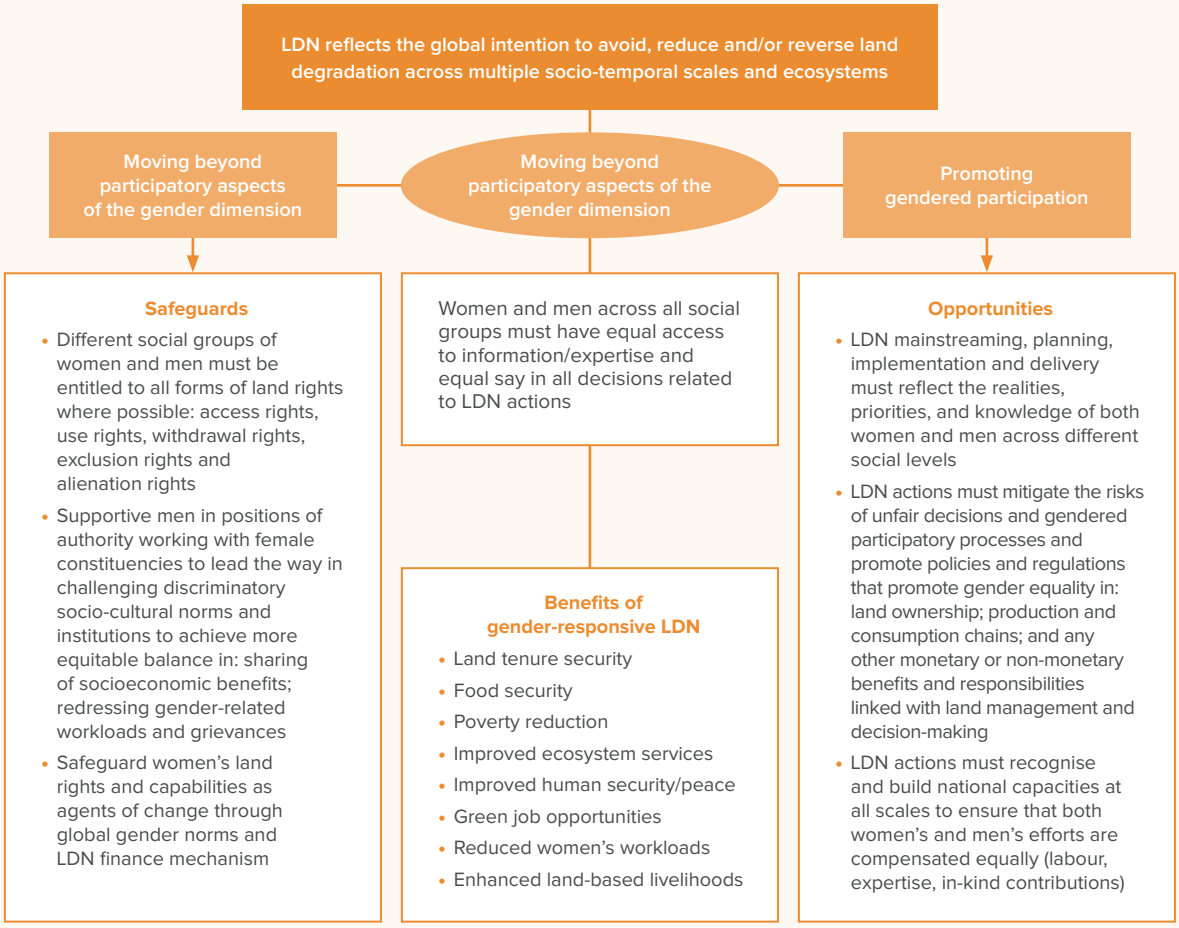
1. Wetland area
2. Permeable paving
3. Natural waterway
4. Green roofs
5. Rainwater collection into rain gardens and/or water butts
6. Rainwater harvesting
7. Road-side swale



Source: CIRIA, n.d.

countries identified practical approaches to reinforce the capacities of all stakeholders on gender (especially women farmer group representatives) and designed gender-responsive LDN Transformative Projects and Programmes.

Figure 14 **Gender-responsive Land Degradation Neutrality Framework**



Source: Uche et al., 2019

4.5 From LDN targets to implementation: Mobilizing financial mechanisms and enhancing national capacities

LDN Transformative Projects and Programmes seek to generate and sustain fundamental and positive change in the coupled human-environmental system where interventions are targeted. Positive change in the frame of LDN Transformative Projects and Programmes can be pursued through sustainable and inclusive interventions at scale (e.g., in landscapes) while featuring innovation in terms of locally adapted technology, practices and financial mechanisms (e.g., blended finance). LDN Transformative Projects and Programmes have the potential to mobilize climate finance as well as to provide cross-cutting inclusive goals by

- maintaining or improving the sustainable delivery of ecosystem services;
- maintaining or improving productivity in order to enhance food security;
- increasing resilience of the land and populations dependent on the land;
- seeking synergies with other social, economic and environmental objectives; and
- reinforcing responsible and inclusive governance of land.

Funding framework for LDN

The LDN Transformative Projects and Programmes in SIDS should adopt a far-reaching and integrated approach to respond to the effects of land degradation, climate change and disaster risk. *Land Degradation Neutrality Transformative Projects and Programmes: Operational Guidance for Country Support*, produced by Global Mechanism of the UNCCD, 2019,[32] presents information related to the development and implementation of LDN

Table 8: Entry points and measures to achieve LDN targets, and potential funding frameworks

Entry points of LDN targets	Measures to achieve LDN targets	Potential LDN funding frameworks
1. Mainstreaming LDN in relevant sectoral plans, multilateral environmental agreements and public-private partnerships	1.1 Mainstream LDN/SLM in legal and institutional frameworks at national and/or regional levels, and regularize land tenure in sectoral plans; 1.2 Align UNCCD National Action Plans with LDN targets and measures; 1.3 Manage urbanization by integrating LDN in national spatial land-use planning in coastal area (ridge, mangroves-beach-reef) restoration, climate resilience and adaptation; 1.4 Integrate the LDN process with disaster risk reduction and management; 1.5 Identify and develop LDN financing incentives and mechanisms, including international funding, national investment schemes and private-public partnerships.	Adaptation Fund, GEF-7, Commonwealth Climate Finance Hub, Green Climate Fund (GCF), Global Climate Change Alliance, Least Developed Countries Fund, Pilot Program for Climate Resilience, Agence Française de Développement (AFD), LDN Fund, National Public-Private Partnership Financing (NPPPF), bilateral donors and national budgets.
2. Restoring degraded forest and enhancing protection measures for existing native forest cover and biodiversity	2.3 Promote sustainable forest management (SFM), reduce forest and landscapes loss, and manage and restore degraded forest (national forest inventory and planning, forest-fire management and planning) through landscape restoration; 2.4 Integrate soil and watershed management, and restore fresh water resources and catchment areas (basin, lake, rivers reserves, storm-water drains and ground-water replenishment).	GEF-7, Forest Carbon Partnership Facility (FCPF), UNREDD Programme, Global Forest Financing Facilitation Network (GFFFN), LDN Fund, NPPPF, bilateral donors and national budgets.
3. Restoring degraded agricultural land and protecting productive lands	3.1 Promote sustainable agriculture and land productivity management/restoration of cropland through good agricultural practices; 3.2 Restore pasture and grassland, and apply pasture management practices; 3.3 Restore degraded/abandoned land.	GEF-7, Adaptation for Smallholder Agriculture Programme (ASAP), LDN Fund, NPPPF, bilateral donors and national budgets.
4. Raising awareness and monitoring LDN and SLM practices	4.1 Devise LDN communication, awareness and sensitization campaigns; 4.2 Establish an LDN knowledge-management platform including a monitoring and evaluation system; 4.3 Focus on LDN community learning and leadership development programmes.	GEF-7, Adaptation Fund, GCF, Commonwealth Climate Action Finance Hub, AFD, LDN Fund, NPPPF, bilateral donors and national budgets.

Transformative Projects and Programmes and provides a broad range of funding sources, strong opportunities and entry points for LDN. This section provides a brief overview of some of the financing mechanisms specifically relevant to LDN in SIDS and is based on the following four LDN target entry points:

1. Mainstreaming LDN in relevant sectoral plans, multilateral environmental agreements and public-private partnerships;
2. Restoring degraded forest and enhancing protection measures for existing native forest cover and biodiversity;
3. Restoring degraded agricultural land and protecting of productive lands;
4. Raising awareness and monitoring LDN and SLM practices.

Box 5: The Accreditation Master Agreement between the Pacific Community and the Green Climate Fund

The Green Climate Fund (GCF) signed an Accreditation Master Agreement (AMA) with the Pacific Community (SPC) in November 2019. This provides the legal framework for funding climate projects to match the Pacific islands' extreme vulnerability to climate impacts. This agreement will help SPC to facilitate access for the 14 SPC members that are signatories of the UN Framework Convention on Climate Change (UNFCC) to access the GCF funding for climate-related projects (up to USD 50 million per project) in various areas such as food security, health, resilience, ecosystems management, oceans, fisheries and renewable energy. With this funding, SPC provides a wide range of services to its members, which will further expand opportunities for Pacific SIDS to have LDN projects ranging from mitigation to adaptation to climate change, while tackling land degradation.

SIDS can submit LDN Transformative Projects and Programmes based on a funding framework relevant to the main LDN targets, entry points and associated measures (see Table 8).

The Global Environment Facility (GEF) emphasises the needs of SIDS and Least Developed Countries (LDCs). Recognizing that SIDS need enhanced and urgent action to address land degradation through the current GEF-7 funding cycle (2018–2022), GEF continues to provide strong support LDN implementation as part of its mandate. It has allocated USD 233 million to SIDS. The GEF Trust Fund has a special window for SIDS and LDCs under the Chemicals and Waste focal area, with regional funds available under the International Waters focal area, resources via the GEF Small Grants Programme.

Between 2003 and 2018, USD 596 million of climate finance from multilateral climate funds has been approved for project activities in SIDS, representing 35% of total SIDS funding. Almost a third of this finance comes from the Least Developed Countries Fund (32%) and over a third from the GCF (35%). However, the sectors benefiting most from climate finance suggest a focus on a few sectors, such as humanitarian aid, disaster prevention and preparedness, water and sanitation, and energy generation and supply. Although NDCs from SIDS stress forestry and disaster-risk reduction, they receive only limited support from climate finance. The LDN Transformative Projects and Programmes has the potential to mobilize climate finance while integrating spatial and temporal planning, which are critical for building long-term resilience to climate change. The Green Climate Fund (GCF) is the largest dedicated fund for climate action, serving the Paris Agreement. GCF aims to allocate at least 50% of the adaptation funding for particularly vulnerable countries, including LDCs, SIDS and African States. In SIDS, the adaptation measures are most critical in agriculture and fisheries, coastal environments, biodiversity, water resources, human settlements and infrastructure, and the health sector; and tackling land degradation can directly contribute towards meeting the goals explained in previous sections. GCF is ready and willing to increase its support for SIDS.

Likewise for climate financing, the **Adaptation Fund** has committed USD 114.6 million to support 26 SIDS from 2003–2018 with adaptation projects, technical assistance and project formulation grants.

In addition, the following SIDS have access to the **Commonwealth Climate Action Finance Hub (the Hub)**:[34] Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Fiji, Grenada, Guyana, Jamaica, Kiribati, Maldives, Mauritius, Nauru, Papua New Guinea, Samoa, Seychelles, Solomon Islands, Saint Lucia, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Singapore, Tonga, Trinidad and Tobago, Tuvalu and Vanuatu. The Hub is the Commonwealth's response to the ongoing and future threats of climate change to its member countries. The primary aim of the Hub is to help small and vulnerable countries access international sources of climate finance to help meet their priority adaptation and mitigation needs and realize the SDGs.

Following the Paris Climate Agreement, **Agence Française de Développement (AFD)**[35] has launched Adapt'Action to support countries seeking technical assistance for the institutional, methodological and operational implementation of their commitments to the fight against climate change. With an objective of EUR 30 million over a four-year period, Adapt'Action will support 15 countries, with a priority focus on Africa, LDCs and SIDS.

At its eleventh session in 2015, the United Nations Forum on Forests (UNFF) established **the Global Forest Financing Facilitation Network (GFFFN)** as one of the six elements of the UN Forest Instrument (UNFI), with special consideration for accessing the funds to be given to SIDS and countries with economies in transition.

The LDN Fund[36] has a mission to become a source of transformative capital bringing together public and private investors to fund projects with environmental, social and economic benefits that contribute to LDN. The LDN Fund will invest in profitable private sector projects worldwide to deliver competitive returns for investors, with a targeted capital allocation of at

least 80% in developing countries, in sustainable agriculture, sustainable forestry, and other LDN-related sectors, such as green infrastructure and ecotourism.

National financing and innovative investment frameworks

The 2030 Agenda for Sustainable Development emphasizes national resources as an important source of finance available to fund the SDGs. However, compared with larger economies, SIDS are facing varied levels of social, geographical, demographic and economic stresses. The economies of SIDS are much less diversified, with a narrow resource base and relatively limited types of activities. They do not easily benefit from economies of scale. Therefore, national public financing of LDN Transformative Projects and Programmes and climate adaptation and disaster risk reduction measures are challenging for many SIDS.

Several SIDS, such as Mauritius and Seychelles, are working on including SDGs within their programme-based national budgeting and public sector investment programmes. They are also putting in place national public-private partnership financing (NPPPF) frameworks for co-financing collaboration of the private sector in meeting SDGs. LDN Transformative Projects and Programmes, through the LDN Working Group, may benefit from establishing public-private partnership agreements to jointly achieve LDN in collaboration with other bilateral and multilateral funding agencies (AFD, European Commission, GCF, GEF, the Hub, etc.).

The Mauritius Strategy for Implementation of the Programme of Action for SIDS, 2005, emphasized the role of strategic private sector partnerships and public-private partnerships. This strategy acknowledges, similarly to what UNOHRLLS have argued, that industries such as fisheries, marine resources, renewable energy, transport, ICT, sustainable tourism, agriculture and disaster risk reduction can play a critical role for achieving green growth in SIDS.

In recent years, the concept of the blue and green economy has been embraced by some SIDS, where ocean-based economic development could help create new employment opportunities while moving away from predominantly land-based industries and focus on ecosystem-based approaches. For example, in 2018, Seychelles launched the world's first sovereign blue bond as a financial instrument designed to support sustainable marine and fisheries projects.[37] The role of the private sector is crucial in the sustainable use of oceans and connectivity, as well as in growing sectors such as tourism, which is becoming a main economic contributor for many SIDS. However, if tourism is not managed sustainably, it can generate large amounts of waste and draw on already limited land resources. The shift to economies that are based on ocean conservation and related tourism industries are important future considerations for SIDS, as they are not yet fully explored in their national LDN commitments. The role of international partners to build technical capacity to develop, manage and evaluate bankable projects for SIDS is considered crucial.



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5. CONCLUSION

Small Island Developing States (SIDS) are continuously under the threat from the adverse effects of climate change and land degradation impacts. Erratic climatic patterns have made daily weather previsions unreliable and are becoming a challenge for communities to take appropriate timely and preventive measures. Land degradation directly increases CO_2 emissions, contributing to climate change and vice versa. The LDN Target Setting Programme (TSP) of the UNCCD has substantially contributed to land degradation receiving the policy attention and securing political commitments for addressing the obvious and immediate threats of climate change and natural disasters to SIDS. It has strengthened the availability and accessibility of data for assessing land degradation and enabled SIDS to set specific measurable science-based targets.

Leveraging on the building blocks of the LDN TSP with nationally determined contributions (NDCs) of UNFCC, the Aichi Biodiversity Targets of the CBD, and the Sendai Framework of the United Nations Office for Disaster Risk Reduction (UNDRR), along with monitoring of SDG targets, particularly 15.3, has further consolidated LDN in SIDS. This leveraging enables setting specific measurable targets for the advancement of the SLM agenda of the UNCCD as well as other MEAs including the SDGs, SAMOA Pathway, Paris Agreement and Sendai Framework. Moreover, it is essential to integrate LDN and climate actions within national strategic land-use planning mechanisms to ensure that SDGs are met by 2030 and disaster risks are kept to a minimum.

Land-use management and the urbanization process in SIDS are complex, with several ministries and multi-tier institutions being involved, and SIDS have limited land resources. In order to maintain sustained economic growth whilst preserving land and environment resources, an integrated approach to land-use planning and ecosystem-based adaptation is proving to be vital for protecting ecosystem functions together with balancing competing land uses in order to achieve LDN. Furthermore, the legal and institutional framework should be strengthened to closely manage land-use conversion.

It is important for SIDS to further acquire highly accurate spatial land-cover and elevation data and to develop adequate human resource skills to put in place an LDN GIS and remote sensing system at the national level. These will be used to continuously monitor and periodically assess the progress of LDN in SIDS to ensure its implementation by 2030. The provision of digital/high-resolution imagery and data will help SIDS to predict the extent of future damages and losses occurring due to sea level rise, coastal erosion, saline water intrusion, flash floods and landslides. Building capacity and bridging the knowledge gap in achieving LDN in SIDS will improve the national land-use planning process by encouraging efficient land-resource allocation to various economic and land-use sectors, while ensuring ecosystem functions are restored and protected.

The setting up of a regional LDN knowledge e-platform for tracking, monitoring and reporting is essential to the advancement of LDN in SIDS. It will advance peer learning of LDN best practices among SIDS and promote the sharing of data and knowledge at both regional and global levels.

Economies of SIDS not diversified, with a narrow resource base and relatively limited range of activities. National public financing for LDN projects, climate adaptation and disaster risk reduction measures are challenging for many SIDS. In order to upscale LDN, substantial investment programmes, such as traditional multilateral and bilateral funding including new innovative financing options and incentive packages, are much needed.

Identifying common ground and building collaborative partnerships among stakeholders including private sector operators and NGOs are proving to be beneficial in achieving LDN targets in SIDS. Empowering community leaders and NGOs (farmers' organizations, and women's and youth associations) as role models will inspire future generations and strengthen the commitments of present political leaders in consolidating LDN programmes.



To ensure the sustainability of LDN, it is crucial that the LDN Transformative Programmes and Projects in SIDS maintains and consolidates the existing LDN national working groups (Technical Advisory Committee for Sustainable Land Management).

Likewise, an LDN public-private partnership road map, which identifies management structures and agreements, implementation plans, financing mechanisms (national and international), sensitization and communication strategies, knowledge


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management, capacity building, and monitoring and reporting processes, should be put in place.

Several SIDS have successfully ensured adequate women's representation in the national working groups during the LDN target setting process in their respective countries. Gender considerations and mainstreaming in LDN Transformative Projects and Programmes will further ensure that women play a key role in both the target setting and formulation of gender-responsive measures at the institutional, planning and political decision-making levels.

Annex 1 Matrix of drivers of land degradation identified by SIDS

Regions	Indian Ocean			Atlantic Ocean		Caribbean islands				Pacific Ocean		
Drivers Land degradation in SIDS	Seychelles	Comoros	Mauritius	Cape Verde	Sao Tome and Principe	Saint Lucia	Grenada	Guyana	Dominican Republic	Papua New Guinea	Samoa	Timor-Leste
Increasing rate of urbanization	●	●	●	●	●	●	●	●	●	●	●	●
Increased land conversion to built-up areas	●	●	●	●	●	●	●	●	●	●	●	●
Unsustainable agricultural practices	●	●	●	●	●	●	●	●	●	●	●	●
Open grazing and intensive livestock farming activities	○	●	●	●	●	●	○	●	●	○	○	●
Deforestation, resulting in loss of forest cover and native biodiversity	○	●	●	●	●	●	○	●	●	●	●	●
Change in land drainage processes due to human activities, including mining	●	●	●	●	●	●	●	●	●	○	●	○
Climate change-induced disasters	●	●	●	●	●	●	○	●	●	●	●	●
Coastal erosion and saline water intrusion	●	●	●	○	●	●	○	●	●	○	●	○

● Land degradation driver is present ○ Land degradation driver is not present

Annex 2 Matrix of country-based LDN targets/measures formulated by SIDS

Regions	Indian ocean			Atlantic ocean		Caribbean islands				Pacific ocean		
LDN SIDS targets/measures	Seychelles	Comoros	Mauritius	Cape Verde	Sao Tome and Principe	Saint Lucia	Grenada	Guyana	Dominican Republic	Papua New Guinea	Samoa	Timor-Leste
Restore watershed areas	●	●	●	●	○	●	●	●	○	●	●	●
Manage and restore degraded forests	●	●	●	●	●	●	●	●	●	●	●	●
Biodiversity management and protected area expansion	●	●	●	○	○	●	●	●	●	●	●	●
Sustainable agriculture/restoration/ good agricultural practises	●	●	●	●	●	●	●	●	●	●	●	●
Restore shrubland and promote sustainable pasture management	○	●	●	●	○	○	●	○	●	●	●	○
Restore degraded/abandoned land	●	●	●	●	○	○	●	○	●	●	○	●
Manage urbanization and integrate spatial land-use planning	●	●	●	●	●	●	●	●	●	●	●	●
Coastal area management – mangrove/beach/reef restoration	●	○	●	○	○	○	○	●	○	○	●	○
Integrate LDN process in disaster risk management and reduction	●	○	●	○	○	○	○	○	○	○	●	●
Mainstream LDN/institutions and sectoral plans	●	●	●	●	●	●	●	○	●	●	●	●
Raise LDN awareness and sensitization campaign at all levels	●	●	●	●	●	○	●	○	●	●	●	●
Build knowledge management platform	●	●	●	●	●	○	●	○	●	●	●	●
Improve capacity in monitoring and evaluation system	●	●	●	●	●	●	●	○	●	●	●	●
Mobilize innovative financing and build public-private partnerships	●	○	●	○	●	●	○	○	●	●	●	○

● LDN target/measure ○ Not an LDN target/measure

ENDNOTES

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