



PROJECT TITLE	Integrated Landscape Management for Addressing Land Degradation, Food Security and Climate Resilience Challenges in The Bahamas
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Foreword

The alignment of the National Action Programme (NAP) to combat land degradation in keeping with the direction of the UNCCD 2018–2030 Strategic Framework to the UNCCD is an obligatory and practical undertaking. Through this undertaking the government of The Bahamas will ensure that its economic development both in the short and the long term, does not cause undue adverse effects on its people, who should be the very beneficiaries of the development process.

The alignment process commenced with a clear understanding that The Bahamas’s limited land space is the foundation for sustainable development. This notion resonated among the diverse group of stakeholders involved in the process. In this regard, it is the firm belief of my Ministry that land and soil resources must be managed in a sustainable manner to guarantee the provision of essential goods and services to our people in this and future generations.

The governance and management challenges associated with meeting our national development needs while protecting our limited land resources are well documented in this and related documents. The aligned NAP presents a practical framework for addressing the drivers and pressures on our land that combine to create varying negative impacts and degrees of vulnerability. Included in the NAP are practical interventions and mechanisms, which when supported by enabling legislation and adequate organizational and technical capacity, will serve as the driving force to achieve the goal of integrated, sustainable and environmentally sound national development.

It is envisioned that the motivation generated during the NAP alignment process will be sustained through continued engagement of key stakeholders at all levels. What remains is the need to mobilize resources for the implementation of the NAP to support a transition from knowledge to practice. The formulation of this aligned NAP is rather timely, in light of the challenges associated with climate change, especially those that can impact biodiversity. These challenges exemplify the need to take stock of nature base solutions that exist in proper land management and taking concerted action to ensure that our policy responses and land use actions lead to increased ecosystem resilience.

I trust that this work will be readily adopted as our primary guide in managing the land resources of The Bahamas.

Hon. Vaughn Miller

Minister of the Environment and Natural Resources

Acknowledgement

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Executive Summary

The wide range of impacts on livelihoods, ecosystem health and integrity are compounded by Desertification, Land Degradation and Drought (DLDD). Land productivity and its ability to provide ecosystem services at local, national and regional scales are limited by desertification, land degradation, and drought. This is manifested in the loss of fertility and nutrients, carbon sequestration, wood production, grazing and hunting opportunities, nature conservation and tourism, which all have direct impacts on the economy. There are also significant off-site impacts from DLDD, which include changes in stream flow, reliability of irrigation, water flow, a decline in quality of drinking water, and the silting of rivers. It is arguably now more important than ever to build resilience to DLDD. With projected global temperature increases, extreme events could occur more frequently in a globally synchronized way. The level of land degradation determines its effects on the provision of ecosystem services and the benefits humans derive from those services. Therefore, actions have to be taken to control the causes, level or effects of degradation.

Sustainable Land Management (SLM) and ecosystem restoration as resilience-building activities have the potential to break the downward spiral of desertification, land degradation, and drought. Climate change, land degradation and biodiversity loss share the same underlying causes. The three Rio Conventions thus share synergies in possible policy and practical responses. Ongoing projects and programmes in The Bahamas that seeks to better inform biophysical and socio-economic baseline information on DLDD, will strengthen the implementation of the United Nations Convention to Combat Desertification (UNCCD) in keeping with the *2030 Agenda for Sustainable Development*. This offers an opportunity for The Bahamas to curb the growing threats of land degradation and reap multiple socio-economic benefits of LDN. Some notable projects, programmes, and initiatives that are ongoing in The Bahamas include:

- ✚ The Bahamas Land Management System Project to acquire and implement specialised mapping equipment including landfolio for land management – support from Trimble Inc.
- ✚ Integrated Landscape Management for Addressing Land Degradation, Food Security and Climate Resilience Challenges in The Bahamas – support from GEF.
- ✚ Ecosystem Management Project to develop a model of integrated land, water and ecosystem management for The Bahamas – support from GEF.

 Pine Islands – Forest/Mangrove Innovation and Integration (Grand Bahama, New Providence, Abaco and Andros) Project to integrate biodiversity considerations and ecosystem services into forest management and land use planning – support from GEF.

These ongoing efforts offers an opportunity for The Bahamas to curb the growing threats of land degradation and reap multiple socio-economic benefits of land degradation neutrality (LDN).

Striving to achieve Sustainable Development Goal (SDG) target 15.3 is a strong vehicle for driving the implementation of UNCCD. Elements such as leverage and impact, LDN targets, partnerships and resources mobilization, transformative actions, and monitoring and reporting will guide The Bahamas along the path of achieving SDG target 15.3. The Bahamas is currently in the process of setting national voluntary LDN targets, establishing the LDN baseline, and formulating associated measures. This further shows The Bahamas’s commitment to achieving LDN by 2030. The LDN targets will provide The Bahamas with a strong vehicle for fostering coherence of policies and actions by aligning the national LDN targets with measures from the Nationally Determined Contributions and other national commitments. Investing in LDN also accelerates the advancement of other SDGs due to the close linkages between land and other goals and targets.

The Bahamas is strongly committed to meeting its obligations to prevent and mitigate drought, land degradation and deforestation in the country given the direct and indirect ability to cause death, poor health, and in many other ways negatively affect the livelihood of its peoples. The government of The Bahamas will ensure that its economic development both in the short and the long term, does not cause undue adverse effects on its people, who should be the very beneficiaries of the development process.

Coordinating and managing the sometimes conflicting demands on the land is very challenging. As such, the government of The Bahamas is encouraged to increase engagement in collaborative management with its various stakeholders (government agencies, Civil Society Organizations, Non-Governmental Organizations, private sector, businesses, donors, etc.) as a reflection of this shared responsibility. All levels of society shall have a voice and influence on the future of The Bahamas. The government of The Bahamas is making substantial progress in improving and adjusting existing policies and regulations, as well as designing new ones. These include effective safe guarding mechanisms, mitigation measures, and promotion of more sustainable land use practices. It is equally crucial that policies and land use practices are underpinned by science, research, and local and traditional knowledge. Reliable research depends

on good data, however there is a lack of reliable data and baselines in several sectors, as well as limited or no integration of existing datasets.

The efforts to combat DLDD will have substantial benefits for biodiversity, which is the basis for long term food security. There is also linkage to target 2 of the *Kunming-Montreal Global Biodiversity Framework*, which seeks to ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity. These combative efforts will also benefit climate change mitigation/adaptation since many of the causes and solutions to those problems are to be found in appropriate SLM practices and improved governance. The government of The Bahamas continues to rigorously pursue the process of strengthening coordination and cross-sectoral collaboration to ensure integrated approaches to combating DLDD.

The Bahamas stands a great chance in benefitting from UNCCD implementation but a number of policies need to be put in place. Most of the laws are either not clearly defined or outdated. Prompt measures need to be put in place to address this situation which is gravely affecting The Bahamas's chances of benefitting from implementing agencies such as UNCCD. To secure continued progress in the implementation of UNCCD in The Bahamas, the following recommendations should be considered:

- ❖ Increase the awareness among citizen and potential investors on the importance and long term benefits of LDN
- ❖ Formulate monitoring and coordinating mechanisms for implementation of UNCCD especially at the local level
- ❖ Formulation of a UNCCD committee under the Ministry of the Environment and Natural Resources to ensure monitoring and follow-up process in the implementation of UNCCD
- ❖ Increase efforts at the community level to better integrate individuals in solving land degradation issues and achieve cultural changes in unsustainable land use practices which counter LDN
- ❖ Greater collaboration among Ministries, Departments and Agencies involved in climate change adaptation, land management, and disaster risk reduction
- ❖ Align agricultural practices to support the achievement of LDN (for example climate smart agricultural and sustainable soil management practices)

- ❖ Establish, implement and coordinate integrated land use planning to avoid or minimize habitat fragmentation and damage to ecosystems
- ❖ Increase efforts to promote sustainable tourism practices
- ❖ Increase expertise and technology needed to capture and interpret information on land resources and the impact of climate change
- ❖ Leverage financial, technical and capacity building support through the ongoing SOILCARE Phase 1 Project across the Caribbean Community.

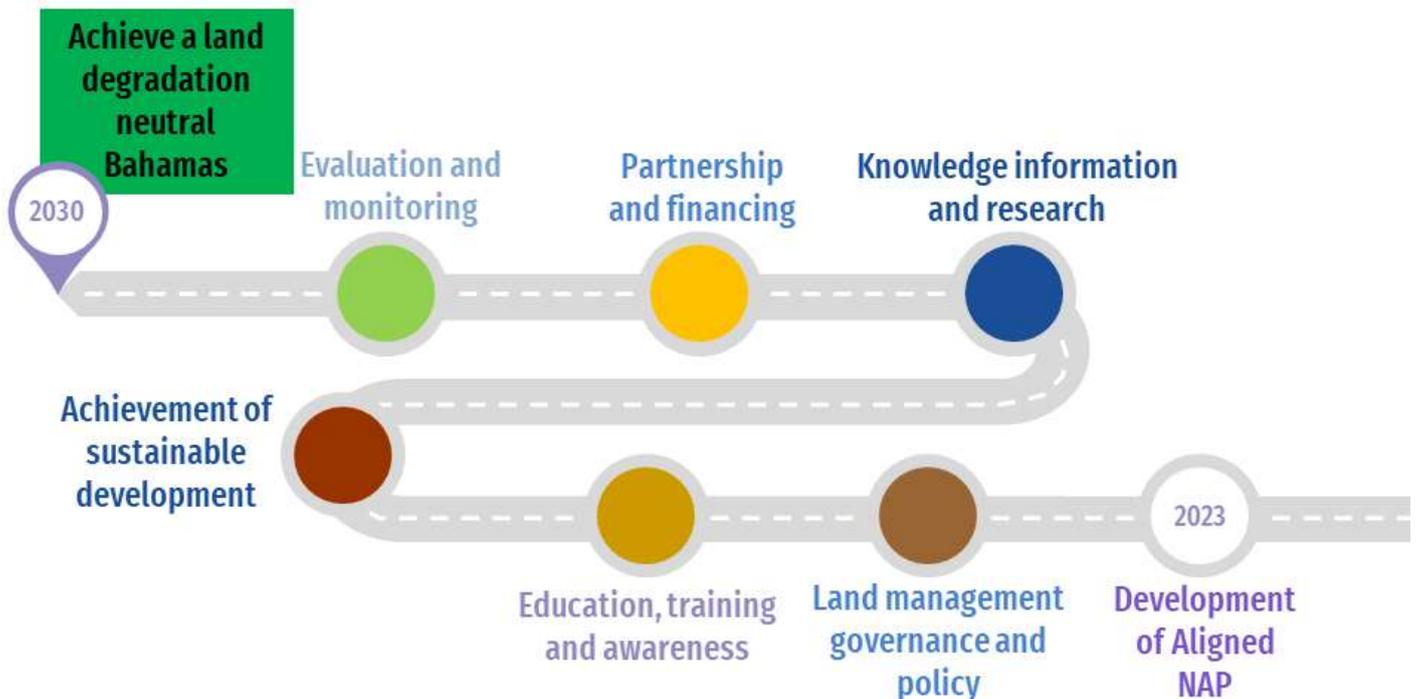


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List of Abbreviations

CARICOM	Caribbean Community
CBOs	Community Based Organisations
COP	Conference of Parties to the UNCCD
CRIC	Committee for the Review of the Implementation of the Convention
CSO	Civil Society Organization
DEWS	Drought Early Warning System
DLDD	Desertification, Land Degradation and Drought
EWS	Early Warning Systems
FAO	Food and Agriculture Organization of the United Nations
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GM	Global Mechanism of the UNCCD
ILM	Integrated Land Management
LDAD	Land Degradation Assessment in Drylands
LDN	Land Degradation Neutrality
LDN TSP	Land Degradation Neutrality Target Setting Programme
LULC	Land Use and Land Cover Change
M&E	Monitoring and Evaluation
NAP	National Action Programme
NBSAP	National Biodiversity Strategy and Action Plan
NDC	Nationally Determined Contribution
NDP	National Drought Plan
NFP	UNCCD National Focal Point
NGO	Non-Governmental Organization
ODA	Official Development Assistance
PES	Payment for Ecosystem Services
PISLM	Partnership Initiative for Sustainable Land Management
PRAIS	Performance Review and Assessment of Implementation System
REDD	Reducing Emission from Deforestation and Forest Degradation

SIDS	Small Island Developing States
SDG	Sustainable Development Goal
Secretariat	UNCCD Secretariat
SLM	Sustainable Land Management
SSM	Sustainable Soil Management
UN	United Nations
UNCBD	United Nations Convention on Biological Diversity
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environment Programme
WDCD	World Day to Combat Desertification
WOCAT	World Overview of Conservation Approaches and Technologies

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Introduction

The Bahamas, like other Small Island Developing States (SIDS), is faced with a small geographic size, isolated and fragile ecosystems and limited range of natural resources (e.g., freshwater reserves, forests, fertile soils, etc.). Additionally, The Bahamas is an archipelago of low-lying islands and particularly vulnerable to severe storm events, principally hurricanes, as well as climate change. Such factors, coupled with high population density, increase the pressure on the limited resources of The Bahamas and contribute to their overuse, premature depletion and degradation. At the same time, the future of its economy as well as the capacity of the nation to combat poverty and reverse inequality, depends heavily on the natural capital and the government ability to manage effectively. Land degradation is a consequence of a combination of human and climatic drivers. Land degradation is a relevant issue for The Bahamas, costing millions of dollars annually and affecting a significant part of the rural population. Further, land degradation is clearly becoming an increasing problem in The Bahamas as a result of years of unsustainable land use and management (Martin del Campo et al., 2023).

Increased demand for land has stemmed from economic development, particularly in the tourism sector. Tourism and urban development projects have resulted in the clearing of large areas of land. This contributes to the loss of trees and habitats, which exacerbates land degradation. The growth of the tourism sector coupled with increased population, available lands, including wetlands, have been cleared to meet these growing demands. Additionally, the requirement to provide potable water supply and sewerage management, transportation and communication systems to service these new developments exacerbates the pressure on the relatively scarce land resources. Sectors such as agriculture and construction which contributes to the gross domestic product (GDP) of The Bahamas have also increased the pressures on land, resulting in abuse and degradation that is often compounded by natural disasters, such as hurricanes (The Bahamas Environment Science and Technology Commission, 2006). These progressive patterns of land degradation could negatively affect ecosystem functions and services. Threats of this nature has to

be monitored closely and addressed in a timely manner as we continue to strive for the achievement of land degradation neutrality (LDN) by 2030.

The Bahamas has an obligation to increase awareness on land degradation and to align their National Action Programme (NAP) to combat land degradation in keeping with the direction of the UNCCD 2018–2030 Strategic Framework. NAPs serve as the key instruments to implement the UNCCD. They are often supported by action programmes at sub-regional (SRAP) and regional (RAP) levels. The Bahamas aligned NAP was developed through a participatory approach involving various stakeholders, including relevant governmental offices, scientific institutions and local communities. An approach of this nature will facilitate the spelling out of practical steps and measures to be taken to combat degradation and drought in specific ecosystems. The Bahamas's NAP was aligned to the UNCCD 2018–2030 Strategic Framework, as well as other relevant implementation activities relating to the Convention. The adoption and implementation of this aligned NAP would exemplify the central role of healthy land to the wellbeing of The Bahamas's ecosystem, food production, economic growth, and biodiversity (UNCCD, 2023).

The Bahamas can benefit from cooperation with other affected countries, and with developed countries, in designing and implementing its own programmes to combat and mitigate the effects of land degradation. This document is intended to provide guidance to the people of The Bahamas to combat land degradation based on identified drivers. This is also a framework for implementing the Convention through practical and flexible means, with interventions at the local, national, sub-regional, regional, and international levels coupled with various tools to self-monitor and facilitate necessary change. The guiding principles of the aligned NAP will be beneficial to the people of The Bahamas in the quest to improve Sustainable Soil Management (SSM) and SLM efforts and ultimately achieve a land degradation neutral Bahamas. The report lays out the analyses and recommendations within six chapters. The chapter on general physical information provides an examination of physical landscape and historical evolution. This is followed by the chapter on land assessment information on the state of UNCCD implementation in The Bahamas, which provides an examination of the environmental, social, and economic pillars of land degradation in The Bahamas. The chapter on the innovative financial strategy for the aligned NAP, provides financial information gathered from The Bahamas as well as other Caribbean countries that are implementing NAPs to provide insights into good practices that The Bahamas could adopt to increase financial investments for UNCCD implementation. The chapter on the approach for

developing the aligned NAP outlines the methodology used. Implementation framework and schedule chapter provides details on the plan of action to implement the aligned NAP.

1.1. Global Context – Land Degradation and Drought

The UNCCD is the global custodian of Target 15.3 (SDG 15 – *Life on Land*). In this role it has a key responsibility in helping countries to achieve the said target which calls on governments to *inter alia*, “*Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, and halt and reverse land degradation and halt biodiversity loss*”. Additionally, Target 15.3 aims “*by 2030, restore degraded land and soil, including land affected by drought and floods*” (United Nations General Assembly, 1994). In October 2015 at the twelfth session of the Conference of Parties (COP.12) of the UNCCD, an agreement was made to integrate the SDGs and related targets into the implementation of the Convention and the championing of target 15.3 by UNCCD and partner countries has become a strong vehicle to drive UNCCD implementation.

The UNCCD defines land degradation neutrality as “*a state whereby the amount and quality of land resources necessary to support ecosystem functions and services and enhance food security remain stable or increase within specified temporal and spatial scales and ecosystems*”. This definition of Land Degradation Neutrality (LDN) was also endorsed at the twelfth session of the Conference of Parties (COP 12) and country parties were invited to (a) formulate national voluntary targets to achieve LDN and to integrate LDN targets into UNCCD National Action; (b) use the monitoring and evaluation framework proposed by UNCCD to monitor, evaluate and communicate progress towards achieving the LDN target; and (c) promote the use of LDN targets and projects and other SLM initiatives as an effective vehicle for mobilizing additional sustainable financing and investments to address issues related to desertification, land degradation and drought (DLDD). Attainment of LDN targets would ensure harmonization with other SDGs related to climate change mitigation and adaptation, biodiversity conservation, ecosystem restoration, food and water security, disaster risk reduction, and poverty reduction (GEF, 2022).

Globally, 169 of the 196 country parties (86%) are affected by desertification, land degradation and drought. Of these, 129 countries (65%) are committed to achieving LDN under the UNCCD Land Degradation Neutrality Target Setting Programme (LDN TSP). The Bahamas is now in the process of developing its LDN TSP to receive endorsement at the highest political

level. Investment of land has been challenged by balancing utilization and preservation, and as such The Bahamas is currently making strides to endorse a National LDN TSP (2023–2030) to establish the LDN baseline, targets and associated measures, which is in keeping with SDG goal 15. The LDN has an optimal mix of measures designed to avoid, reduce and/or reverse land degradation in order to achieve a state of no net loss of healthy and productive land (The Bahamas Environment Science and Technology Commission, 2006). LDN TSP endorsement by UNCCD member countries is an example of a global movement for the implementation of a balance of ‘loss’ of land, land productivity and soil with ‘gains’ or investments in restoring land and soil.

Furthermore, the UNCCD provides the global framework for addressing land degradation and SLM issues in The Bahamas and other Small Island Developing States (SIDS). Given the scope of this instrument, which, if used effectively, could significantly contribute to the attainment of the objectives of poverty eradication and food security in line with the Convention’s mandate. Sustainable land and soil management and land use are the basics to combat land degradation and to mitigate the consequences of earlier bad practices with regard to land allocation and land use. In order to contribute to the objective of the Convention and to implement the obligations under this convention a first step to be taken is to promote awareness with regard to land degradation and the effects thereof (The Bahamas Environment Science and Technology Commission, 2006).

Globally, the frequency, intensity, extent, and duration of droughts are increasing as a result of climate change. The UNCCD supports decision-makers, water, and land managers by advocating for ‘drought smart’, proactive, coordinated, and holistic drought risk management (UNCCD, 2022). Droughts are costly, damaging, and their impacts are pervasive. Globally, droughts are viewed as one of the most feared natural phenomenon, given their potential to devastate farmland, destroy livelihoods, and cause untold suffering over weeks, months or years. Droughts occur when an area experiences a shortage of water supply due to a lack of rainfall or lack of surface or ground water. Drought puts livelihoods and ecosystems at risk and, in extreme cases, can trigger famine, displacement, and conflict. They affect both developed and developing nations, across all inhabited continents. In the decade to 2017, drought affected at least 1.5 billion people and cost US\$125 billion globally. Forecasts estimate that by 2050 droughts may affect over three-quarters of the world’s population. The goal of UNCCD is to raise awareness on how early action is vital to mitigate and address the impacts of drought. The UNCCD work with governments

and international actors to ensure that communities learn how to minimize the impact of drought on people, livelihoods, ecosystems, and economies (UNCCD, 2022).

Land degradation in the Caribbean SIDS also has the element of impacts from hurricanes/storms particularly with soil displacement and salinization as in the case of The Bahamas with storm surge inundation; implications for the built and natural environment, economy of The Bahamas and agricultural landscape productivity. These events have resulted in the loss of lives, severe flooding, and disastrous damage to transport, housing, power infrastructure, and complex post-disaster rebuilding efforts, which in some instances has not yet recovered (Martin del Campo et al., 2023).

1.2. The Bahamas's Obligations under the United Nations Convention to Combat Desertification

The Bahamas has ratified the UNCCD (8th February 2001) and has an obligation under this Convention to coordinate efforts and develop a coherent long-term strategy at all levels. As part of The Bahamas obligation, the country shall:

- adopt an integrated approach addressing the physical, biological and socio-economic aspects of the processes of land degradation and drought;
- integrate strategies for poverty eradication into efforts to combat land degradation and mitigate the effects of drought;
- strengthen sub regional, regional and international cooperation;
- cooperate within relevant intergovernmental organizations;
- determine institutional mechanisms, if appropriate, keeping in mind the need to avoid duplication;
- promote the use of existing bilateral and multilateral financial mechanisms and arrangements that mobilize financial resources;
- give due priority to combating land degradation and mitigating the effects of drought, and allocate adequate resources in accordance with circumstances and capabilities;
- establish strategies and priorities, within the framework of sustainable development plans and/or policies, to combat land degradation and mitigate the effects of drought;
- address the underlying causes of land degradation and pay special attention to the socioeconomic factors contributing to land degradation processes;

- promote awareness and facilitate the participation of local populations, particularly women and youth, with the support of nongovernmental organizations, in efforts to combat land degradation and mitigate the effects of drought; and
- provide an enabling environment by strengthening, as appropriate, relevant existing legislation and, where they do not exist, enacting new laws and establishing long-term policies and action programmes.

1.3. The Overarching Goal of the Aligned NAP for The Bahamas

The Bahamas agreed to the implementation of 17 SDGs by 2030. The implementation of this instrument - being one of the Rio Conventions is cardinal if the objectives of the other two, namely the UNFCCC, and the UNCBD, and indeed the overall goals of *Agenda 2030* are to be achieved. Even though The Bahamas completed the development of a NAP in 2006, the NAP requires alignment to the UNCCD 2018 – 2030 Strategic Framework in keeping with the current trajectory. This alignment creates a renewed overarching strategic framework at the national level to curb issues related to land degradation. In this regard, The Bahamas undertook a process to develop an aligned NAP supported by the Partnership Initiative for Sustainable Land Management (PISLM). The goal is to strengthen the implementation of SLM, SSM and LDN across The Bahamas.

1.4. UNCCD 2018-2030 Strategic Framework

The alignment of The Bahamas’s NAP provides consideration for urgent integration and strengthening of existing National Policies, Strategies, Action Plans and the planning framework for conservation, promotion of SLM, SSM, and LDN. The new strategic framework of the Convention for 2018 – 2030 that emanated from COP 13 enshrines the integration of SDG 15 and target 15.3 into the implementation of the Convention with flexibility to adopt/react to future developments. The UNCCD Strategy aims to guide the actions of all UNCCD stakeholders and partners through the following strategic objectives (UNCCD, 2018):

- *Strategic Objective 1:* To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality.
- *Strategic objective 2:* To improve the living conditions of affected populations.

- *Strategic objective 3:* To mitigate, adapt to, and manage the effects of drought in order to enhance resilience of vulnerable populations and ecosystems.
- *Strategic objective 4:* To generate global benefits through effective implementation of the United Nations Convention to Combat Desertification.
- *Strategic objective 5:* To mobilize substantial and additional financial and non-financial resources to support the implementation of the Convention by building effective partnerships at global and national level.

The new UNCCD 2018 – 2030 Strategic Framework urge all UNCCD stakeholders and partners to take into account the need for gender-responsive policies and measures which ensures full and effective participation of both women and men in planning, decision-making and implementation at all levels. In particular, COP 13 adopted decision 30 related to “*Gender equality and women’s empowerment for the enhanced and effective implementation of the Convention*”. The decision adopted the Gender Action Plan, which aims at supporting gender-responsive implementation of the UNCCD 2018–2030 Strategic Framework to strengthen the implementation of the advocacy policy framework on gender. These COP 13 decisions reinforce the Decision 3/COP 12, which stresses the importance of empowering women in efforts to achieve SDG target 15.3 in order to ensure that this target addresses the wider elements of the 2030 Agenda, including women empowerment (UNCCD, 2018).

General Physical Information

2.1. Location and Land Area

The Commonwealth of The Bahamas is an archipelago of 700 islands and cays surrounded by coral reefs and extensive sand flats extending from ca. 80 km east of Florida, USA to 80 km northeast of Cuba with a population of 409,984 (Fig. 1) (The Government of The Commonwealth Bahamas, 2022). The archipelago covers 321,159 km², with a total land area of 15,000 km². The islands in the northern The Bahamas are generally covered in pine forests, while those of the south are of mixed coppice vegetation and scrub lands. The islands are flat and low-lying. These islands are dominated by a self-sustaining forest of Caribbean pine (*Pinus caribaea*), while orchids, particularly bromeliads, are found in isolated areas. The central and southern islands include Eleuthera, Long Island, Cat Island, Crooked Island, Acklins Island, San Salvador, Mayaguana, Exuma, Ragged Island, Inagua, and Rum Cay. These islands have similar environments and have been generally described as the coppice islands. The general vegetation both past and present has been primarily hardwoods that are now very scarce (The Bahamas Environment Science and Technology Commission, 2006).



Fig. 1. Map of The Bahamas (The Government of The Commonwealth Bahamas, 2022).

2.2. Geology and Soils

In the absence of rivers across this archipelago, several large brackish water lakes that are deeply penetrated by tidal creeks, and contain numerous blue holes dominates. A thin layer of soil varying in fertility covers the limestone base corals and pine forests along with mixed coppice vegetation and scrub lands dominates the flat and low-lying islands.

The land of The Bahamas is limestone (CaCO_3), which is a very common rock globally, and not noted for agriculture where it occurs. In the case of The Bahamas the limestone is young and very pure, both characteristics of considerable significance to agriculture. The purity means that only calcium carbonate is available to plants from the geology (much in the way of nutrients comes from the air, and via decaying vegetation as humus). Most other rocks are complex sets of minerals which break down to later form soils rich in nutrients, a process known as weathering. Limestone does not do this as its mineral content dissolves to leave nothing behind. One aspect of limestone that is significant is the relative acidity/alkalinity of the weathered surface it develops.

As acid conditions are generally bad for crops, Bahamians avoids such land development, but high alkalinity also has its problems. Anything over pH 7 is alkaline, and over about 8.3 is a disadvantage as it generally limits the ability of a plant to absorb water (Sealey, 2010).

All Bahamian protocols are alkaline, usually in the range 7.5 to 8.5, but the red soils are less so, or neutral depending on the amount of limestone they include. Red soils are an anomaly in so far as they are not a product of the native geology, but wind-blown Sahara dust that has collected in vales between ridges, and to a lesser extent in potholes and extensive rockland. The protocols soils of The Bahamas has experienced little time to develop. Four general protocols have been recognized for their role in farming. The two most used from the earliest days are the organic soils/black land of the coppice; and the salt and-pepper soils/white land of the sandy coast. The black soils are the basis of pothole farming and at their simplest consist of pockets of humus trapped in solution holes, which of course also attract water. The white soils are basically sand dunes. Unlike the rockland this material has depth, but sand is a sediment, not a soil. As humus is added from tolerant vegetation the process of soil formation begins. The sand will be darker in colour than fresh beach sand. On close inspection it will be seen to be a mixture of white/light coloured grains of sand and black particles of humus, earning it the name, salt-and pepper soil. Clearly this is of limited nutritional value, but because of their ready accessibility and continuous nature these soils are popular in some areas such as San Salvador. The next well-known protocol is the red soils, which are unusual as they are actually a clay material blown in from North Africa and collected over the years in hollows in our limestone landscape. They are essentially a compound of minerals commonly referred to as laterite or brick earth in the tropics. This soil type has similarities to the bauxite of Jamaica which is the ore of aluminium, and came from the same source. Unfortunately, while this might seem like a bonus, red soils are notoriously sterile, essentially being the inert waste from chemical weathering in the tropics. Their use in The Bahamas reflects more on the poor quality of natural soil development than any intrinsic value. As they, like sand, and unlike the widespread rockland soils, have depth.

2.3. Climate and Temperature

The climate in The Bahamas is sub-tropical, with fairly high mean temperatures and moderate rainfall. The Bahamas experience two distinct seasons: warm but dry winter season from November to April and a hot wet summer season from May to October. Majority of the rainfall

occurs between May to June and September to October. The hurricane season, which lasts from June to November, may bring gale force winds (rarely exceeds 24 km/hr). Precipitation is more common in the northern islands, showing a gradient from the dry south to the humid north. Mean annual rainfall varies from approximately 1,470mm to 865mm, with the northern islands receiving more precipitation than the southern islands. Mean daily temperatures fluctuate between 17°C and 32°C, with annual mean temperature increasing. Historical records show that in the past century, annual mean temperatures have increased by 0.5°C since 1960 with an average rate of 0.11°C per decade. Further analysed data show that the mean daily maximum temperature for July has increased an average of 2°C in 100 years, with more recent data showing a rate of 2.6°C per 100 years. There is also seasonal variation between the islands, with the northern islands having a more rapid rate of warming than south-western islands (The Government of The Commonwealth Bahamas, 2022).

Since 1990 there has been an increase in the frequency of tropical storms which may be caused by changes on El Niño pattern and increased heat waves. Observations from The Bahamas Department of Meteorology revealed that in less than a decade, three major tropical cyclones (category 3 or greater) impacted The Bahamas (Hurricane Matthew in October 2016, Hurricane Irma in September 2017 and Hurricane Dorian in September 2019). These hurricanes wreaked havoc down on The Bahamas and their communities, erasing any evidence of life in some neighbourhoods and leaving behind a trail of heartbreak, sorrow, and death (The Government of The Commonwealth Bahamas, 2022).

Land Assessment Information on the State of UNCCD Implementation in The Bahamas

Emanating from COP 13, several decisions were taken in relation to the challenges of DLDD. DLDD contribute to and exacerbate economic, environmental and social problems such as poverty, poor health, lack of food security, loss of biodiversity, water scarcity and reduced resilience to climate change (ICCD, 2017). Problems of this nature continues to pose serious challenges to The Bahamas's sustainable development. Long-term integrated strategies that focuses concurrently on improving land productivity and rehabilitating, conserving and managing land and water resources sustainably will aid in addressing DLDD. SLM is a wise investment for economic growth that does not compromise resilient livelihoods in The Bahamas. Balancing the biological and economical potential of land is key to safeguarding and managing the quality of the land. Through The

Bahamas's ratification to UNCCD, support could be solicited in the form of capacity-building, provision of scientific support, mobilization of resources, sharing of successful experiences, awareness raising, technology transfer and assistance for the implementation of policies to curb issues related to DLDD.

3.1. Biophysical Baseline Information

The Bahamas is a biodiversity hotspot with at least 1,111 species of vascular plants and 406 known species of amphibians, birds, mammals, and reptiles. These islands are home to a number of native species of global significance, including the Nassau grouper (*Epinephelus striatus*), the Bahama parrot (*Amazona leucocephala bahamensis*), Bahama oriole (*Icterus northropi*), Bahama nuthatch (*Sitta insularis*), Bahama swallow (*Tachycineta cyaneoviridis*), and the Bahamian pygmy boa (*Tropidophis canus*), that will benefit from SLM practices. To protect the ecosystems that these species exist in, and to ensure the long-term health of its landscapes and coasts, The Bahamas has partnered with the Global Environment Facility (GEF) and the United Nations Environment Programme (UNEP) to invest in more climate-resilient and regenerative food production practices. These efforts are commendable and exemplifies The Bahamas commitment to sustainable development (GEF, 2021).

The northern and southern parts of The Bahamas covered by some forest. From the early 1900s until the mid-1970s, timber had been exploited from the pine forests, and then all rights to fell timber were surrendered to the Crown. Greater than 80% of the forestry resources of The Bahamas are found on Crown Lands. While the market for timber products is estimated at US\$15 million per year, there are presently no locally based forest industries to exploit this resource. The Department of Lands and Surveys has the responsibility to manage and conserve land resources in The Bahamas, but presently there is no forestry management on Crown lands. The Department of Forestry protects the forestry resources of The Bahamas which are composed of pine, coppice and mangrove forests, and account for 15% of the total area of The Bahamas. Pine forests are considered the most productive of the three forest types. They occupy much of the landmasses of Andros, Abaco and Grand Bahama, and smaller areas of New Providence, and are largely a monoculture of self-regenerating Caribbean pine (*Pinus caribaea*), occasionally interspersed with coppices of hardwoods such as West Indian mahogany (*Swietenia mahagoni*). Timber license holders, who exploited the pine forests on these northern islands until the mid-1970s, left behind

small areas of old growth and large areas of immature trees. Today, there are approximately 618,500 ha of pine forests. These areas are home to many avian species, some endemic and others migratory, as well as the rare atalia hairstreak butterfly (*Eumaeus atala*) and the endangered Bahama parrot (*Amazona leucocephala bahamensis*). In addition, the ground cover these forests provide is essential for sustaining the underground freshwater reserves, the only natural source of freshwater in The Bahamas (The Bahamas Environment Science and Technology Commission, 2006).

The coppice forest is confined mainly to the central and southeastern islands, and is characterized by many valuable hardwood trees such as West Indian mahogany (*Swietenia mahagoni*), cedar (*Cedrela odorata*), mastic (*Mastichodendron foetidissimum*) and horseflesh (*Lysiloma sabicu*). Under the shade of these tall trees grow a variety of shrubs that include many species of stoppers (*Eugenia* spp.), wild coffee (*Psychotria* spp.), satin leaf or saffron (*Chrysophyllum oliviforme*), Bahamas strongbark (*Bourreria ovata*), pigeon plum (*Cocoloba diversifolia*) and poisonwood (*Metopium toxiferum*). Coppice forests are the habitats for a variety of fauna, including the snakes, lizards and birds. The whiteland coppice forest is the habitat of a variety of land crabs, including the black crab (*Gecarcinus ruricola*), which is consumed by Bahamians. Activities such as shifting cultivation, woodcarving and charcoal making have led to a reduction of the coppice area and have threatened many endemic plant species. Some of these trees are protected by law under the Conservation and Preservation of the Physical Landscape of The Bahamas Act (1997). Australian pine (*Casuarinas* spp.), an invasive plant species, has taken over large strands of coastal regions in The Bahamas that were previously cleared of endemic species (The Bahamas Environment Science and Technology Commission, 2006).

The marine and coastal environments serves as the main natural resources of The Bahamas. There are no surface water bodies, other than salinas and tidal creeks. The only source of freshwater is groundwater. The mangrove forest is found along the coastal areas of The Bahamas and in the inland wetlands and salinas. The main species include red (*Rhizophora mangle*), black (*Avicennia germinans*) and white (*Laguncularia racemosa*) mangroves and buttonwood (*Conocarpus erectus*). One of the largest areas of mangrove swamp can be found along the northern coast of Grand Bahama Island. Mangroves are important to the fisheries industry because they serve as nurseries for a variety of marine species. In addition, they are beneficial in flood management and protecting freshwater resources. Mangrove wetlands attenuate waves and flood

peaks; they also control pollution by trapping sediment and removing excess nutrients found in run-off. As land builders and shoreline stabilizers, these forests offer coastal protection, which is the first line of defence in protecting the inland and the limited freshwater reserves of The Bahamas (The Bahamas Environment Science and Technology Commission, 2006).

3.2. Socio-economic Baseline Information

The majority of the Bahamian population lives in coastal areas and particular attention should be paid to the islands of New Providence, Grand Bahama and Abaco, where 90% of the country's population lives. The remaining 10% of the population is spread around other settled islands and cays, collectively known as 'the Family Islands'. A total of 29 Bahamian islands are inhabited (The Government of The Commonwealth Bahamas, 2022).

Mitigating and combating DLDD through the empowerment and participation of local people, especially women and youth in decision making will aid in improving the living conditions of affected populations. Rural to urban drift is readily apparent in The Bahamas. Over the years, economic growth has occurred primarily among the northern Bahama Islands. This is due to the fact that these islands are situated closer to major markets and they are less arid than the southern islands. Basic services and infrastructure are more readily available, and employment opportunities are more abundant in the Northwest Bahamas. Consequently, people are drawn to the northern islands, where approximately 96% of the total population is found in the Northwest Bahamas. The Bahamas has the third highest per-capita gross domestic product (GDP) in the western hemisphere. This ranking is misleading due to the uneven distribution of income and the high costs involved in the administration of an archipelagic nation. Furthermore, the economy is small. It is disproportionately service-based and subsequently, expenditure on imported goods is extremely high (The Bahamas Environment Science and Technology Commission, 2006).

The largest sectors of the Bahamian economy are tourism and banking and finance. Together, they account for approximately 75% of the GDP. Agriculture, fisheries and manufacturing are dwarfed in comparison, accounting for no more than 10% of the GDP. The contributions of the construction sector are not known, however activities within this sector have increased, due in part to previous hurricane encounters and developments in the tourism sector. These sectors have traditionally served as the pillar of The Bahamas's socioeconomic development (The Bahamas Environment Science and Technology Commission, 2006). With the rapid upsurge

in economic activity, such as tourism, agriculture, and fisheries post COVID-19, land degradation has been accelerating in The Bahamas. The government of The Bahamas recognizes that the degradation trends, due to recent rates of exploitation, unsustainable land management practices and weak regulatory controls, are increasingly threatening natural resources and if not addressed, will seriously affect ecosystem services, functions, and hence future economic growth. Further, DLDD, whether driven by human actions, biophysical factors or a combination thereof, result in loss of or damage to natural capital and social welfare. Land degradation reduces the value of soil, water, plant and animal resources to society, including the contributions of ecosystem function and processes to primary production and related industries.

Deforestation, biodiversity loss, land degradation, and water stress and contamination have debilitating effects on the economic and social well-being of. They harm local livelihood practices, exacerbate food insecurity and poverty, and can give rise to conflicts that reduce social cohesion and can further aggravate poverty and environmental pressures. As such, the use and depletion of these resources for economic activities must ensure the sustainability of these resources and their broader contribution to the country's well-being (The Bahamas Environment Science and Technology Commission, 2006). To effectively tackle DLDD, its drivers need to be addressed and instruments designed to incentivize SLM practices. Embedded in the understanding of the economics of DLDD is a set of methodologies for assessing the true societal impacts of land degradation, which includes issues such as migration pressures and conflicts over scarce natural resources. These form the foundation for determining how best to allocate financial, human, and technical resources to effectively address DLDD (UNCCD, 2016). DLDD directly affects more than 1.5 billion people around the world and has a disproportionate impact on women and children. Women bear the burden of land degradation but can also be part of the solutions. In this respect, gender sensitive investments in addressing the conditions of degraded land will not only contribute to achieving food security, poverty alleviation and sustainability but also contribute to improving the living condition of women in ecosystems affected by DLDD (UNCCD, 2016).

The focus and backbone of the socioeconomic dynamism as it relates to development and re-development stimulated by the tourism sector and disaster recovery, agriculture and fisheries are other sectors with links to land degradation and SLM in The Bahamas (Table 1). Achieving LDN will not only improve livelihood and contribute to food security in The Bahamas but also improve the country's GDP and economic well-being relative to the people living in affected areas.

Table 1. Pillars of socioeconomic activity in The Bahamas (The Bahamas Environment Science and Technology Commission, 2006).

Key economic activity	Contribution to GDP	Comments
Tourism	60%	The economic engine of The Bahamas is the tourism sector. The eco-tourism market presents an opportunity for small economies, such as The Bahamas, as it allows the participation of many Bahamians in the development of tourism without impacting negatively on the cultural, environmental and historical resources of the country.
Agriculture	Less than 2%	More than US\$300 million is spent annually on food imports, representing more than 90% of the food consumed. Sustainable and climate smart agricultural practices could play a key role in reducing food import cost.
Fisheries	Less than 2%	Sustainability and growth of this sector is essential for Bahamians, both present and future generations. It is also an element of the tourism-marketing package. In turn, the health of this sector is linked to the viability of the marine and coastal environments, which serve as habitats for the fisheries species.

3.3. Land Use Baseline Information

The limited land area of The Bahamas mainly serves two purposes: agricultural production and urban development. Activities in both these areas occur predominantly in the northern parts of The Bahamas. Agricultural production is generally carried out throughout the Family Islands, with Andros and Grand Bahama being the major agricultural producers. Urban development has thrived in and around the two largest cities in the country: Nassau, on New Providence and Freeport, on

Grand Bahama. The management and monitoring of land use for agriculture and development is the responsibility of government. This responsibility is divided among separate government agencies depending on the purpose for which the land is being used. The land use and classification system is intended to encourage agricultural development in areas where it can best be supported and to manage urban development in those areas to sustain such growth (The Bahamas Environment Science and Technology Commission, 2006).

Population pressures along the coastal areas results in competing land uses. Recent strains on Bahamian land have also been caused by factors such as over-grazing and other agricultural practices that have depleted soil nutrients. Deforestation, quarrying, mining, and freshwater pollution have also impacted land health in the archipelago of 700 islands and cays. Large swathes of land in coastal areas have been cleared for tourism and urban development (GEF, 2021).

Available evidence suggests that land use activities such as tourism, urban development, agriculture, and construction increased the pressures on land, resulting in abuse and degradation that is often compounded by natural disasters, such as hurricanes. Such land uses primarily accounts for land degradation in The Bahamas (The Bahamas Environment Science and Technology Commission, 2006). In the past, there has been no comprehensive national scientific study of land degradation, or scientific assessment, monitoring and reporting of land degradation and land reclamation solutions with trained specialists. However, though the project entitled *“Integrated Landscape Management for Addressing Land Degradation, Food Security and Climate Resilience Challenges in The Bahamas”*, the Land Degradation Neutrality (LDN) target setting programme in The Bahamas has commenced to outline land degradation baseline, using available global data sets for the three agreed indicators (land cover, land productivity, and soil organic carbon) and national expertise (The Bahamas Environment Science and Technology Commission, 2006).

Land degradation is characterized by the reduction and loss of the biological and economic productive capacity of the land. The government of The Bahamas has recognized that SLM and the reclamation and rehabilitation of degraded lands is very critical in The Bahamas. Actually, the country had a deforestation rate of 5.9% in 2022 according to the Global Forest Watch data, relative to other forested countries (Global Forest Watch, 2022). Over the years, using 2010 as a reference level, national rates of deforestation and land development for various purposes and

hence land degradation, have increased. Targets with relation to DLDD that were agreed upon at the international level include:

- ✓ New York Declaration on Forests, which aims to at least halve the rate of loss of natural forests globally by 2020 and strive to end natural forest loss by 2030
- ✓ SDGs, notably SDG 15 to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. Also, SDG 2 (2.4, 2.5), SDG 6 (6.5, 6.6), SDG 14 (14.2, 14.5, 14.c), SDG 15 (15.1, 15.2, 15.3, 15.5, 15.6, 15.9).

To address current and potential land degradation, targets and measures are focused on avoidance, rehabilitation, restoration, and sustainable land management and use. Emphasis will be placed on:

- Implementation within national environmental, forest, and spatial planning policies, plans, and programmes
- Enabling sustainable agriculture
- Expansion of protected areas to preserve biodiversity
- Improved management of irrigation, drainage, flooding and drought
- Mangrove restoration for coastal protection
- Rehabilitation of degraded areas.

Economic systems are disrupted by drought, which occurs in The Bahamas and has the potential to threaten people's lives due to the slow onset nature. Early Warning Systems (EWS) seeks to protect lives and livelihoods from known hazards such as drought, while minimizing negative impacts on economy and environment. An effective EWS constitutes one of the key elements of any disaster reduction strategy. At the same time, adaptation to climate change would be very difficult without timely and reliable information and early warning. People who depend on the climate for their livelihood also need information to be able to make informed decisions. Accurate, reliable and timely EWS enhances climate change adaptation efforts at all levels. The reduction of losses from drought can, if properly managed and publicized, have long-term benefits to the economy (GEF, 2022).

Drought is ranked very low as a hazard affecting The Bahamas as compared to other countries in the region and most agencies identify flooding as the major hazard. This is due largely to the fact that drought incidences are slow onset and has been intermittent with events of drought warning and drought watch for 2018 (CariCOF, 2018). Low ranking is attributed to low visibility

of drought risks and the fact that surface water sources are plentiful. The impacts of drought underpin the importance of implementing the Drought Early Warning System (DEWS). The impact of drought on livelihoods (e.g., crop production, aquaculture, micro and small scale enterprises, etc.), is recognized especially for farmers. This is more so for the small to medium scale farmers who are more vulnerable to drought because of their dependence on rain-fed agriculture and creeks which would dry up during the dry season. As a consequence, they face much greater relative loss of assets which in turn affect livelihoods.

There is not yet any data/information on the relative income, income inequality and poverty severity of persons residing in affected areas. Therefore, baseline data and statistics on this would be desirable, in order to be able to monitor trends and changes in proportions of people living below the formal poverty line in the affected areas. This sort of information would better inform The Bahamas's reporting on Strategic Objective 2 (to improve the living conditions of affected populations) at the national level.

3.4. Policy and Management Measures

The alignment of The Bahamas's NAP to combat land degradation coupled with the Land Degradation Neutrality Target Setting Programme (LDN TSP), Integrated Land Management (ILM) Strategy, and other national policy initiatives promotes an enabling environment for sustainable and climate-resilient land development, management and reclamation. The development of local initiatives from a geospatial perspective will enhance the monitoring of DLDD. This will facilitate capacity building in the use of the integrated geospatial information systems, and in the application of adapted methods and tools for improved land administration, governance of tenure, participatory land planning, assessment and monitoring with stakeholders. These initiatives will strengthen the application and enforcement of regulations, land use planning, incentive measures, knowledge sharing as well as assessment and monitoring in line with the SDGs.

Improving land quality and living standards of the rural population requires policy responses that improve the condition of terrestrial ecosystems by avoiding, reducing and reversing degraded land. Investments, particularly in hotspot locations (tourism development) characterized by both high restoration potential and high socioeconomic benefits in poverty areas, will improve

the conditions of the most vulnerable people and increase the resilience of ecosystems. Additionally, policies and plans are key instruments that could be utilized to curb DLDD:

- Develop, implement, regularly monitor, align, and revise, as appropriate, national, sub regional and regional action programmes and/or plans as effective tools for UNCCD implementation;
- Establish policies and enabling environments for promoting and implementing solutions to combat desertification/land degradation and mitigate the effects of drought, including prevention, relief and recovery;
- Leverage synergies and integrate DLDD, while optimizing efficacy and eliminating duplication of efforts, into (i) national plans related to the other multilateral environmental agreements, in particular the other Rio conventions; and (ii) other international commitments as appropriate, within their respective mandates;
- Mainstream DLDD as appropriate into economic, environmental and social policies, with a view to increasing the impact and effectiveness of the implementation of the Convention;
- Establish national policies, measures and governance for drought preparedness and management (e.g., Drought Early Warning Systems Protocols, National Drought Plans), including drought contingency plans, according to the mandate of the Convention;
- Facilitating networking among scientific institutions related to DLDD and ongoing activities through the Science–Policy Interface to provide recommendations for implementation (ICCD, 2017).

3.5. DLDD Approach

Baseline surveys serve as a starting point for monitoring that provides a comprehensive characterization of a phenomenon in a specific year so that later changes in its attributes can be measured. These surveys identify the actual status of the extent and degree of land degradation in a given baseline year and provides a marker with which status in future years can be compared. The degree of degradation of soil and vegetation is assessed in relation to some ideal, non-degraded, benchmark status. In both cases, degradation is normally divided into distinct bands, ranging from Low degradation at one end to Very Severe at the other. The Driving Forces-Pressures-States-Impacts-Responses (DPSIR) framework provides a comprehensive description of land degradation indicators. Based on this framework analysis, land degradation is not a

widespread phenomenon in The Bahamas relative to many other countries, particularly those in Sub-Saharan Africa. The components of a DPSIR framework in the context of The Bahamas include:

- ❖ Driving Forces: absence of a National Land Policy, Integrated national legislation relating to the development and management of land resources, Aligned NAP to combat land degradation, and land use plans for disaster prone areas, regulatory weakness within the extractive industries, inadequate data management among natural resources managers, limited monitoring and enforcement of laws that governs the use of natural resources, insufficient inter-agency collaborations, conflicting laws and legislations, poverty, accessibility, inequalities and land tenure rights, under-valuation of non-market benefits of land
- ❖ Pressures: land use, resource extraction, population pressures in specific areas, squatting, conversion of arable and agricultural land for infrastructural development, waste disposal, inadequate planning and enforcement of the pertinent regulations, and direct effects of climatic variation
- ❖ States: the quantity and quality of soil and vegetation resources
- ❖ Impacts: different types of changes in soil and vegetation, changes in economic welfare, as farmers receive income from cropping or pastoralism, which falls when degradation cuts yield and changes in social welfare, as some social groups become absolutely or relatively poorer than others
- ❖ Responses: revision and alignment of national policies, plans, programmes and livelihood strategies.

3.6. Drivers and State of Land Degradation

The endowment of natural resource in The Bahamas has been threatened by a progressive pattern of land degradation that could curtail ecosystem services and functions. Deforestation is most prevalent along areas earmarked for development in keeping with the tourism trajectory. The ensuing loss of forest cover has resulted in significant habitat loss and fragmentation in ecoregions. Economic activities such as unsustainable agriculture practices and other land uses, tourism development, and exploitation of mineral resources have further exacerbated land degradation in

The Bahamas (The Bahamas Environment Science and Technology Commission, 2006). In other words, unsustainable land use practices serve as strong drivers of land degradation.

In the absence of a local definition for land degradation, the UNCCD definition (United Nations General Assembly, 1994) is being utilized – *“it is characterized by the reduction and loss of the biological and economic productive capacity of land. It is a global phenomenon, with often immediate detrimental impacts at the local level. It is often caused by human activities, and exacerbated by natural processes such as climate change.”* Generally, there is not yet a consolidated detailed spatial overview or scientific study of land degradation in The Bahamas. Therefore, it is important to acknowledge and recognize that the true extent of land degradation may be higher than previously thought, and that there is a need for improved surveillance of areas with emerging land degradation threats.

In The Bahamas, land degradation has been occurring from tourism and development pressures, mining pressures, population pressures, agricultural pressures, and natural disasters such as hurricanes. As part of the LDN TSP development, land degradation trends will be assessed to identify areas exposed to land degradation. The identification of these local areas of degradation (i.e. hotspots) is essential for determining follow-up actions through associated measures. Nevertheless, further assessments in selected areas may be required to fully understand the land degradation dynamics using additional indicators and data sources, including possible field visits. These areas may cover different ecological zones and may be exposed to different direct drivers of land degradation. This in-depth assessment will help to verify whether these areas are indeed land degradation hotspots and if they should become a priority for action to achieve LDN (The Bahamas Environment Science and Technology Commission, 2006). Some of these analysis could be derived through the Caribbean SOILCARE Project, providing that The Bahamas opt-in. Figure 2 depicts the situation of land degradation across the country. Given the projected increases in land degradation, immediate actions are necessary to effectively curb land degradation and achieve LDN by 2030 in keeping with the new strategic framework (2018–2030) proposed by the UNCCD.

Land degradation is the outcome of both natural factors, such as hurricanes among others as well as anthropogenic influences such as changes in land use and the application of inappropriate methods with regard to the use of natural resources. The phenomenon of land degradation and its magnitude in The Bahamas is not so severe yet, considering the natural conditions of The Bahamas. It is however a problem to be aware of. Due to lack of relevant and

current data concerning land degradation, the following is a straightforward indication of the extent (The Bahamas Environment Science and Technology Commission, 2006):

- Tourism and Population pressures on land degradation – Population increases experienced by The Bahamas over the years continues to put pressure on sensitive areas. This is compounded by the growing demands for urban housing and the expanding tourism industry, thereby underscoring the need for careful planning and development of land and water resources. The rapid rates of urbanization coupled with illegal squatting as a response to the growing population, results in the loss of critical habitats, which threatens biodiversity. Illegal squatters tend to occupy land reserved for freshwater extraction or conservation measures, without any interest in protecting these valuable natural resources due to insecurity of land tenure. These shifting land use exacerbates the pressure on the rich biodiversity of The Bahamas.
- Mining pressures on land degradation – Unsustainable and illegal mining activities along the coast pose negative impacts for beaches and coastal zones of The Bahamas. Sand mining in particular reduces the ability of beaches and coastal zones to buffer against storms and deteriorate the scenic beauty of these sites which are vital to the tourism sector of The Bahamas. Illegal quarrying results in the defacing of hills and ridges, which contributes to erosion and higher levels of surface run-off during storm events. In the absence of specific legislation, regulation, and the requisite institutional framework to effectively enforce and monitor these practices, illegal sand mining and quarrying pose major challenges for the implementation of robust SSM, SLM, and LDN initiatives.
- Agricultural pressures on land degradation – History has shown that agricultural practices in The Bahamas involved slash-and-burn, intensive tillage of soil and inadequate crop rotation. These practices coupled with the mixing of chemicals in the proximity of wells, open application of fertilizers to the ground, open trench wells for irrigation, and untargeted application of fertilizers have major implications for the environment. Practices of farming on a commercial scale utilize large amounts of water, which can lead to the mismanagement of various factors (frequency of rainfall versus schedule of irrigation and water extraction versus recharge rate), thereby contributing to land degradation (loss of agricultural productivity). In light of these challenges posed by commercial farming, the Department of Agriculture established a sustainable agricultural operations model through

a fee structure. This approach favors commercial agricultural lands that adopt conservation measures to preserve land and soil quality. Such commercial land owners are only required to pay between 10 and 30% of the actual fee per acre of commercial lands without conservation measures. An incentivized approach of this nature to promote conservation practices may have relevance for other CARICOM member states in keeping with their local context to achieve SLM, SSM, and LDN. Hurricanes and the associated consequences of storm surges and floods confronts The Bahamas. These consequences result in soil salination that destroys crops, delays the planting season, and negatively impact freshwater resources. Severe storms also result in the leaching of chemical fertilizers from flooded soils and salt intrusion of agricultural lands and pine forests. Salt intrusion amplifies conditions of the forest floors during the dry season, increasing the risk of forest fires. Such impacts have implications on livelihood options, land cover, and sustainability.

- Climate change and cultural pressures on land degradation – Climate change is high on the agenda for The Bahamas due to the expected impacts, such as sea level rise and increased frequency and intensity of tropical cyclones which exacerbates land degradation. Irregular rainfall patterns and minimum temperature increases over the past few years have led to critical shortfalls in freshwater supplies and hotter days. In many instances cultural activities of fishing communities impacts the coastal environment in a negative manner. Some of these problems are associated with the poor dumping of conch shells and other waste material along the coasts, which lower soil quality, damage to coral reefs, and loss of marine life due to oxygen depletion. These irregularities in weather pattern and poor disposal practices have implications for SLM, SSM, and LDN.
- Implications of unsustainable land use practices on natural resources – Unsustainable land use practices in the form of land clearing for construction and development activities, continue to threaten the scarce and fragile freshwater reserves and biological diversity of The Bahamas. Redress is needed to abate these threats and better protect the limited natural resources. The work of CSIDS-SOILCARE Phase 1, presents a unique opportunity for The Bahamas to enhance ongoing efforts in the management of freshwater resources:
 - Regulation of water supply and environmental mandates
 - Public awareness campaigns and research on the Bahamian environment

- Creation and maintenance of buffer zones (control the spread of fertilizers and pesticides) and habitats (promotion of natural pollination and protection of watersheds) to promote conservation
- Improvement in these conservation interventions can enhance agricultural productivity, increase food security and improve livelihoods.



Fig. 2. Situation of land degradation in The Bahamas (The Bahamas Environment Science and Technology Commission, 2006).

3.7. Plans and Programmes relating to Land Degradation

Legal, institutional, and public development policies are often underlying indirect drivers, which may contribute to either land degradation or the promotion of SLM/SSM practices. Without strong intervention from the public sector, in close coordination or cooperation with other stakeholders such as the private sector and civil society organizations, the achievement of LDN is unlikely to happen. Indeed, land degradation is deeply rooted at the interface between the availability of natural resources, evolving climate conditions, the interaction between different land users and the

overall socio-economic and development context (opportunities and limitations) of a country (UNCCD, 2016). The responsibility of land management is disjointed and distributed among multiple ministries and institutes with overlapping and at times divergent mandates and policies. Moreover, there has not been competent commissions in disseminating SLM across the institutions and into the integration of SLM to national development plans. Even though some regulations were enacted to address the prevailing drivers of land degradation in The Bahamas, some gaps exist that affects the implementation of SDG15, which seeks to “*Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, and halt and reverse land degradation and halt biodiversity loss*”. Some of these regulatory gaps are identified in table 3. It is important to note that some of these legislations are dated, hence pertinent and current land management matters are not adequately captured. Also, there is no single legislation relating to the development and management of land resources in The Bahamas (The Bahamas Environment Science and Technology Commission, 2006).

Following an examination of existing instruments, procedures, and institutional structures for land management in The Bahamas, key institutional and legal frameworks were identified. Land and water resources can be safeguarded through the enactment of legislation and implementation of policies specifically for their protection. Existing legislation and policies may, in some cases, be adequate to protect land and water from some forms of abuse that might lead to their degradation, but in other cases the enactment and implementation of new laws and policies may be required. This may be true for meeting both national and international environmental obligations (The Bahamas Environment Science and Technology Commission, 2006).

Legal and Institutional framework

Current parliamentary acts of The Bahamas that relate to land management divide this responsibility among various public agencies as outlined in table 2. Through the current NAP alignment process to the UNCCD 2018 – 2030 Strategic Framework, The Bahamas would be able to identify measures to strengthen the institutional and legal framework with clear roles and responsibilities among the institutions and formulate a structured framework for combating land degradation, drought, and underlying processes (The Bahamas Environment Science and Technology Commission, 2006).

The triple responsibility of management, monitoring and enforcement remains a challenge to government because of the many agencies involved. In many cases legislation granting authority to government agencies and penalties imposed are outdated. The division of responsibilities has resulted in blurred jurisdictional lines and an overlapping of both duties and efforts. Furthermore, these legal instruments are very general in nature and do not directly outline or encourage sustainable land use practices. Promotion of SLM rests with several agencies responsible for implementing the various legislation affecting land management and/or encouraging sustainable development. For example, land use planning has become a priority issue for the Office of the Prime Minister, particularly with the recent growth in tourism development. New Providence and Grand Bahama have experienced growth for decades, and zoning orders have been in effect for some parts of New Providence and Freeport, Grand Bahama. In comparison, the other islands, until recent times, saw limited growth, which implicitly meant sustainability. Plans are under development for Abaco, Eleuthera, Inagua, Long Cay and Mayaguana. Zoning orders are currently in effect for Matthew Town in Inagua and Exuma (The Bahamas Environment Science and Technology Commission, 2006).

The existing legal and institutional framework of The Bahamas coupled with its involvement with multilateral environmental agreements creates a unique opportunity for the setting of land degradation neutrality targets, aligning the NAP, and development of ILM to better guide the implementation of UNCCD. This will also create an effective platform to scale up SLM and SSM initiatives at the national level.

Table 2. Overview of primary agencies involved in land management and their mandates.

Agencies	Mandates
Ministry of Works and Utilities	Monitoring and enforcing many aspects of urban development on New Providence and public utilities. Enacted legislation, such as the Private Roads and Sub-Divisions Act (1961), the Town Planning Act (1961) and the Buildings Regulation Act (1971), facilitates the ministry’s mandate. Regulate and monitor land-use, construction techniques, implementation of building codes and designs that alleviate any negative effects of land degradation.

Agencies	Mandates
	Utilise best available technologies, including GIS, to achieve urban planning and sustainable development.
Ministry of Environment and Natural Resources	Protection of biodiversity and freshwater resources, which may both be negatively impacted by human action. The Minister is responsible for the prevention or control of pollution, the regulation of activities, and the administration, conservation and sustainable use of the environment; and for connected purposes. This encompasses environmental planning and protection, forestry management, environmental health services, among other related aspects.
Department of Environmental Planning and Protection	<p>Provide for the prevention or control of pollution, the regulation of activities and the administration, conservation and sustainable use of the environment and for connected purposes.</p> <p>Manages multilateral environmental agreements and research permit applications for scientific investigations involving or affecting natural resources within The Bahamas.</p> <p>Responsible for the development and implementation of policies, programmes and plans for the effective management and conservation of the physical environment within The Bahamas.</p>
Department of Forestry	<p>Act as the National Focal Point for the UNCCD.</p> <p>Support efforts to combat land degradation.</p>
Water and Sewerage Corporation	The Water and Sewerage Corporation Act (1976) established the Water and Sewerage Corporation. Manage the freshwater resources and formulate the standards for water resource development and wastewater treatment systems.
Department of Agriculture	Implement policies to achieve sustainable growth and development of the agricultural sector through optimal use of land and freshwater resources.
Department of Lands and Surveys	Regulate and monitor land belonging to the Crown including the seabed; this involves disposing and leasing of Crown Lands, including the seabed, while protecting Crown and government interest and encouraging balanced use and preservation.

Agencies	Mandates
Department of Physical Planning	Regulate and monitor excavation activities in an effort to preserve the physical landscape.
Grand Bahama Port Authority and Local Government	Regulate and monitor coastal and harbour/marina design requiring alteration to the physical landscape of the coastal zone and upland terrain. Local Government of each respective Family Island, controls those issues affecting land in Grand Bahama outside of the Freeport Area and land in the other Family Islands. Enacted legislation, such as the Freeport Bye-laws Act (1965) and the Private Roads and Sub-Divisions (Out Islands) Act (1965), assist the Grand Bahama Port Authority and Local Governments in land management.
Ministry of Finance	Care and management of the government’s financial resources. This involves providing support and advice on the most appropriate fiscal, tax and economic policies with the aim of maximizing sustainable economic growth and development with full regard to equity and social policies.

Table 3. Gaps in land related regulations.

Regulation/Document	Function	Gap
The Bahamas Agricultural and Industrial Corporation Act (Chapter 358) (2006)	An Act to provide for the establishment of The Bahamas Agricultural and Industrial Corporation, for the functions of the Corporation and for matters connected therewith or Incidental thereto	No clear provisions made for the sustainable management of land
Forest Policy (1988) The Forest Act 2010 (Amendment 2014)	Provides a legislative framework for the enforcement of The Bahamas government comprehensive plan for land use and the conservation and control of forest resources	Although provisions are made for the sustainable management and conservation of forest resources on Crown Lands, this need to be extended to all land areas of The Bahamas

Regulation/Document	Function	Gap
The Bahamas National Trust Strategic Plan (2018-2022)	The government will work with The Bahamas National Trust (BNT) in the creation of policies necessary to enhance biodiversity conservation in alignment with international best practices and complying with national sustainable development goals	No clear mention of sustainable land management practices
National Biodiversity Strategy and Action Plan (1999)	The principal instrument for implementing the United Nations Convention on Biological Diversity (CBD) at national level	Competing demands for limited, finite, supply of land Absence of a comprehensive land use plan pose many threats for sensitive areas Various land uses are competing and habitat conservation is affected Allocation of land based on the principle of “ <i>highest and best use</i> ” does not properly cater for sustainability
National Invasive Species Strategy (2003)	To manage and control the spread of invasive species	Absence of the requisite capacity and legislation impedes the successful implementation of this strategy
Coastal Protection Act (Chapter 204) (2001)	An Act to make provision for the protection of the coast against erosion and encroachment by the sea and for purposes connected therewith	Makes provision for the protection of land through coastal protection work, but sustainable management of waterfront land is not clear
Conservation and Protection of the Physical Landscape of The Bahamas Act (Chapter 260) (2001)	An Act to make provision for the conservation and protection of the physical landscape of The Bahamas	Protection of land from encroachment, but needs to extend to include more safeguards for land

Regulation/Document	Function	Gap
		Land zoning for various land uses to better capture SLM
Town Planning Act (1961)	Control the use of land for building purposes in New Providence and authorises coastal development	No clear mention of sustainable land management practices
Water and Sewerage Corporation Act (1976)	This Act establishes the Water and Sewerage Corporation for granting and controlling water rights, protecting water resources, regulating the extraction, use and supply of water, disposing of sewage and for connected purposes	No clear mention of sustainable land management practices
Environmental Health Services Act (1987)	The Act provides the regulatory framework for solid waste management in The Bahamas. It promotes environmental protection in order to ensure human health. The Act has regulations related to emissions of contaminants to the air, water and soil, and provides for establishment of authorised dumps, but makes no provision for their design, siting and operation	No clear mention of sustainable land management practices
Agriculture and Fisheries Act (1963)	Prescribe rules to define areas (“protected areas”) within which is unlawful for any person except a licensee to plant, propagate, take, uproot or destroy any species of plant; as well as rules to conserve, uproot, or destroy any specified kind of plant	No clear mention of sustainable land management practices

Regulation/Document	Function	Gap
The National Wetlands Policy of The Bahamas (1997)	Outlines the government of The Bahamas guidelines and objectives for the protection and sustainable management of wetlands. It also serves as a guide for activities that may be carried out in and around wetlands	No clear mention of sustainable land management practices
Environmental Protection (Control of Plastic Pollution) Act (2019)	An act to prohibit single use plastic foodware and non-biodegradable, oxo-biodegradable and biodegradable single use plastic bags; prohibit the release of balloons; regulate the use of compostable single use plastic bags, and for connected matters	Commendable efforts, but no clear mention of sustainable land management practices

Approach for Developing the Aligned National Action Programme

This chapter provides an overview of the approach and methodology applied in developing the aligned NAP, including governance of the alignment process.

4.1. Objective need for the Development of Aligned NAP

The Bahamas aligned NAP aims to spell out practical steps and measures to be taken to combat degradation and drought in specific ecosystems. The aligned NAP seeks to deliver an integrated understanding of: (a) the biophysical and socio-economic causes and impacts of land degradation; (b) the effectiveness of land management practices adopted to prevent or mitigate land degradation; and (c) the important elements of the institutional, economic and policy environment that need to be in place for SLM. The Bahamas alignment of its NAP of 2006 to the UNCCD 2018–2030 Strategic Framework seeks to steer The Bahamas along an LDN path, in the quest to achieve SDG 15 by 2030. The aligned NAP will provide consideration for urgent integration and

strengthening of existing National Policies, Strategies, Action Plans and the planning framework for conservation, promotion of sustainable land and soil management and combating the exacerbated effects of degradation. The new strategic framework of the Convention for 2018–2030 that emanated from COP 13 enshrines the integration of SDG 15 and target 15.3 into the implementation of the Convention with flexibility to adopt/react to future developments.

4.2. Governance of the Aligned NAP

An Integrated Land Management and Aligned National Action Programme Technical Working Group (ILM/NAP TWG) was established in 2023 to steer the alignment process through technical support and promote the mainstreaming of NAP into national policies and plans. The ILM/NAP TWG met twice per month. The ILM/NAP TWG comprised representative from the following institutions:

- Ministry of Works and Utilities
- Ministry of Environment and Natural Resources
- Department of Environmental Planning and Protection
- Water and Sewerage Corporation
- Department of Agriculture
- Department of Lands and Surveys
- Department of Physical Planning
- Grand Bahama Port Authority and Local Government
- Ministry of Finance

The ILM/NAP TWG expires following the finalization and approval of the aligned NAP, while it is anticipated that a new ILM/NAP TWG or implementation committee would be established and tasked with oversight responsibility for the implementation of the aligned NAP.

4.3. Preparation and Adoption of the Aligned NAP

The development of the aligned NAP was conducted through a consultancy process (during 2023) that included the following:

- Reviewed guidelines, manuals, national documents and other recommended resources to inform the development of the aligned NAP.

- Reviewed the NAP of 2006 to integrate aspects of UNCCD 2018–2030 Strategic Framework.
- Established ILM/NAP TWG to steer the alignment process through technical support.
- Integration of data and information received from stakeholders into the aligned NAP.
- Alignment of NAP with the outcome areas of the five (5) Strategic Objectives (UNCCD 2018–2030 Strategic Framework).
- Revision of implementation activities to comply with the outcomes of the five (5) Strategic Objectives of the UNCCD.
- Integration of aligned NAP into strategic documents.
- Identification of overlaps and gaps using UNCCD guidance and tools.
- Integration of critical elements such as biophysical and socio-economic baseline; information on DLDD; drivers of land degradation; state of land degradation; plans and programmes relating to land degradation, investment patterns, barriers, and opportunities to increase financial investments for UNCCD implementation; innovative financial strategy; policy and legal framework; and monitoring and evaluation framework.
- Identification of NAP priority activities and focused areas.
- Reflects national circumstances related to DLDD and national priorities.
- Analysed policy and planning tools, and human and scientific capacity for NAP alignment and implementation, including financial obstacles.
- Developed an Innovative Financial Strategy for resource mobilization for aligned NAP implementation and overcoming barriers to implementation.
- Completed inception workshop to engage stakeholders and apprise them of the NAP alignment process.
- Aligned NAP completed.

4.4. Stakeholder Engagement and Validation

Stakeholders were consulted as an integral part of this consultancy mentioned above. Stakeholders comments and concerns were incorporated into the reports of the consultancy and ultimately reflected in the present aligned NAP. Further, the outline and draft versions of this aligned NAP were widely discussed and adjusted in keeping with inputs made by the various stakeholders. Finally, this report has also been endorsed and validated by the ILM/NAP TWG.

Implementation Framework and Schedule

This chapter lays out the broad framework for implementation of the aligned NAP. This framework takes into consideration existing frameworks, which the aligned NAP builds upon and integrates into since the NAP is intended to be seen within the broader context of The Bahamas's national development efforts. Implementation of the NAP is being done directly through projects and programmes executed by the Department of Environmental Planning and Protection and related agencies.

5.1. Coordination, Communication, Synergies

The operationalization and implementation of the aligned NAP will require coordination, communication, and synergies. The Department of Forestry, as the National Focal Point Agency

to the UNCCD, is mandated to honour its obligations to the UNCCD. This mandate is also incorporated in the annual work plan of the Department in order to be effectively achieved.

The approach in completing national *Performance Review and Assessment of Implementation System (PRAIS)* reports is participatory and cross sectorial and requires inputs from a wide cross section of stakeholders at the various ministries and departments, sister agencies in the natural resources and environmental sectors, private sector, NGOs, the public and other relevant stakeholders. The Department of Environmental Planning and Protection aims to accomplish this cross sectorial involvement through meetings, focus group sessions, workshops and other feedback and participatory mechanisms as appropriate.

This aligned NAP emphasizes the need for enhanced data sharing across sectoral agencies. An approach of this nature will enable timely and improved access to reliable and high quality data to inform the decision making process, reduce duplication of efforts and improve knowledge sharing in a robust and responsive environment. More importantly, improved data sharing will ultimately contribute to efficiency and effectiveness across agencies.

A strategic communication strategy is critical, both for effectively engaging stakeholders, and for being able to mainstream the objectives and efforts related to combating DLDD, into national and local policies, strategies, programmes and projects, as well as more broadly to be able to reach the broader set of society and stakeholders. The government of The Bahamas recognizes the strong need to synergize its commitments and efforts to combat DLDD with those to conserve and sustainably use its biodiversity, as well as those to mitigate and adapt to climate change. Such crosscutting and synergistic approaches are critical for sustainable development.

5.2. Implementation of the NAP and priorities for the Aligned NAP

The assessment presented in table 4 examines the aligned NAP implementation against the strategic objectives of the UNCCD 2018-2030 Strategic Framework and provides the priorities to be dealt with for the aligned NAP. Stakeholders roles and responsibilities are clearly identified to better guide the implementation of the aligned NAP. The time frame for this aligned NAP is 2023-2030 to enable the aligned NAP to be synchronized with the national policy and planning processes and cycles.

Table 4. Assessment of the UNCCD strategic objectives and expected impacts against The Bahamas’s NAP.

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)	
						1	2	3	4	5	6	7		
<i>1. To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality</i>	1.1 Land productivity and related ecosystems services are maintained or enhanced.	1.1.1 Negative impacts on land productivity and related ecosystems services are prevented and mitigated.	Percentage of degraded land restored and rehabilitated.	1.1.1.1 Implement restoration and rehabilitation practices in order to assist with the recovery of ecosystem functions and services. 1.1.1.2 Local Government organs should provide key monitoring support to ensure land productivity and related ecosystems services are maintained or enhanced.	The Department of Forestry Supported by the Ministry of Environment and Natural Resources, Department of Environmental Planning and Protection, Department of Agriculture, Department of Lands and Surveys, and Department of Physical Planning	X	X	X						50,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)	
						1	2	3	4	5	6	7		
	1.2 The vulnerability of affected ecosystems is reduced and the resilience of ecosystems is increased.	1.2.1 Individual and institutional capacities for SLM, data collection methodologies, analysis and application of indicators for monitoring and presenting UNCCD data among public sector agencies, CSOs and resource users developed and augmented.	Number of persons trained and training completed. Amount of available biophysical and socio-economic baseline data on DLDD.	1.2.1.1 Data driven institutions are encouraged to continuously monitor ecosystems to provide current and relevant data to inform The Bahamas’s reporting nationally and internationally through the country’s performance-based reporting mechanism on SLM. 1.2.1.2 Build capacity through education programmes for land users to perform ecologically appropriate landscape management and restoration, working on DLDD (LADA Methodology, Land Management), and	Department of Forestry and University of The Bahamas Supported by the Ministry of Environment and Natural Resources, Ministry of Works and Utilities, Local Government, Department of Environmental Planning and Protection, Department of Agriculture, Department of Lands and Surveys, Department of	X								30,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)
						1	2	3	4	5	6	7	
				technical staff to monitor and analyse DLDD using satellite imagery and remote sensing.	Physical Planning, Water and Sewerage Corporation, and Grand Bahama Port Authority								
	1.3 National voluntary land degradation neutrality (LDN) targets are set and adopted by countries wishing to do so, related measures are identified and implemented, and necessary monitoring	1.3.1 Establish indicators that will improved monitoring of LDN voluntary target setting and/or implementation and enhance data management for improved monitoring of impacts of SLM.	Number of monitoring tools developed, number of completed LDN voluntary targets progress reports, and improved technology to monitor SLM impacts.	1.3.1.1 Complete the development of voluntary LDN targets at the national level. Identify and monitor land degradation hotspots to inform action to avoid, reduce or reverse land degradation. 1.3.1.2 Operationalization of set national voluntary LDN targets and the Integrated Land Management Strategy.	The Department of Forestry Supported by other sector agencies		X	X					20,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)
						1	2	3	4	5	6	7	
	systems are established.												
	1.4 Measures for sustainable land management and the combating of desertification/land degradation are shared, promoted and implemented	1.4.1 Population empowered to adopt attitudes and practices consistent with SLM principles.	Number of knowledge sharing campaigns implemented.	1.4.1.1 Establish knowledge sharing systems, to enable the National Focal Point to share relevant DLDD information products with stakeholders at the national level. 1.4.1.2 Conduct public awareness activities that targets national and local communities, including schools and teachers. 1.4.1.3 Prepare a DLDD Communication Strategy (CS) focused on specific and/or	The Department of Forestry Supported by the Bahamas Information Services, Department of Environmental Planning and Protection, and other related agencies	X	X	X	X	X	X	X	200,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)
						1	2	3	4	5	6	7	
				critical areas of the aligned NAP. The CS should contain an action plan and targeted population, and examines synergies with the other Rio Conventions, present adequate resources for implementation and allows for collaboration with national stakeholders and civil society to promote SLM. 1.4.1.4 The UNCCD reporting process allows for communicating progress at the international level. All agencies involved are encouraged to continue providing support for The Bahamas submission of									

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)
						1	2	3	4	5	6	7	
				national reports to the Secretariat.									
<i>2. To improve the living conditions of affected populations</i>	2.1 Food security and adequate access to water for people in affected areas is improved.	2.1.1 Improved SLM practices.	Number of measures implemented to promote food security and alternative livelihoods.	2.1.1.1 Continued promotion of measures to build a food secure Bahamas and promote alternative livelihoods.	The Department of Agriculture Supported by Local Government organs	X	X						In kind
	2.2 The livelihoods of people in affected areas are improved and diversified.	2.2.1 Framework developed to improve livelihoods with due gender consideration.	Number of economic incentives provided to benefit both men and women to improve livelihoods. Number of plans that	2.2.1.1 Provision of incentives and services to those actors willing to adapt SLM practices. 2.2.1.2 Integrate SLM interventions into national land use plans and key sector plans recognizing these sectors contribute to land	The Department of Forestry Supported by the Ministry of Environment and Natural Resources, Ministry of Works and Utilities, Department of Environmental Planning and					X	X	X	5,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)	
						1	2	3	4	5	6	7		
			reflect SLM practices.	degradation. This would better promote ILM.	Protection, Department of Agriculture, Department of Lands and Surveys, Water and Sewerage Corporation, and Department of Physical Planning									
	2.3 Local people, especially women and youth, are empowered and participate in decision-making processes in combating DLDD.	2.3.1 Structured framework developed to integrate local people in DLDD decision-making, with due gender considerations.	Number of systems established that involves relevant stakeholders in the regular monitoring and validation of DLDD	2.3.1.1 Develop a Gender Action Plan to integrate women and youth in decision-making processes in combating DLDD. 2.3.1.2 Mainstream DLDD as appropriate into social policies, with a view to	The Department of Forestry Supported by the Department of Environmental Planning and Protection, and Ministry of Environment and Natural Resources			X	X	X				10,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)
						1	2	3	4	5	6	7	
			reporting, with a particular attention to gender. Number of mechanisms developed to ensure gender-responsive engagement of key stakeholders in implementation.	increasing the impact and effectiveness of the implementation of the Convention.									
	2.4 Migration forced by desertification and land degradation is substantially reduced.	2.4.1 Comprehensive and integrated policy and legislative framework for SLM developed.	Number of policy instruments that mainstream DLDD.	2.4.1.1 Mainstream DLDD into relevant national policies, strategies and plans, including description of time frames, instruments, and division of roles and responsibilities.	The Department of Forestry Supported by the Department of Environmental Planning and Protection, and	X	X	X					15,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)
						1	2	3	4	5	6	7	
				2.4.1.2 Strengthen Environmental and Social Impact Assessment (ESIA) requirements, focusing particularly on monitoring and enforcement of mitigation measures set out in environmental management plans.	other related agencies								
<i>3. To mitigate, adapt to, and manage the effects of drought in order to enhance resilience of vulnerable populations and ecosystems</i>	3.1 Ecosystems' vulnerability to drought is reduced, including through sustainable land and water management practices.	3.1.1 Institutional mechanisms for sustainable land and water management improved.	Number of institutional mechanisms developed and implemented.	3.1.1.1 Monitoring of watershed areas/aquifers to better manage drought, thereby improving community resilience to drought. 3.1.1.2 Develop and operationalize drought risk management, monitoring and early warning	The Water and Sewerage Corporation Supported by the Department of Forestry, Department of Agriculture, Department of Environmental		X	X					10,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)
						1	2	3	4	5	6	7	
				systems and safety-net programmes, as appropriate.	Health Services, Department of Environmental Planning and Protection, and Ministry of Works and Utilities								
	3.2 Communities' resilience to drought is increased.	3.2.1 Early warning systems improved.	Number of improved early warning systems.	3.2.1.1 Development and implementation of a National Drought Plan to promote sustainable land and water management practices. 3.2.1.2 Establish systems for sharing information and knowledge and facilitate networking on best practices and approaches to drought management.	The Department of Forestry, Department of Environmental Planning and Protection, Water and Sewerage Corporation, and Department of Agriculture		X	X					5,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)
						1	2	3	4	5	6	7	
4. <i>To generate global environmental benefits through effective implementation of the UNCCD</i>	4.1 Sustainable land management and the combating of desertification/land degradation contribute to the conservation and sustainable use of biodiversity and addressing climate change.	4.1.1 Scientific basis for documenting and monitoring biophysical drivers of land degradation and SLM established.	Number of monitoring tools developed and studies completed.	4.1.1.1 National monitoring and vulnerability assessment of the integrity of the biophysical environment. 4.1.1.2 Develop and manage an updated inventory of abundance and distribution of selected species in keeping with The Bahamas’s National Biodiversity Strategy and Action Plan. 4.1.1.3 Conduct a National Scientific Land Degradation Study and a programme of research for land planning and management.	The Department of Forestry, Department of Environmental Planning and Protection and the University of The Bahamas					X	X	X	60,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)	
						1	2	3	4	5	6	7		
	4.2 Synergies with other multilateral environmental agreements and processes are enhanced.	4.2.1 Programmatic Synergies between SLM, biodiversity conservation and climate change adaptation strengthened.	Number of institutional mechanisms established to promote synergies.	4.2.1.1 Leverage synergies at the institutional level and integrate DLDD, while optimizing efficacy and eliminating duplication of efforts, into (i) national plans related to the other multilateral environmental agreements, in particular the other Rio conventions; and (ii) other international commitments as appropriate, within respective mandates. 4.2.1.2 Develop sound scientific evidence to continuously analyse biophysical	The Ministry of Environment and Natural Resources, Ministry of Works and Utilities, Department of Forestry, Department of Environmental Planning and Protection, Department of Agriculture, Department of Lands and Surveys, Water and Sewerage Corporation, and Department of Physical Planning			X	X					5,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)
						1	2	3	4	5	6	7	
				<p>drivers of DLDD and the interactions with climate change and biodiversity.</p> <p>4.2.1.3 Develop DLDD projects which include climate change adaptation, drought mitigation and restoration of degraded land, and develop tools to assist decision-making.</p> <p>4.2.1.4 Develop a mechanism to document/store traditional and local technical knowledge, good practices, and success stories.</p>									
<i>5. To mobilize substantial and additional financial and non-financial</i>	5.1 Adequate and timely public and private financial	5.1.1 Comprehensive investment framework for	Number of investment component that leverages public	5.1.1.1 Operationalization of the Innovative Financial Strategy to guide the effective	The Ministry of Finance, the Department of Forestry,	X	X	X					50,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)
						1	2	3	4	5	6	7	
<i>resources to support the implementation of the Convention by building effective partnerships at global and national level</i>	resources are further mobilized and made available to affected country Parties, including through domestic resource mobilization.	SLM developed and implemented.	and private sector mobilisation.	<p>implementation of the aligned NAP and set out a framework for investment in DLDD.</p> <p>5.1.1.2 Allocate adequate funding for training, particularly in the areas of remote sensing, GIS, Multi Criteria Decision Analysis, and Information Management Systems.</p> <p>5.1.1.3 Utilize LDN as a framework to enhance the coherence, effectiveness and multiple benefits of investments.</p>	<p>Department of Environmental Planning and Protection</p> <p>Supported by other land related agencies</p>								
	5.2 International support is provided for	5.2.1 Investments patterns for UNCCD	Number of mechanisms that identify and leverage	5.2.1.1 Operationalize the funding sources identified in the Innovative Financial Strategy.	The Ministry of Finance and the Department of Forestry				X	X			40,000

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)
						1	2	3	4	5	6	7	
	implementing effective and targeted capacity-building and “on-the-ground interventions” in affected country Parties to support the implementation of the Convention, including through North–South, South–South and triangular cooperation.	implementation improved.	innovative and sustainable financing.	<p>These include market mechanism, government financing, bilateral and multilateral, as well as, mechanism such as UNCCD, UNFCCC, and CBD.</p> <p>5.2.1.2 Increase efforts to mobilize financial and non-financial resources from international financial institutions, facilities and funds, including Foreign Direct Investment (FDI), private foreign investment, NGOs and CSOs, GCF, and GEF.</p> <p>5.2.1.3 Undertake a comprehensive economic analysis of the costs of the loss of ecosystem</p>									

UNCCD Strategic Objectives	Expected Impacts	Key Output	Key Indicator	Key Associated Activities	Lead Responsible Agency (ies)	Timeframe/Years							Indicative Cost (US\$)
						1	2	3	4	5	6	7	
				services due to land degradation and drought.									
	5.3 Extensive efforts are implemented to promote technology transfer, especially on favourable terms and including on concessional and preferential terms, as mutually agreed, and to mobilize other non-financial resources.	5.3.1 Mechanisms for technology transfer and mobilization of non-financial resources improved.	Number of mechanisms established.	5.3.1.1 Networking to access adequate technology transfer and technical support. 5.3.1.2 Encourage donors to use debt swap mechanism to promote and finance SLM interventions.	The Ministry of Finance and the Department of Forestry				X	X			In kind

5.3. Proposed Priority Actions to Combat DLDD and Promote Sustainable Land Management

The Bahamas is being offered a unique opportunity through the *2030 Agenda for Sustainable Development* to curb the growing threats of land degradation and to reap multiple socioeconomic benefits of LDN, thereby strengthening UNCCD implementation. SDG 15 ‘*Life on Land*’ and its target 15.3 on LDN particularly encourage countries to ‘*combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world by 2030*’ (United Nations General Assembly, 1994). In October 2015, UNCCD country parties decided that striving to achieve SDG target 15.3 is a strong vehicle for driving the implementation of the Convention and requested the UNCCD secretariat and appropriate UNCCD bodies to take the initiative and invite other relevant agencies and stakeholders to cooperate on achieving SDG target 15.3. The following five elements have been identified to achieve SDG target 15.3:

- ✓ LDN targets: setting targets and establishing the level of ambition;
- ✓ Leverage and impact: catalysing the multiple benefits that LDN provides from climate change mitigation and adaptation to poverty reduction;
- ✓ Partnerships and resource mobilization: rationalizing engagement with partners, overcoming fragmentation and systematically tapping into increasing finance opportunities, including climate finance;
- ✓ Transformative action: designing and implementing bold LDN transformative projects that deliver multiple benefits (gender responsive); and
- ✓ Monitoring and reporting: tracking progress towards achieving the LDN targets.

Out of 196 country parties to UNCCD, 129 countries have made the commitment to translate the global goal of achieving LDN by 2030 into national action by setting national voluntary targets with the support of the LDN Target Setting Programme (LDN TSP), which was established by the Global Mechanism in collaboration with the UNCCD (United Nations General Assembly, 1994). The Bahamas is now undertaking their LDN TSP to set national voluntary LDN targets, establish LDN baseline, and formulate measures.

The LDN targets will provide The Bahamas with a strong vehicle for fostering coherence of policies and actions by aligning the national LDN targets with measures from the Nationally Determined Contributions and other national commitments. Investing in LDN also accelerates the advancement of other SDGs due to the close linkages between land and other goals and targets, such as: Goal 1 (No poverty), Goal 2 (Zero hunger), Goal 5 (Promote gender

equality), Goal 6 (Clean water and sanitation), Goal 8 (Decent work and economic growth), and Goal 13 (Climate action).

The process undertaken by the government of The Bahamas for the preparation of the aligned NAP has identified a set of priorities which individually and combined, will ensure that DLDD and SLM are firmly addressed in policies, strategies, programmes and projects in The Bahamas. The approach to determine and select these priorities is qualitative and non-scientific based on qualitative assessment of current and anticipated future risks, threats and drivers of those threats. Some key priority actions to combat DLDD, promote SLM and strengthen the implementation of UNCCD in The Bahamas are:

- Establish and strengthen monitoring systems for all sectors, including GIS capacities
- Increase and strengthen awareness among all stakeholders about the impacts of drought, land degradation and deforestation
- Strengthen scientific foundations, research and development as it relates to relationships between DLDD, climate change and biodiversity, strengthen SLM foundations to resolve DLDD, climate change and biodiversity simultaneously, and comprehensive analysis of the economic losses to society caused by DLDD
- Implement and operationalize a drought early warning system (DEWS)
- Develop and implement a coordination and communication strategy to enhance governance, coordination, and stakeholder engagement, of efforts to combat DLDD
- Special effort to enhance the enforcement of mining regulations and code of practices
- Strengthen data and knowledge management systems
- Develop capacity building efforts.

The government of The Bahamas will ensure that its efforts to combat DLDD are progressing and that the results of these efforts will have meaningful impact. A National Coordinating Committee (NCC) made up of CSOs, researchers, academia and other stakeholders to monitor and evaluate DLDD is critical for monitoring and evaluation. The principal function of the NCC will be to coordinate the implementation of the Convention as appropriate for The Bahamas, and serve as a focal point for the coordination of the NAP and other related programmes (e.g., UNCBD and UNFCCC programmes). Efforts should be made to utilise the existing institutions to the maximum extent possible; this includes maximising opportunities for sharing services and expertise among the various government and nongovernment agencies (Fig. 4). There is a need to establish a national monitoring system dedicated to DLDD. At the national level, Land Degradation Assessment in Drylands (LADA)

and World Overview of Conservation Approaches and Technologies (WOCAT) have some applicability. LADA is a scientifically-based approach to assessing and mapping land degradation at different spatial scales – small to large – and at various levels – local to global. It was initiated in drylands but the methods and tools have been developed so as to be widely applicable in other ecosystems and diverse contexts with minimal required adaptation. The WOCAT tools facilitate the mapping of SLM, thereby avoiding negative bias. Balanced information and mapping capabilities on land resources status and trends in any given area, as well as on their causes, impacts and the actual and potential future responses are provided through the LADA-WOCAT set of tools improvement (FAO, 2023).

LADA's main objective, using its mapping and assessment tools, is to identify and understand the causes of land degradation and the impacts of land use, including the effectiveness of current/recent responses. LADA provides a global monitoring and assessment system and an interlinked national and local level assessment and decision-support system on land degradation and improvement (FAO, 2023). LADA will enable stakeholders (national multi-sectoral teams) and agencies with land users at local level to identify and prioritize required national planning and policy interventions and actions on the ground for promoting the wide adoption of SLM.

In addition, at the global level, LADA developed a Global Land Degradation Information System (GLADIS), which facilitates analysis of the change in the provision of ecosystem goods and services resulting from land management practices. The main components analysed are: biomass, soil health, water quantity, biodiversity, economic benefit and social benefit. GLADIS is based on an assessment of the status and trends of ecosystem goods and services, including the impacts that changes have on local populations. GLADIS summarizes findings in the form of radar diagrams aggregating broad groups of ecosystem goods and services – biomass, soil health, water quantity, biodiversity, also social and cultural impacts, considering their changes over a period of about 15-25 years (FAO, 2023). This sort of integrated monitoring system is ideal for the oversight of the biophysical and socio-economic components of DLDD.

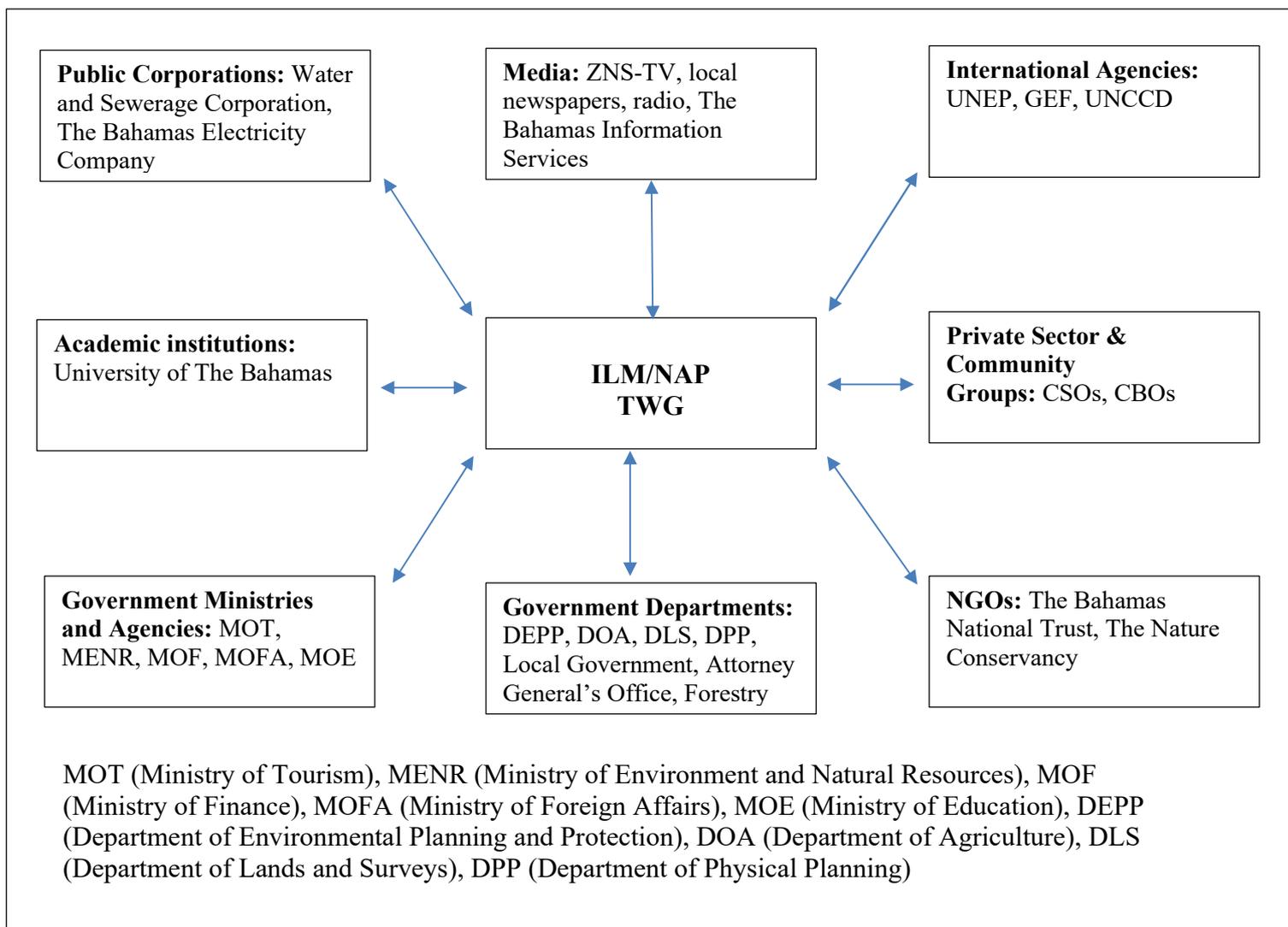


Fig. 3. Proposed stakeholders to monitor and evaluate DLDD.

5.4. Monitoring and Evaluation

The Bahamas's aligned NAP outlines the approach and roadmap towards continued enhancement of the management of land and resources. The aligned NAP consist of and is governed by a set of overarching principles: Achievement of sustainable development; Land management governance and policy; Education, training and awareness; Knowledge information and research; Evaluation and monitoring; and Partnership and financing. The government of The Bahamas will ensure that its efforts to combat DLDD are progressing and that the results of these efforts will have meaningful impact. Commitment from the senior management of each agency involved in monitoring and evaluation must also be secured (Table 5). The progress and impact of the aligned NAP will be reviewed every five years based on

evaluation of the established indicators. The responsibility for monitoring and evaluation will rest with the ILM/NAP TWG.

Table 5. List of stakeholders for monitoring of LDN, impacts of SLM and NAP alignment in The Bahamas.

Stakeholders	Land degradation related functions
Attorney General’s Office	To facilitate the drafting and amending of legislation to protect against land degradation.
Ministry of Environment and Natural Resources	To regulate activities, administer, conserve and sustain the use of land. To implement international Conventions, Treaties, Protocols and Agreements related to land.
Ministry of Works and Utilities	To regulate and monitor land-use, construction techniques, implementation of building codes and designs that alleviate any negative effects of land degradation.
Ministry of Finance	To care and manage government’s financial resources related to land management.
Ministry of Education	To develop diverse and exciting curriculum, which motivate students to seek professions in areas such as urban planning, forestry, environmental resource management, landscape architecture etc.
Ministry of Foreign Affairs	To facilitate appropriate national representation at regional and international meetings and other gatherings, including those linked to land degradation.
Ministry of Housing	To promote environmentally friendly land-use, construction techniques and designs that alleviate any negative effects of land degradation, while providing affordable housing for Bahamians.
Ministry of Social Services	To address issues of poverty, crime and other social ills that may contribute to or result from land degradation.
Ministry of Tourism	To promote sustainable tourism and ecotourism development policies. To move from a mass tourism to a sustainable tourism model.
Ministry of Trade and Industry	To promote and facilitate industrial growth and innovation through use of best available technologies, conducive to the Bahamian environment.
Cabinet Office	To demonstrate national commitment to the fight against land degradation and implementation of SLM practices. To integrate into national emergency action plan land degradation to prepare or promote relevant options for mitigation.

Stakeholders	Land degradation related functions
Grand Bahama Port Authority and Local Government	To regulate and monitor coastal and harbour/marina design requiring alteration to the physical landscape of the coastal zone and upland terrain. To control issues affecting land in Grand Bahama outside of the Freeport Area and land in the other Family Islands.
Department of Environmental Planning and Protection	To provide for the regulation of activities and the administration, conservation and sustainable use of the environment.
Department of Forestry	To serve as the National Focal Point for the UNCCD and lead and support efforts to combat land degradation.
Department of Environmental Health Services	To investigate problems and institute preventative and remedial measures in areas of management and disposal of solid, liquid and gaseous waste.
Department of Agriculture	To achieve sustainable growth and development of the agricultural sector through optimal use of land.
Department of Lands and Surveys	To protect Crown and government interest and encouraging balanced use and preservation of land.
Department of Physical Planning	To regulate and monitor excavation activities in an effort to reduce land degradation..
Department of Meteorology	To complete storm surge atlas and vulnerability mapping for The Bahamas to assist in land use planning.
Water and Sewerage Corporation	To formulate standards for water resource development and wastewater treatment systems.
The Bahamas Information Services	To facilitate public awareness and education through media coverage (such as documentaries, articles, factoids, etc.) of the issue of land degradation and how the public could assist in eradicating unsustainable land-use practices.
The Bahamas National Geographical Information Systems Centre	To act as the central repository of spatial data. To facilitate the planning process through management of georeferenced data.
University of The Bahamas	To conduct research and participate in collaborative efforts with government agencies, local communities, and international institutions, in the areas of urban planning, sustainable agriculture practices, land management and use initiatives.

Stakeholders	Land degradation related functions
The Bahamas National Trust	To maintain existing park assets (inclusive of land) and future infrastructural improvements allowing management of these special places.
The Nature Conservancy	To promote healthy ecosystems and reduce risk to vulnerable communities by mainstreaming nature-based solutions (SLM) into national policies and practices.

Integrated Land Management Strategy

This chapter is based on the potential contribution of integrated land management (ILM) to positive transformative change, achieving land degradation neutrality (LDN) and addressing land degradation, and drought issues.

ILM requires long-term collaboration among different groups of stakeholders across The Bahamas to achieve the multiple objectives required from the land. The five key features that facilitates participatory development processes and characterize ILM include: 1) shared or agreed upon management objectives that encompass multiple land benefits; 2) field practices that are designed to contribute to multiple objectives; 3) management of ecological, social, and economic interactions for realizing positive synergies and mitigating negative trade-offs; 4) collaborative, community-engaged planning, management, and monitoring processes; and 5) the reconfiguration of markets and public policies to achieve diverse land objectives. Additionally, ILM plays an integral role in achieving LDN through collaboration across actors, sectors, and scales (national, district, community) (Fig. 3). It is important to note that ILM is concerned with the development of management strategies for land rather than with a determination of how they are spatially parcelled or zoned (UNCCD/Science-Policy Interface, 2022).

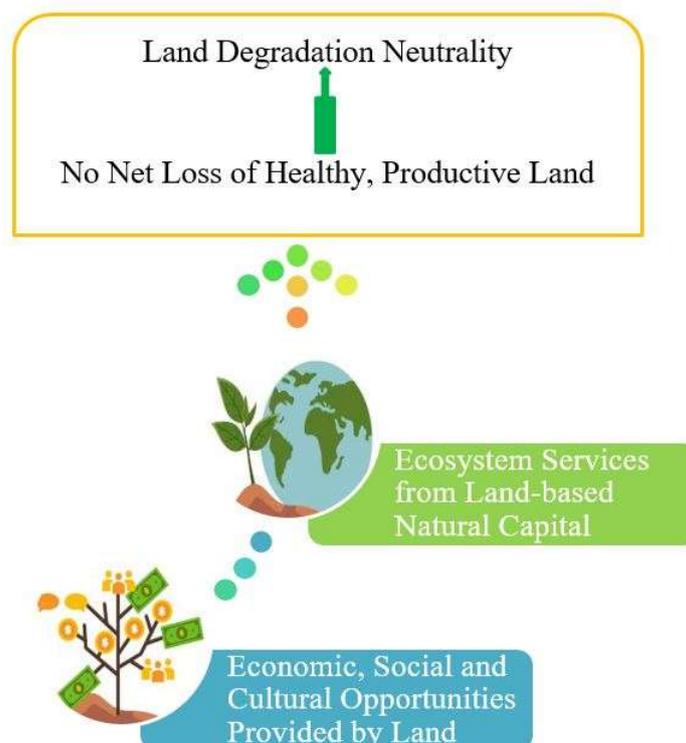


Fig. 4. ILM approach through stakeholder coordination and collaboration.

6.1. The Transformative Potential of ILM in Achieving a LDN Bahamas

The principle of LDN requires land management efforts that go beyond a consideration of sustainable land management practices to embrace an integrated form of national planning. This allows unavoidable losses in The Bahamas to be compensated and land diversity (e.g., socioeconomic, ecological, and cultural) to optimize the LDN response hierarchy (i.e., avoiding, reducing, and reversing land degradation). The LDN principle permits trade-offs among competing interests across land and aids in the optimization of synergies between the mandates of the three Rio Conventions for which land is central (i.e., UNFCCC, CBD and UNCCD) (UNCCD/Science-Policy Interface, 2022).

Achieving a LDN Bahamas requires more than just scaling up sustainable land management. Therefore, it is paramount that The Bahamas realize that the LDN principle is most effective when it is integrated (alongside actions relevant to the other Rio Conventions and UN Sustainable Development Goals) into existing national planning systems that govern the use of natural resources for development. Transformative change can be operationalized in The Bahamas through identification of entry points for LDN into national planning systems. The land use planning system of The Bahamas provides the context in which LDN targets are set and implemented. Further, the most suitable complement of ILM tools and approaches for LDN target setting and implementation could be identified and employed to capitalize on synergies with other planning processes.

The integration of LDN into the ILM system of The Bahamas must be achieved through a national, long-term vision that integrates the interests of multiple sectors with different demands for land resources. This vision requires sufficient financial support and a land governance system that is designed to enable the achievement of LDN. The land governance system should secure land tenure and equitable access to land for men, women and youths and ensure regulatory and policy alignment so all dimensions of the enabling environment work effectively together. As working effectively together entails the concurrent pursuit of economic, sociocultural, and environmental targets within land governance frameworks, LDN and ILM processes can be described as sharing many common goals.

Frameworks that embodies ILM include integrated watershed management, regenerative agriculture, integrated natural resource management, sustainable land management, multi-functional agro-ecosystems, and landscape approach. Some aspects of these frameworks are already in practice in The Bahamas. Therefore, transformative changes

could build on these frameworks to promote a fundamental, system-wide reorganization across technological, economic, and social factors, including paradigms, goals and values.

The Bahamas could reap tremendous benefits from widening the lens on LDN and exploiting synergies that are thematic (i.e., the restoration of degraded lands to fulfil multiple goals) and process-related (i.e., the development of common tools and approaches) to accelerate advancement towards LDN and deliver multiple wins through concerted planning efforts. ILM efforts can, in turn, improve food, water, and energy security, improve livelihoods, increase drought resilience, reduce poverty, reduce soil erosion, and contribute to habitat conservation for rare and endangered species across The Bahamas. The utilization of ILM processes in The Bahamas have the potential to enable the integration of multi-stakeholder and cross-sectoral views for designing transformative interventions tackling LDN and drought resilience. Initiatives of this nature enhance sustainability, budgetary efficiency, and the effectiveness of the interventions with a focus on natural resource regeneration for ecological and equitable economic empowerment and well-being; increased sustainable productivity and market linkages associated with agriculture, livestock, and fisheries-based livelihoods; enhanced health, education and gender equity, synergies and outcomes while promoting natural resources resilience; and increased land health and productivity while providing a supply of quality water for humans, livestock and irrigation.

Participatory ILM helps decide on the best mix of policy instruments to achieve a vision of sustainable development. This participatory approach could be applied in The Bahamas to solicit interventions and developments from stakeholders according to land management options such as primary conservation with Payment for Ecosystem Services (PES); mixed land use with partial PES financing; and industrial agriculture. Stakeholders inputs on these matters would indicate the support structure and identify opportunities to improve the sustainable use of natural resources while simultaneously promoting social equity, reducing corruption and fostering cultural identity. A model of this nature also fosters transparency in the decision-making process and leads to a shared understanding, thereby motivating stakeholders to take responsibility for the actions identified as necessary towards their common goal.

Integrating the ILM process with LDN, presents a win-win situation for The Bahamas despite the challenges that may arise. Space should be created to allow discussions of the ambivalence, dilemmas, unpleasant choices, and social conflicts that arise during the process of seeking optimal solutions that all actors can accept as being in their collective interest. Even though allowing pluralism does not necessarily result in actionable knowledge (as much as consensus does), it is nonetheless important for enabling transformative change.

6.2. Linking ILM Planning with the LDN Framework

The goal of achieving a land-degradation neutral world first emerged at the UN Conference on Sustainable Development (Rio+20) in 2012. The concept of LDN was subsequently adopted by the UNCCD 12th COP and described 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*” (Decision 3/COP 12). LDN has since been embraced globally. Some important factors that must align for the successful operationalization of the LDN framework include (i) an enabling environment (i.e., the combination of institutional, financial, policy/regulatory and science-policy elements that enable progress towards LDN), and (ii) opportunities for multiple benefits of halting and reversing land degradation (i.e., positive environmental outcomes combined with improvements in human well-being). ILM is also identified as a fundamental process for Country Parties such as The Bahamas to use in achieving LDN (Verburg et al., 2022). The Bahamas could take some critical steps to link ILM with the LDN framework through specific entry points. These phases include (Verburg et al., 2022):

- *Description and assessment.* The socio-ecological landscape (e.g., gender considerations, human development, institutional frameworks, and tenure regimes) need to be understood to set realistic, location specific goals. The description and assessment phase involves taking stock of current actors, formal and informal, whose decisions impact the planning region. The implementation of this phase needs to capture land tenure arrangements, governance structures, conflict over land, and access to ecosystem services. This would facilitate the prediction of possibilities of change to circumstances and governance structures that can influence this phase and all other phases, including the anticipated outcomes and impacts. This phase offers an entry point to the LDN framework, by setting a baseline against which neutrality is assessed. The counterbalancing mechanism requires a baseline-setting period to establish a reference against which achieving LDN through this mechanism can be evaluated. In addition to establishing a land degradation baseline, the description and assessment phase involves preliminary assessments that assist with planning for and integrating LDN. These assessments include land potential and resilience assessments, socio-economic assessments and assessments of the role that gender and inclusion may play.
- *Visioning and goal setting.* Target-setting by negotiating desired landscape outcomes is critical at this point. Depending on the ILM system, this phase can take place formally

or informally, and it may be prescribed top-down or negotiated through a participatory process. Different sets of actors across The Bahamas might be involved, with the most dominant actors influencing priorities among different goals. These actors can include non-locals, such as multinational firms and lenders or donors, such as the World Bank. The protection of land resources is one of several environmental and socio-economic goals of the ILM vision. Visioning is not a one-off activity; instead, goals are often revised and modified (living strategy). The LDN framework vision informs The Bahamas voluntary targets for no net loss of healthy and productive land for each land type.

- *Planning.* This phase considers concrete landscape changes, including the prioritization of interventions and their locations. Given the political nature of land management, economic considerations are often prioritized over those related to the environment and social justice. Whereas land resources are considered common-pool resources to be preserved for the benefit of current and future generations, irrespective of their property status, land ownership influences final decisions on land use allocation or re-allocation. The planning phase is an entry point for ILM planning processes to counterbalance mechanisms of the LDN framework. Counterbalancing is to be managed within the same land type and within an administrative (e.g., province) domain for which land use decisions are made. In order for The Bahamas to maintain or exceed neutrality, actions aimed at positive changes need to be negotiated to compensate for projected losses over an equal area of the same land type. When planning to counterbalance, the resilience of counterbalancing interventions in the long term and likely trade-offs between ecosystem services need to be considered. Following the LDN response hierarchy (i.e., avoid > reduce > reverse land degradation), prevention is viewed as better than the cure. Thus, planning specific interventions should prioritize land where the prevention of land degradation is possible, followed by mitigation through improved land management practices, before targeting land for restoration interventions. Planning is guided by preliminary assessments as well as by the LDN targets set by The Bahamas. Integrating LDN into the overall ILM framework, rather than planning and tracking progress towards LDN separately, allows a consideration of the cumulative impacts of all land use decisions on LDN. This strategy has the added advantage of emphasising, a priori, the benefits of avoiding land degradation (i.e., in the planning phase when land uses are selected), rather than relying solely on *ex post facto* monitoring (i.e., when prevention of land degradation will no longer be an option).

- *Implementation.* This phase constitutes a real test of how viable the approach is under actual conditions. Policy instruments for implementing ILM range from command-and-control tools to financial incentives and information campaigns to increase understanding of benefits. Effective implementation of ILM depends on the spatial coordination of these policy instruments and cooperation among actors from various domains and sectors. Acknowledging and profiling the role of local actors to ensure ownership is essential to effective implementation because it ensures compliance. Compliance can be achieved by applying appropriate enforcement mechanisms, such as penalties and fines, or by involving a broad range of actors in participatory planning early in the process. Acknowledging the role of local actors helps ensure the on-going participation of local populations and institutions in the adaptive management of land-based resources in terms of ILM. Implementation roadblocks are common and point to omissions during the planning phase (e.g., past planning and other legacies, conflicts between proposed and customary practices, or unexpected events). They also suggest evolving demographic, socio-economic and/or environmental circumstances that could not be foreseen in the planning phase. Addressing these roadblocks requires revisiting prior planning phases, often multiple times, and using principles of adaptive management embedded in ILM processes. The LDN framework stresses the selection of suitable interventions and the crucial role of an enabling environment for the successful implementation of the LDN principle using the counterbalancing mechanism. The implementation phase of an ILM offers an entry point for direct interventions geared towards avoiding, reducing, or reversing land degradation and for actions that ensure an enabling environment. Integrating LDN with ILM allows for leveraging of investments, avoids duplication of efforts to foster an enabling environment, and helps achieve multiple benefits.
- *Monitoring and evaluation.* Issues hindering the successful implementation of ILM process can be identified in this phase, and corrective action can be initiated where necessary. Effective monitoring depends on reliable baseline data and assessment models. Evaluation requires a thorough understanding of factors other than land use interventions that may have contributed to change. Monitoring and evaluation may involve the same or a different set of actors. Depending on the ILM system, monitoring and regular revisions of the strategy may be prescribed in the legislation or not. Monitoring and evaluation that are part of the ILM cycle present an entry point for monitoring progress towards LDN. Indicators such as trends in land cover, land

productivity, and soil organic carbon stocks, for which baseline values have been assessed form the centrepiece of a monitoring strategy. These indicators do not always provide conclusive evidence of changes in land health status. Therefore, complementary indicators at the national level are recommended to support the interpretation of the global metrics as well as to provide additional context, especially in the context of considerations not covered by the global indicators, such as social and economic impacts within the local context.

Linking ILM with LDN allows different actors across The Bahamas (e.g., landholders, local communities, and local governments) to attain multiple benefits while simultaneously addressing key societal, environmental, and economic challenges associated with land management policies. Some of these benefits for the people of The Bahamas are:

- multi-functional landscapes where synergies are better explored and the trade-offs between planned uses of the same land are minimized;
- more balanced land allocation within a community, watershed, or district that considers the different uses needed in that administrative or geographic area, with the possibility of identifying areas for land restoration and/or rehabilitation;
- decreased risk of land degradation by regulating use on fragile landscapes;
- enhanced efficiency of land resource use by allocating land in an optimized manner, increasing outputs in terms of goods and services over less land;
- better accounting and tracking of changes in natural and social capital;
- improved policy coherence by holistically integrating sectoral policies and reconciling other policy objectives that play out on the same land resources;
- collectively formulated cross-sectoral initiatives that enhance sustainability, promote budgetary efficiency and effectiveness of LDN interventions; and
- the use of LDN principles to counterbalance losses in one land type with equivalent gains on the same land type elsewhere, in the design of interventions.

Effective and efficient integration of interventions to achieve LDN within The Bahamas planning systems that incorporate ILM goes beyond technological solutions. Tools and approaches for ILM are not the blanket solution to all challenges. The process of ILM and the diverse human capacity of institutions for selecting multiple tools and models within their socio-political, economic, and ecological contexts drives the quality of implementation. It is not just a matter of choosing the right tool and accessing the best information. Tools and approaches can support the process and should therefore account for the dynamic context of socioeconomic development and climate change to better inform and link science and policy.

Attention needs to be given to how best to integrate ILM and LDN interventions into existing national or sub-national planning systems of The Bahamas for which the use of tools is just a step. Also important is a consideration of the social, political, and cultural contexts in which policymakers' interpretations are made and are affected by the goals and values embodied in political and economic systems. These contexts include discussions about land degradation, drought and green growth, the unsustainability of economic policies, infrastructure planning, consumption patterns, and regional and global financial markets. Policymakers and other stakeholders tasked with the linking of LDN and ILM process need to be aware and appreciative of existing tools. Furthermore, capacity built within The Bahamas for the assessment and use of ILM tools is needed along with scientific institutions with the capacity to support the ILM process for achieving LDN.

6.3. Recommended Actions for The Bahamas Policy Makers

The ILM approach can help The Bahamas reconcile multi-objective land uses, seek LDN (i.e., balancing losses with gains), carefully consider trade-offs, and navigate possible conflicts between sectoral interests and potential uses (e.g., conservation and productivity). In the quest to achieve or exceed LDN targets, some action-oriented recommendations are presented here for policy and decision makers and other actors involved in land management for The Bahamas. These recommendations are intended to help develop inclusive measures for ILM that encourage positive transformative change towards a better, LDN future for the people of The Bahamas.

- ✚ Provide a more central role for ILM in developing national policies to address land degradation and drought, to help achieve LDN, and to support efforts that address the interlinked challenges underpinning Sustainable Development Goals.
- ✚ Use ILM as a vehicle to create synergies and policy coherence among the three Rio conventions, including the Kunming-Montreal Global Biodiversity Framework and the Paris Agreement, while implementing LDN targets.
- ✚ Integrate LDN target-setting and implementation into national and subnational ILM processes.
- ✚ Incentivize collaboration between academic/research and practitioner communities specializing in land management to develop new or tailor existing tools and approaches.
- ✚ Promote national knowledge generation and sharing of approaches and tools to support ILM to achieve LDN.

Innovative Financial Strategy for Aligned National Action Programme

This chapter is based on financial information gathered from The Bahamas as well as other Caribbean countries that are implementing NAPs. It also includes a forecast of adequacy, timeliness and predictability of external resources, particularly bilateral assistance required to implement the aligned NAP.

The Innovative Financial Strategy is reflective of both global, regional and national developments since Rio 1992 and the original establishment of the UNCCD. Some of the constraints and challenges facing the deployment of the UNCCD are similar to those facing the UNCBD and the UNFCCC. But compared to its two Rio sister conventions, the UNCCD has been and is particularly affected by insufficient financing, a weak scientific basis, insufficient advocacy and awareness among various constituencies, institutional weaknesses, and difficulties in reaching consensus among Parties of the Convention.

The Bahamas has been affected by the changing policy environment since Rio, particularly so with: the adoption of the SDGs; the outcomes of the World Summit on Sustainable Development (WSSD); increased support to the least developed countries; stronger commitment for climate change mitigation and adaptation; prospects of global agricultural trade liberalization; and growing numbers of environmental migrants globally.

7.1. Resource Mobilization

Resources could be mobilized through potential domestic, external and innovative sources of financial resources. The Bahamas's ownership of development priorities, a focus on results, the forging of inclusive development partnerships, and transparency and accountability in the use of resources, are all deemed critical for the successful implementation of the Innovative Financial Strategy.

External sources of funding

External sources of funding range from bilateral and multilateral donors to multinational corporations and charitable foundations, among others. While bilateral and multilateral funding sources have traditionally contributed to the majority of project or programme financing, international funding is increasingly identified as supplementary resources. Increasingly, international funding is now dependent upon the level of domestic resources which The Bahamas is able to generate from its domestic budgets as well as, upon the level of co-financing from other domestic and international donors/investors.

A better understanding of the international donor community is critical, in addition to mechanisms for increasing the mobilization of funding from external sources. Mobilizing funds from external sources requires knowledge of the best possible development partners, their priorities, goals, interests, policies, and budgets. Even though international donors differ from one another in terms of preferred intervention areas, financial instruments, and funding prerequisites and conditions, there remain several similarities among them. A number of strategic actions could be taken in The Bahamas to aid in the improvement of resource mobilization from donors. Similarly, some of these measures, such as specific reforms, may also be conducive to increasing mobilization of funds from other external sources.

Major funding sources include the Global Environment Facility (GEF), World Bank, European Union (EU), International Fund for Agricultural Development (IFAD), Inter-American Development Bank (IADB), USA, Netherlands, Germany, Japan, Italy, Canada and Denmark. UNDP, UNEP, FAO, Global Mechanism of UNCCD, and United Nations Educational, Scientific and Cultural Organization (UNESCO) are the UN agencies involved in natural resources. Additionally, several foreign NGOs are involved, together with CSOs to provide technical assistance and support.

The financing environment has changed profoundly within the last two decades. With GEF becoming a financial mechanism for the UNCCD, official development assistance (ODA) flows began increasing again after a decade of stagnation and declining resources for rural development and agriculture. Donors have refocused their financing strategies to support country-driven priorities, based on Poverty Reduction Strategy Papers and other country-led development planning instruments. Various innovative financing instruments have also come to life, including payments for ecological services and carbon finance.

The development of aligned NAPs as part of the UNCCD process is intended to foster initiatives to help avoid, reduce and reverse land degradation and drought. The Global Mechanism, i.e., the entity that is assisting countries to mobilize financial resources and increase investments for SLM, is aligned to the strategic objectives by promoting resources that enhance actions to implement the UNCCD through the UNCCD 2018-2030 Strategic Framework. In parallel, the GEF, which finances several initiatives linked to climate change adaptation or mitigation, also includes the UNCCD 2018-2030 Strategy within its priorities and framework.

GEF 8 Replenishment Cycle provides the details of the land degradation focal area programs and activities for the period 2022 to 2026. The mandate of GEF is to invest in global environmental benefits from production landscapes, as it pertains to its role as a financial

mechanism of the UNCCD. Additionally, the Land Degradation Focal Area (LDFA) provides the opportunity for eligible countries such as The Bahamas to utilize GEF resources for implementing the Convention and the UNCCD 2018-2030 Strategic Framework. This strategy is a comprehensive global commitment to avoid and reduce land degradation and to restore the productivity of degraded land to achieve LDN, improve the livelihoods of more than 1.3 billion people, and mitigate the impacts of drought on vulnerable populations (GEF, 2023).

The GEF experience and achievements with SLM offers an appropriate anchor for countries such as The Bahamas to harness this opportunity in a holistic and coherent manner, which will be critical for building back better and green recovery. Based on the demands of The Bahamas, the GEF-8 LDFA strategy offers the option for a dedicated regional program that would help coordinate these efforts with a view to apply best practices, ensure multi-stakeholder involvement, and a comprehensive approach to knowledge management and capacity building, all geared towards leveraging and upscaling impactful investments of GEF and its long-standing partners such as IFAD, the World Bank, FAO, UNEP, Green Climate Fund (GCF), including through cooperation with the Least Developed Countries Fund (LDCF) (GEF, 2023).

The GEF-8 LDFA strategy contributes to the ultimate goal of avoiding, reducing, and reversing land degradation, desertification and mitigating the effects of drought. This strategy also supports the implementation of voluntary LDN targets that 129 countries (The Bahamas is currently in the process of developing their LDN) have set. The Land Degradation Neutrality Transformative Projects and Programmes (LDN TPP) checklist and the Operational Guidance for Country Support serves as general guidance for design and implementation of GEF Land Degradation focal area projects and programs in GEF-8. GEF-8 LDFA investments focus on addressing the drivers of land degradation in production landscapes where agricultural, forestry and rangeland management practices underpin the livelihoods of rural communities, smallholder farmers and pastoralists. It focuses on innovative interventions that can be scaled to maximize global benefits for the environment and simultaneously address the issues of local livelihoods and poverty. A specific emphasis in GEF-8 is placed on SLM in drylands addressing, among other issues, drought prone ecosystems and populations. GEF investments may also support the implementation of relevant aspects of national drought plans and other drought-related activities within GEF's mandate to generate global environmental benefits (GEF, 2023).

The objectives of the GEF LDFA are (GEF, 2023):

- ✚ *Avoid and reduce land degradation through SLM* – This objective promotes the wider application and scaling of SLM interventions that improve productivity and maintain or improve flow of agro-ecosystem services that underpin food production and livelihoods. GEF will provide support to a wide range of SLM practices such as Agroecological intensification and diversification and other regenerative agriculture practices; Climate-smart agriculture (CSA); and drought-smart land management (D-SLM).
- ✚ *Reverse land degradation through landscape restoration* – This objective will support countries such as The Bahamas to (i) restore agro-ecosystem services and avoid the reduction of trees and vegetative cover, and (ii) restore forests, avoid forest loss and degradation, including sustainable forest management (SFM). Investments under this objective will focus on strengthening the resilience of landscapes and creating future options to adjust and further optimize ecosystem goods and services as societal needs change or new challenges arise.
- ✚ *Address DLDD issues* – This objective will specifically support countries in dryland geographies to build resilience to mitigate the effects of droughts and to prevent the aggravating effects of land degradation through (i) comprehensive land-use planning taking drought risks into account; (ii) the use of drought databases and tools such as the UNCCD drought toolbox; and (iii) the implementation of D-SLM, including croplands, rangelands, dryland forests, and mixed land-uses. GEF investments will address the entire range of land uses in the production landscape aimed at creating global environmental benefits and building resilience. Based on the specific context, interventions may focus on cropland management, dryland forest management, and rangeland restoration and management.
- ✚ *Improve the enabling policy and institutional framework for LDN* – This objective provides support for countries such as The Bahamas to (i) improve policy coherence and financing systems, (ii) further develop the institutional and regulatory framework and build capacity, and (iii) implement UNCCD enabling activities to fulfil planning and reporting obligations.

Prioritization of budget allocation and donors support is a function of donors' strategies and policies, national and macro policies and sectoral strategies and policies. As The Bahamas is a member state of the United Nations, it can access several funding sources provided by the UN. This sort of international financing sources should be of particular importance to The Bahamas. Key policy recommendations relevant to external financing sources include:

- Land and agricultural production are of vital importance. As such, donors and international agencies should give protection, sustainable use and management of natural resources high priority.
- As desertification, land degradation and drought are closely linked, and drought severity and frequency are increasing, a sub-working group or special taskforce needs to be established as part of the Integrated Land Management and Aligned National Action Programme Technical Working Group (ILM/NAP TWG).
- Donors should consider matching-funding and sharing with the Bahamian private sector and Bahamian Funds, in support of SLM.
- Donors should use debt swap mechanisms to promote and finance SLM interventions.
- Non official development assistance such as Foreign Direct Investment (FDI), private foreign investment, NGOs and CSOs should be explored and accessed.

The Global Mechanism is mandated by the UNCCD to increase the effectiveness and efficiency of existing financial mechanisms and to promote actions leading to the mobilization and channelling of substantial financial resources. The Global Mechanism also supports developing countries such as The Bahamas to position SLM as an investment priority. In addition, the Global Mechanism provides countries with specialized advice on accessing finance for SLM from a range of public and private sources, both domestic and international. Since beginning its operations in 1998, the Global Mechanism has been housed by the IFAD, one of the world's leading international financial institutions in promoting smallholder agriculture and "*enabling poor rural people to overcome poverty*". The Global Mechanism represents a major contribution for the Innovative Financial Strategy design by financially supporting it and all the initiatives linked to SLM. While the Innovative Financial Strategy suggest a finance plan, the Global Mechanism, as well as the GEF 8th Focal Area, supports these activities by delivering financial support.

Domestic sources of funding

The government of The Bahamas considers domestic sources of funding to be the ‘first door of financing’ for any program or project in combating land degradation and promoting sustainable land management. As such, it will strive to raise its own domestic funds to combat DLDD, prior to these being supplemented by donor funds. The aim is to foster The Bahamas’s capacity to raise domestic financial resources and propose means for improving the mobilization of these internal resources.

Considering a medium term investment plan, the main sources of domestic funding were identified to increase the mobilization of resources to be used in combating land degradation and promoting SLM. The annual national budget, administered by the Ministry of Finance, is the major domestic budget source to combat DLDD. All ministries and autonomous departments request their annual budget allocations based on the operational budget and the development budget, respectively. The former includes salaries, rents, and running costs, whereas the latter covers the financing of projects, programmes and other developmental activities. The Ministry of Works and Utilities, Ministry of Environment and Natural Resources, Department of Environmental Planning and Protection, Department of Agriculture, Department of Lands and Surveys, and Department of Physical Planning are institutions dealing directly with issues of relevance to SLM, SSM, and DLDD. Local government units and the private sector do not currently fund activities of direct relevance to combating DLDD, except for farmers’ investments in agricultural activities and practices.

Innovative sources of funding represent potential and non-traditional modes of financing, a new supplementary approach aimed at increasing the amount of resources available and ensuring better predictability of aid flows. This has been recognized as a particularly important condition for maximizing the impact of Official Development Assistance (ODA). In recent years, innovative financing mechanisms are increasingly being seen as a stable and sustainable funding source that is not interrupted by changes in political dynamics or donor modalities. Innovative resources are mobilized through financial mechanisms and instruments where the principles of combating land degradation and promoting sustainable land management are incorporated. The funds from innovative sources can be earmarked to fund SLM activities. Some potential funding possibilities to be explored include:

- Budget of the government (line ministries concerned with matters of the environment and land)

- Possible private sector sources such as tourism and hospitality, manufacturing, and loan agencies
- Co-operating with NGOs in the area of financing
- Accessing funds from relevant international agencies including UNCCD, GEF, UNEP, and the UNDP
- The allocation of resources of the national budget for activities related to UNCCD such as activities that promote SLM is necessary to be considered by the government
- The possibility of the introduction of an environmental tax and the foundation of a national environment fund has to be explored
- Expansion of the co-operation scope with the relevant international agencies and the promotion of co-operation between local and international NGOs for the implementation of specific projects needs elaboration.

7.2. Partnership Building and Technology Transfer

The UNCCD advocates the establishment of partnerships as a means to foster comprehensive and widespread cross-sector collaboration to ensure that sustainable development initiatives are imaginative, coherent and integrated. Partnership building is central to resource mobilization due to the cross-sectoral nature of combating land degradation and promoting SLM, and the multitude of actors involved in it. Partnerships can be established at the local, national, regional, and international level to ensure a holistic approach to resource mobilization.

Local level

The need exists for the establishment of coalitions to succeed in carrying out local projects. This partnership should encompass all the forces and competences at work in the local area, from community services, through decentralized government services, civil society and NGOs, economic and industrial settings, and research institutes or universities. Opportunities at the local level include collaboration with local NGOs and conservation groups. Working with these local organs creates valuable opportunities to establish relationships with a wider network across The Bahamas, the Caribbean region, and globally.

Collective land rights and community-led environmental management are critical pillars in the protection of biodiversity, tropical forests, and ancestral territory. For community groups, territory is essential to cultural and physical wellbeing - intricately linked to food production, medicine, and spirituality. Beyond being core to local community identities and

ways of life, forests are better protected when under local community management, oftentimes having lower rates of deforestation than national parks. Friends of the Environment worked at the grassroots level to increase accessibility of Abaco and greater Bahamas community to sustainable options for island living that address climate change, the importance of biodiversity and coastal conservation. Such efforts coupled with support at the institutional level with governments augurs well for securing recognition of community-led environmental management and collective land rights.

National level

National partnerships serve to build strategic alliances at the policy level. The Department of Forestry and the Department of Environmental Planning and Protection along with other partners implemented a GEF project entitled “*Pine Islands –Forest/Mangrove Innovation and Integration (Grand Bahama, New Providence, Abaco and Andros)*”. This project was consistent with the *GEF V: Strategy for Sustainable Forest Management and Focal Area Strategies for Land Degradation and Biodiversity*. A multi-disciplinary approach to the conservation of biodiversity and ecosystem services was adopted, and further contributed to the linkages between ecosystems and human wellbeing. The Department of Environmental Planning and Protection is currently working along with the PISLM and UNEP on a GEF funded project that seeks to *enhance climate-resilient food production across productive agricultural landscapes through sound Integrated Landscape Management and Land Degradation Neutrality approaches in The Bahamas*. Through this project The Bahamas is developing their LDN–TSP and aligning their NAP to the UNCCD 2018–2030 Strategic Framework. Partnerships with National institutions and Conservation groups could build very beneficial synergies in combating land degradation and promoting SLM.

Regional level

The establishment of partnerships is necessary for the success of regional integration. The PISLM which serve as an Intergovernmental Organization across the Caribbean is a perfect illustration. It is an initiative that facilitate interaction and dialogue among the national, regional and international partners and encourage the active participation of all major groups in the pursuit of the conservation and sustainable utilization of land resources in the Caribbean. Partnerships between different Caribbean stakeholders are the established mode of functioning for development activities across the Caribbean region. Initiatives of this nature have far reaching benefits for The Bahamas and other Caribbean countries.

International level

International partners often provide direct or can facilitate project or program financing, technical assistance, political lobby, exchange of expertise, technology transfer, exchange and dissemination of experiences, and networking support among others. Partners may co-finance an ongoing program or complement a planned program by another partner. In response to the growing awareness of the potential adverse effects of climate change and the particular vulnerability of developing countries such as The Bahamas to this process, a significant increase in adaptation action has been witnessed in recent years in Latin America and the Caribbean. South – South and North – South partnerships are integral in combating land degradation and promoting SLM.

7.3. Action Plan for the Innovative Financial Strategy

The Action Plan for the Innovative Financial Strategy summarizes the main interventions to reach the outcomes and outputs of the strategy (Table 6). This plan uses indicators in the form of a simple scorecard to identify the baseline situation as well as the intended target result. Steps to reach the target are identified.

Table 6. Costed outline in support of The Bahamas’s Aligned National Action Programme to Combat Land Degradation.

Consolidation Track	Indicator	Target	Challenges/Barriers	Phase / (USD)
1. Policy and Governance				
To improve the institutional capacity and the collaboration between governmental agencies	Reinforcement of intra and inter-governmental coordination	- To allocate new resources -To assess the identified strategies for mainstreaming NAP activities (implementation status, progress) and remedy failed ones	Jeopardizing the implementation of the aligned NAP	Phase 1 (3 years) Estimate of \$150,000
To conduct staff training in the areas of	Staff expertise in state-of the-art	To improve staff expertise and build-up resilience	Remaining at a sub-optimal level of staff	Phase 1-2 (3 years)

Consolidation Track	Indicator	Target	Challenges/Barriers	Phase / (USD)
Remote sensing; Geographic Information System (GIS); Multi Criteria Decision Analysis; Information management systems	geological-data management technologies		training and accumulate delays	Estimate of \$400,000
To mainstream DLDD into relevant national policies, strategies and plans	Efficiency of knowledge sharing systems, information flow, consistency of the body of national policies	<ul style="list-style-type: none"> -To set up websites, training, and the distribution of reports to relevant agencies -To enable the National Focal Point to share relevant DLDD information products with stakeholders at the national level -To launch a communication strategy addressing DLDD, including synergies with climate change and biodiversity conservation 	Fail to address DLDD to the extent and in the timeframe that it requires	Phase 2-4 (2 years) Estimate of \$60,000
To finalize the National Land Policy or Sustainable Land Management policy	Overarching policy for SLM	<ul style="list-style-type: none"> -To establish an authoritative policy advisory body for SLM -To mainstream SLM within government agencies 	Unfulfilled SLM policy	Phase 2-4 (1 year) Estimate of \$40,000

Consolidation Track	Indicator	Target	Challenges/Barriers	Phase / (USD)
To strengthen the links between the UNCCD and the poverty and livelihoods elements of the 2030 Agenda for Sustainable Development	Trans-program integration	To harmonize policy efforts to the service of the development agenda	Inefficient integration of development policy initiatives	7 years Estimate of \$40,000
2. Capacity Building, Awareness, and Training				
To strive for a mainstreaming of SLM within educational establishments To enhance the knowledge and capacity of land users to perform ecologically appropriate land restoration	Constituency-level monitoring of land degradation	-To improve and enhance the knowledge base on SLM -To improve capacity-building among direct land users	Lack of SLM information and knowledge in the education establishments for future land users/managers Damage at the micro-level	Phase 1-3 (7 years) Estimate of \$180,000 Phase 1-2 (1-5 years) Estimate of \$500,000
To acquire the capacity to cascade regional (international) forecasts of Drought Early Warning Systems (DEWS) to the national context and analytical	Data appropriation and interpretation Data management skills	To enhance synergy with overarching DEWS capacity-building	Sub-optimal use of internationally-generated knowledge Sub-optimal generation and use of scientific data	Phase 1 (1 year) Estimate of \$70,000

Consolidation Track	Indicator	Target	Challenges/Barriers	Phase / (USD)
capacity of staff working on DEWS				
To conduct awareness of, and training in, specialized areas such as the process of dealing with drought in order to develop appropriate actions in case of unforeseen occurrence	Environmental readiness and preparedness	To improve capacity-building on environmental readiness and preparedness	Apathy to risk of drought	Phase 1 (1 year) Estimate of \$90,000
To enhance the capacity to establish and manage/maintain systematic central databases with quality checks	Degree of centralization and management of data	To improve capacity of the DEPP and in all agencies benefitting from training on UNCCD Reporting (alignment of NAP process)	Sub-optimal flow of scientific data	Phase 1-4 (8 years) Estimate of \$90,000
3. Research and Development				
To produce sound scientific evidence and to determine the relative roles of drivers of DLDD	Drivers of DLDD identified	-To analyse biophysical and socioeconomic drivers of DLDD -To undertake a national scientific study on DLDD and interactions with climate change, and biodiversity	Insufficient grasp of DLDD and dire consequences on mitigation policies Ignoring long-term environmental risks	Phase 1-2 (4 years) Estimate of \$100,000

7.4. Barriers to Implementing the Innovative Financial Strategy for Sustainable Land Management

Accessibility to funding is a major constraint in project preparation and project execution in developing countries. Finding the necessary financial resources for the implementation of projects is often a time consuming and frustrating activity. Financial resources to promote appropriate land uses or sustainable productive practices have not been contemplated at the system-level in The Bahamas. There are no formalized mechanisms, such as agreed-upon action plans or targets, to engage civil society in the process of combating land degradation, that could lead to a cost efficient and coordinated effort to control land degradation. As a result, no effective levels of financing to operationalize the NAP of 2006 or investment planning to combat the effects of land degradation has been achieved. Moreover, the relation between the economy and land degradation is poorly understood and must be integrated as a central theme in the economic decision-making process. Financial resources will be required to drive the implementation of the aligned NAP to combat land degradation in The Bahamas. Some barriers that can impede investments directed towards the implementation of UNCCD are:

- Limitations of the institutional framework
- Fragmented policy and legislative environment
- Lack of an overarching policy and programme framework for SLM
- Overlapping mandates amongst land related agencies
- Limited understanding of roles and responsibilities amongst stakeholders
- Insufficient co-operation and co-ordination between institutions with common objectives or with complementary functions
- Lack of guidelines for SLM in the tourism and housing sectors
- Limited capacity to monitor and enforce SLM practices
- Limited professionals with requisite skills and understanding of UNCCD obligations and issues at the national level
- Limited budget for people in the regulation, oversighting, extension and promotion of the SLM
- Lack of systematic analysis of the capacities needed by The Bahamas's institutions in order to efficiently implement the UNCCD or combat land degradation
- Insufficient awareness among policy makers at both, national and district level of the gravity of land degradation processes and how these affect the development at local and

national levels. This eventually has an impact on how policies are developed and how financial resources are allocated

- High start-up and transaction costs for benefits in the medium and long term
- Insufficient grasp of DLDD and dire consequences on mitigation policies poses a challenge for the production of sound scientific evidence to inform investment patterns.

Conclusions

As a signatory to the UNCCD, The Bahamas is strongly committed to meeting its obligations to prevent and mitigate drought, land degradation, and deforestation in the country. Drought, land degradation, and deforestation are of great concern to the government of Bahamas since these directly and indirectly can cause death, poor health, and in many other ways negatively affect the livelihood of its peoples, including through: pollution of rivers; reduced fish stocks in rivers; surface runoff and mud slides; degradation of ecosystems and biodiversity; and reduced economic productivity.

The Bahamas continues in its progress towards meeting the SDGs and meeting the associated targets. The Bahamas is proud of its unique biodiversity which it is steadfast in protecting for its present and future generations. The country's prosperity depends heavily on this biodiversity for food, medicines, tourism, and other forms of sustenance. The government of The Bahamas will ensure that its economic development both in the short and the long term, does not cause undue adverse effects on its people, who should be the very beneficiaries of the development process. There is an increasing perception and understanding that a good environment contributes to economic growth by reducing risks to people and by enhancing the business and environment potential. In addition, export markets are increasingly demanding responsibly harvested and produced goods.

Coordinating and managing the sometimes conflicting demands on the land is very challenging. As such, the government of The Bahamas is encouraged to increase engagement in collaborative management with its various stakeholders (government agencies, CSOs, NGOs, businesses, private sector, donors, etc.) as a reflection of this shared responsibility. All levels of society shall have a voice and influence on the future of The Bahamas.

The government of The Bahamas is making substantial progress in improving and adjusting existing policies and regulations, as well as designing new ones. These include effective safe guarding mechanisms, mitigation measures, and promotion of more sustainable land use practices. This aligned NAP sets out the roadmap for the government of The Bahamas to continue implementing these plans at the community and national levels. It is equally crucial that policies and land use practices are underpinned by science and research. The role of research and science in developing policies and practices must be strengthened. Reliable research depends on good data, however there is a lack of reliable data and baselines in several sectors, as well as limited or no integration of existing datasets. Importantly, The Bahamas has a long history with close dependency on and deep knowledge of the local environment and

ecology. The Bahamas's policies and practices should be grounded on insights from its valuable local and traditional knowledge.

The impacts of DLDD further exacerbate the impacts of climate change which The Bahamas remains vulnerable to. Conversely, climate change also exacerbates the impacts of DLDD. The efforts to combat DLDD will have substantial benefits for biodiversity, which is the basis for long term food security. These combative efforts will also benefit biodiversity and climate change mitigation/adaptation since many of the causes and solutions to those problems are to be found in appropriate SLM practices and improved governance. The government of The Bahamas continues to rigorously pursue the process of strengthening coordination and cross-sectoral collaboration to ensure integrated approaches to combating DLDD.

DLDD has wide-ranging impacts on livelihoods, ecosystem health and integrity. Land productivity and its ability to provide ecosystem services at local, national and regional scales are limited by desertification, land degradation, and drought. This is manifested in the loss of fertility and nutrients, carbon sequestration, wood production, grazing and hunting opportunities, nature conservation and tourism, which all have direct impacts on the economy. There are also significant off-site impacts from DLDD, which include changes in stream flow, reliability of irrigation, water flow, a decline in quality of drinking water, and the silting of rivers. It is arguably now more important than ever to build resilience to DLDD. With projected global temperature increases, extreme events could occur more frequently in a globally synchronized way. The level of land degradation determines its effects on the provision of ecosystem services and the benefits humans derive from those services. Therefore, actions have to be taken to control the causes, level or effects of degradation.

Ecosystem restoration and SLM as resilience-building activities have the potential to break the downward spiral of desertification, land degradation, and drought. Climate change, land degradation and biodiversity loss share the same underlying causes. The three Rio Conventions (UNFCCC, UNCCD, UNCBD) thus share synergies in possible policy and practical responses. Ongoing projects and programmes in The Bahamas that seeks to better inform biophysical and socio-economic baseline information on DLDD will strengthen the implementation of UNCCD in keeping with the *2030 Agenda for Sustainable Development*. Some notable projects, programmes, and initiatives that are ongoing in The Bahamas include:

- ✚ The Bahamas Land Management System Project to acquire and implement specialised mapping equipment including landfolio for land management – support from Trimble Inc.

- ✚ Integrated Landscape Management for Addressing Land Degradation, Food Security and Climate Resilience Challenges in The Bahamas – support from GEF.
- ✚ Ecosystem Management Project to develop a model of integrated land, water and ecosystem management for The Bahamas – support from GEF.
- ✚ Pine Islands – Forest/Mangrove Innovation and Integration (Grand Bahama, New Providence, Abaco and Andros) Project to integrate biodiversity considerations and ecosystem services into forest management and land use planning – support from GEF.

These ongoing efforts offers an opportunity for The Bahamas to curb the growing threats of land degradation and reap multiple socio-economic benefits of LDN.

Striving to achieve SDG target 15.3 is a strong vehicle for driving the implementation of UNCCD. Elements such as leverage and impact, LDN targets, partnerships and resources mobilization, transformative actions, and monitoring and reporting will guide The Bahamas along the path of achieving SDG target 15.3. The Bahamas is currently in the process of setting national voluntary LDN targets, establishing the LDN baseline, and formulating associated measures. This further shows The Bahamas’s commitment to achieving LDN by 2030. The LDN targets will provide The Bahamas with a strong vehicle for fostering coherence of policies and actions by aligning the national LDN targets with measures from the Nationally Determined Contributions and other national commitments. Investing in LDN also accelerates the advancement of other SDGs due to the close linkages between land and other goals and targets.

The Bahamas stands a great chance in benefitting from UNCCD implementation but a number of policies need to be put in place. Most of the laws are either not clearly defined or outdated. Prompt measures need to be put in place to address this situation which is gravely affecting The Bahamas’s chances of benefitting from implementing agencies such as UNCCD. To secure continued progress in the implementation of UNCCD in The Bahamas, the following recommendations should be considered:

- Increase the awareness among citizen and potential investors on the importance and long term benefits of LDN
- Formulate monitoring and coordinating mechanisms for implementation of UNCCD especially at the local level
- Formulation of a UNCCD committee under the Ministry of the Environment and Natural Resources to ensure monitoring and follow-up process in the implementation of UNCCD

- Increase efforts at the community level to better integrate individuals in solving land degradation issues and achieve cultural changes in unsustainable land use practices which counter LDN
- Greater collaboration among Ministries, Departments and Agencies involved in climate change adaptation, land management, and disaster risk reduction
- Align agricultural practices to support the achievement of LDN (for example climate smart agricultural and sustainable soil management practices)
- Establish, implement and coordinate integrated land use planning to avoid or minimize habitat fragmentation and damage to ecosystems
- Increase efforts to promote sustainable tourism practices
- Increase expertise and technology needed to capture and interpret information on land resources and the impact of climate change
- Leverage financial, technical and capacity building support through the ongoing SOILCARE Phase 1 Project across the Caribbean Community.

References

- CariCOF. (2018). *CariCOF Drought Outlook*.
- FAO. (2023). *Global Land Degradation Information System (GLADIS)*.
http://www.fao.org/nr/lada/index.php?option=com_content&view=article&id=161&Itemid=113&lang=en
- GEF. (2021). *Investing in land health for sustainable recovery*. GEF.
<https://www.thegef.org/news/investing-land-health-sustainable-recovery>
- GEF. (2022). *Combating Land Degradation*. <https://www.thegef.org/what-we-do/topics/land-degradation>
- GEF. (2023). *Organization*. Global Environment Facility. <https://www.thegef.org/who-we-are/organization>
- Global Forest Watch. (2022). *Bahamas*. Global Forest Watch.
<https://www.globalforestwatch.org/dashboards/country/BHS/?category=forest-change&map=eyJjYW5Cb3VuZCI6dHJ1ZX0%3D>
- ICCD. (2017). *The Scientific Conceptual Framework for Land Degradation Neutrality*.
<https://doi.org/10.4324/9780203135365>.
- Martin del Campo, F., Singh, S. J., Fishman, T., Thomas, A., & Drescher, M. (2023). The Bahamas at risk: Material stocks, sea-level rise, and the implications for development. *Journal of Industrial Ecology*, 27, 1165–1183. <https://doi.org/10.1111/jiec.13402>
- Sealey, N. (2010). *Soil and Land Resources of The Bahamas*. https://doi.org/10.1007/978-981-16-0917-6_34
- The Bahamas Environment Science and Technology Commission. (2006). *The national action programme to combat land degradation in the Bahamas*.
- The Government of The Commonwealth Bahamas. (2022). *The Bahamas updated NDC*.
- UNCCD/Science-Policy Interface. (2022). *The Contribution of Integrated Land Use Planning and Integrated Landscape Management to Implementing Land Degradation Neutrality*.
- UNCCD. (2016). *Land degradation neutrality target setting – A technical guide*.
[https://www.unccd.int/sites/default/files/2018-08/LDN TS Technical Guide_Draft_English.pdf](https://www.unccd.int/sites/default/files/2018-08/LDN%20TS%20Technical%20Guide_Draft_English.pdf)
- UNCCD. (2018). *Preliminary analysis – strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality*.
<https://www.unccd.int/official-documents/cric-17-georgetown-guyana-2019>
- UNCCD. (2022). *Drought Overview*. UNCCD. <https://www.unccd.int/land-and-life/drought/overview>
- UNCCD. (2023). *National, regional and sub-regional programmes*. UNCCD.
<https://www.unccd.int/convention/regions/action-programmes>
- United Nations General Assembly. (1994). *Elaboration of an International Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa*. <https://doi.org/> Accessed online:
<http://www.unccd.int/convention/menu.php>
- Verburg, P. H., Metternicht, G., Aynekulu, E., Deng, X., Herrmann, S., Schulze, K., Akinyemi, F., Barger, N., Boerger, V., Dosdogru, F., Gichenje, H., Kapović-Solomun, M., Karim, Z., Lal, R., Luise, A., Masuku, B. S., Nairesiae, E., Oettlé, N., Pilon, A., ... Maltitz, G. von. (2022). *The Contribution of Integrated Land Use Planning and Integrated Landscape Management to Implementing Land Degradation Neutrality: Entry Points and Support Tools: A Report of the Science-Policy Interface*.