

# **SURINAME Aligned National Action Programme to COMBAT LAND DEGRADATION (2023-2030)**



**SURINAME** Aligned National  
Action Programme to  
**COMBAT LAND DEGRADATION**  
(2023–2030)



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The Government of Suriname is pleased to announce the conclusion of its Suriname Aligned National Action Programme (NAP) to United Nations Convention to Combat Desertification (UNCCD) 2018 – 2030 Strategic Framework. The Aligned process has provided us with an opportunity to serve the key instruments in implementing the Strategic Framework. The establishment of a National Technical Working Group (NTWG) is provided to steer the alignment process through technical support and promote the mainstreaming of NAP into national policies and plans. The NTWG comprised of key technical representatives from government departments, private sector, and academia.

Suriname has articulated its commitment to achieve the Strategic Objectives through its Aligned National Programme. The NAP was developed considering the 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.

Suriname hereby affirms its commitment to achieve the Strategic Objectives of the UNCCD as it offers executive political support throughout this process and the proximate stages. Hereby, we thank the Global Environment Facility (GEF), the United Nations Environment Programme (UNEP) and the Partnership Initiative for Sustainable Land Management (PISLM) for its financial and technical support throughout the Aligned NAP process.

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**Hon. Marciano Dasai**

**Minister**

**Ministry of Spatial Planning and Environment, Suriname**

# Executive Summary

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Desertification, Land Degradation and Drought (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 DLDD. 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 DLDD. 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 Suriname 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**.

Some notable projects, programmes, and initiatives that are ongoing in Suriname include:

- The commencement of the concept law for Spatial Planning and the development of the Geospatial Data Intelligence Hub (will be launched October 2024) by the Ministry of Spatial Planning and Environment
- Conservation International is executing the Climate Smart Forestry/ Blue Carbon project for communities

- Ongoing Amazon Sustainable Landscaping and Carbon Stock Project
- REDD+ Project
- The ongoing Suriname Agriculture Market Access Project (SAMAP) to strengthen the capacity of farmers, farmer organizations, and agribusiness by providing grants to improve agriculture quality production and facilitate their foreign market access.

These ongoing efforts offers an opportunity for Suriname 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 Suriname along the path of achieving SDG target 15.3. Suriname is among the countries (129) that have already set the national voluntary LDN target, established the LDN baseline, and formulated associated measures. This further shows Suriname's commitment to achieving LDN by 2030. The LDN targets provide Suriname 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.

Suriname 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 Suriname 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 Suriname is encouraged to increase engagement in collaborative management with its various stakeholders (government agencies, Civil Society

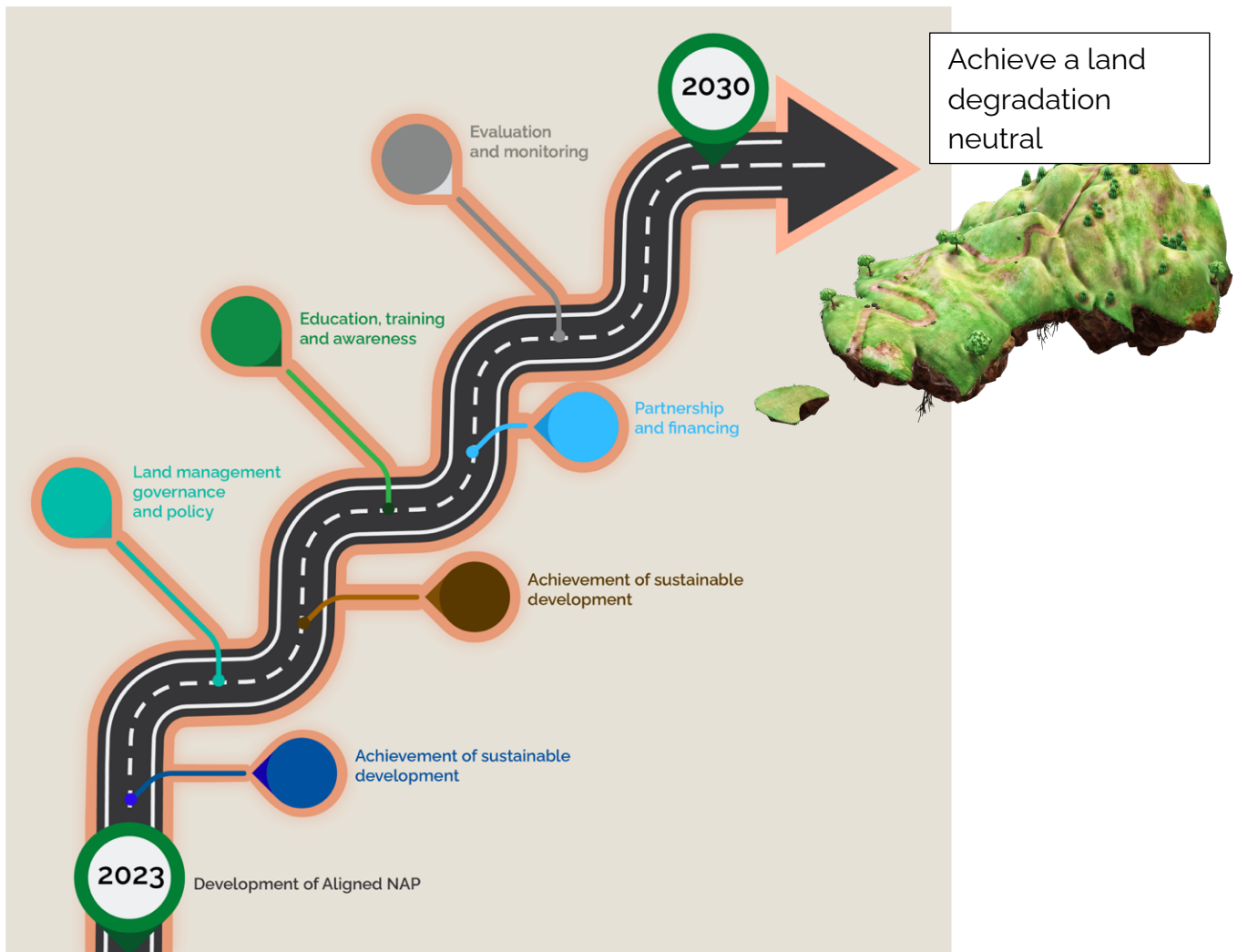
Organizations, Non-Governmental Organizations, private sector, businesses, donors, etc.) as a reflection of this shared responsibility. All levels of society shall have a voice and influence on the future of Suriname. The government of Suriname is making substantial progress in improving and adjusting 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. Importantly, Suriname has a long history with close dependency on and deep knowledge of the local environment and ecology.

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 safeguards 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 Suriname continues to rigorously pursue the process of strengthening coordination and cross-sectoral collaboration to ensure integrated approaches to combating DLDD.

Suriname 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 Suriname's chances of benefitting from implementing agencies such as the UNCCD. To secure continued progress in the implementation of UNCCD in Suriname, the following recommendations should be considered:

- Increase the awareness of potential investors on the importance and long-term benefits of LDN
- Create linkages with various Ministries, Departments and Agencies to allow for the sharing of and easy access to information regarding UNCCD implementation and progress in Suriname
- Formulate monitoring and coordinating mechanisms for implementation of UNCCD especially at the local level

- Formulation of a UNCCD committee to ensure monitoring and follow-up process in the implementation of UNCCD in Suriname
- Increase efforts at the community level to better integrate individuals and achieve cultural changes in unsustainable 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 land zoning, soil mapping, and integrated land use planning to avoid or minimize fragmentation and damage to ecosystems
- Increase efforts to rehabilitate forest reserves and estates in upper watershed area and along river courses
- Increase expertise and technology needed to capture and interpret information on land resources and the impact of climate change
- Leverage support through the ongoing SOILCARE Phase 1 Project across the Caribbean Community.



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CARICOM	Caribbean Community
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
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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## Chapter 1: **Introduction**

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The deterioration of the land qualities caused by land degradation is mainly due to: development of hydropower; gold mining; exploration of crude oil and sand; and shifting cultivation, mainly in The Interior Uplands. It has to be noted that the development of the hydropower plant in the Brokopondo area in Suriname was coupled with the inundation of 1,560 km<sup>2</sup> of pristine forestland, causing first of all loss of cultural heritage, besides loss of a huge volume of extractable wood species, loss of wildlife habitat and consequently land degradation. Moreover, mining activities have created already approximately 100 km<sup>2</sup> of mined out areas, i.e., degraded land awaiting rehabilitation. Some other 1,200 km<sup>2</sup> vegetated land is converted to agricultural land. The total forest conversion area due to shifting cultivation is estimated to be some 2,500 km<sup>2</sup> (Republic of Suriname, 2020).

Currently, land degradation and loss of biodiversity, inclusive wildlife habitat still come from mining, especially small-scale gold mining, and shifting cultivation on vulnerable soils in the interior (Republic of Suriname, 2020). Such 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. Most fortunately, timber logging is largely still based on sustainable management practices, especially due to provisions enacted by the government of Suriname, such as the enactment of the Forest Management Law

of 1992, the establishment of the Foundation for Forest Management and Production Control (SBB) and the National Forest Policy of Suriname.

Suriname is known for its vulnerability to natural hazards, but hosts a significant portion of the planet's natural wealth and biodiversity. 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 Suriname, costing millions of dollars annually and affecting a significant part of the rural population. Further, land degradation is clearly becoming an increasing problem in Suriname as a result of years of unsustainable land use and management. Based on estimates, the proportion of degraded land in Suriname, which encompasses the results for the three indicators (land cover, land productivity, and soil organic carbon), is 15.47% of the total land area (The Republic of Suriname, 2023).

National Action Programmes (NAPs) serves as the key instruments to implement the UNCCD. They are often supported by action programmes at sub-regional (SRAP) and regional (RAP) levels. Suriname NAP was developed through a participatory approach involving various stakeholders, including relevant governmental offices, scientific institutions, and local communities. An approach of this nature facilitated the spelling out of practical steps and measures to be taken to combat degradation and drought in specific ecosystems. Suriname's NAP was aligned to the UNCCD 2018–2030 Strategic Framework, as well as other relevant implementation activities relating to the Convention such as the PRAIS 4 reporting process where data gaps were taken into consideration. The adoption and implementation of this aligned NAP would exemplify the central role of healthy land to the wellbeing of Suriname's ecosystem, food production, economic growth, and biodiversity (UNCCD, 2023).

This document is intended to provide guidance to the people of Suriname to combat land degradation based on identified drivers. These guiding principles will be beneficial to the people of Suriname in the quest to improve SSM and SLM efforts and ultimately achieve a land degradation neutral Suriname. 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 Suriname, which provides an examination of the environmental, social, and economic pillars of land degradation in Suriname. The chapter on the innovative financial strategy for the aligned NAP, provides financial information gathered from Suriname as well as other Caribbean countries that are implementing NAPs to provide insights into good practices that Suriname 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

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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 LDN was also endorsed at 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, 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 phenomena, 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 (UNCCD, 2022). 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).

## 1.2. Suriname's Obligations Under the United Nations Convention To Combat Desertification

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Suriname has ratified the UNCCD (6<sup>th</sup> January 2002) and has an obligation under this Convention to coordinate efforts and develop a coherent long-term strategy at all levels. As part of Suriname's obligation, Suriname 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 combat 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 Suriname

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Suriname 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. Despite Suriname efforts to commence the development of a NAP in 2006, the NAP is still in a draft phase and requires further elaboration. The working draft identifies some measures to strengthen the

institutional framework but falls short on clear roles and responsibilities among the requisite institutions. Additionally, there are limited financial resources to continue the drafting of the NAP. Hence, the country lacks an action programme as a framework for combating land degradation, drought, and underlying processes. This absence of an overarching strategic framework at the national level, presents a lot of challenges in the quest to curb issues related to land degradation. Recognizing these shortcomings, Suriname undertook a process to develop an aligned NAP through a consultancy under the direct supervision of the Partnership Initiative for Sustainable Land Management (PISLM). The goal is to strengthen the implementation of SLM, SSM and LDN across Suriname.

#### 1.4. UNCCD 2018-2030 Strategic Framework

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The alignment of Suriname's NAP to the UNCCD 2018 – 2030 Strategic Framework will steer Suriname along an LDN path, in the quest to achieve SDG 15 by 2030. The aligned NAP provides 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. 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.



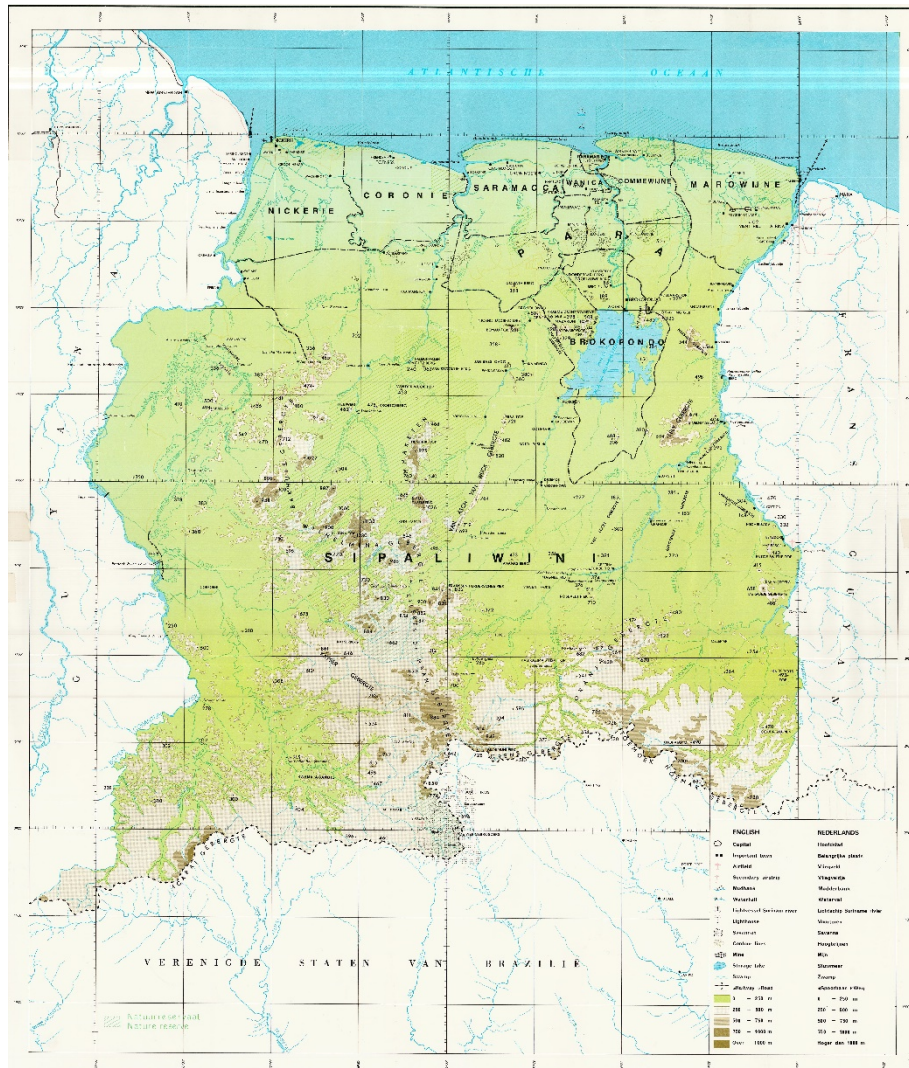
## Chapter 2: **General Physical Information**

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### 2.1. Location And Land Area

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Suriname's land territory covers 163,820 km<sup>2</sup> and is situated on the northern coast of South America, bordering Guyana to the west, Brazil to the south, and French Guiana to the east (Fig. 1). Suriname constitutes rich natural resources and biodiversity within its 93% forested area. Approximately 80% of Suriname 616,500 inhabitants live in and around the capital city of Paramaribo near the mouth of the Suriname River and in smaller settlements in the coastal lowlands (General Bureau for Statistics, 2022). The country is divided into five main geographical regions: Coastal zone, Young Coastal Plain, Old Coastal Plain, Savannah Belt and Interior. Each one of these areas has a unique ecology with different economic development issues and land degradation processes. In addition, Suriname's economy is mostly dependent on natural resources (Republic of Suriname, 2020).



**FIG. 1.** Map Of Suriname (Ministry Of Spatial Planning And Environment).

## 2.2. Geology

Geologically Suriname can be divided into two parts, i.e., the Precambrian Guiana Shield and the Sedimentary Coastal Belt. Most of Suriname belongs to the Precambrian Guiana Shield. The main geological formations of the Guiana countries consist of rocks of the Pre-Cambrian Guiana massive. This crystalline basement occupies about 85% of the surface area of Suriname and underlies the younger deposits of the Coastal Belt to the North. The younger deposits form a sedimentary coastal belt and extend on the Continental Shelf, filling the Guiana Basin. The coastal belt of Suriname is constituted by three main geographical zones, namely (i) The Young Coastal Plain, (ii) The Old Coastal Plain, and (iii) The Savannah Belt (Zanderij or Cover Landscape) (Government of the Republic of Suriname, 2023).

The Young Coastal Plain and the Old Coastal Plain consist of marine, littoral and shallow water deposits. These morphographic units are situated stepwise one above the other with boundaries running approximately parallel to the present shoreline. They are distinctly different as it relates to lithology, hydrology, vegetation, and soils. The Savannah Belt is the result of the severe erosion of the Guiana Shield in the Tertiary Period. Alluvial fans have been deposited, which were largely covered by marine sediments later on. The highest parts of the alluvial fans still occur at the surface. These relatively thin deposits cover the Guiana Shield as a blanket (Government of the Republic of Suriname, 2023).

### 2.3. Soils

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The Young Coastal Plain borders in the North on the Atlantic Ocean and in the South to the Old Coastal Plain (Fig. 2). From East to West its width increases from 10 to 40 km. The altitude varies from 0-2 m above mean sea level. The oldest part of the Young Coastal Plain was formed during a transgression period (pyrite rich soils); while the younger parts were deposited during a period of a rather constant sea level (little pyrite) (SBB, 2003). As a consequence of the processes of sedimentation and soil formation various soil types occur in the Young Coastal Plain, ranging from sand (shell), clay (ripened and unripe) to peat. In several parts the clay plain is intersected by low, narrow sand ridges, and locally by ridges consisting mainly of shells and shell fragments. The maximum thickness of the sand deposits ranges from 1.10 to 6.70 m. With the exception of variable pH (4.5-6.5) the clay soils in general have moderate to poor physical properties (e.g., low permeability) (Government of the Republic of Suriname, 2023).

The Old Coastal Plain with a width of about 20 km lies 2-10 m above the mean sea level. It borders in the South to the Savannah Belt. The northern part of the Old Coastal Plain, known as the Lelydorp Landscape, consists of a complex of eroded sand ridges. The southern part of the Old Coastal Plain, the Para Landscape is a dissected plain of silt loams and silty clays. The individual surfaces are sometimes separated by narrow swamp zones, varying greatly from one to some thousands of hectares. The erosion gullies of the Para Landscape are to a certain extent filled up with greyish soft clays (Mara deposits). The sandy soils of the

Lelydorp Landscape have moderate to poor chemical properties and good to poor physical properties, while the silt loam and silty clay soils of the Para Landscape a rather poor chemical (low pH and poor fertility) and physical properties (low permeability) (Government of the Republic of Suriname, 2023).

The Savannah Belt has been formed due to severe erosion of the Guiana Shield in the Tertiary Period and the deposition of the eroded material as alluvial fans. Later on these fans were largely covered with marine sediments. It occupies a more or less continuous belt along the full width of Suriname, with an estimated area of about 875,000 hectares. The Belt is a dissected plain, 5-10 km wide in the east and 60-70 km in the west, with elevations varying from about 10 m in the north to 50 m in the south, consisting mainly of sandy to sandy loam and sandy clay loam soils. The soils of the Savannah Belt are subdivided in bleached and unbleached soils. The bleached soils consist of more than 90% silica ( $\text{SiO}_2$ ). These soils were formed due to strong podsolization resulting in deeply bleached horizons of coarse sands. They are extremely infertile and very susceptible to drought. The unbleached soils consist of sandy loam to sandy clay loams, with some occurrence of brown sands. The topsoils are generally lighter textured than the subsoils. From a chemical point of view these soils are very poor and the physical properties (e.g., permeability and rootability) are however moderate to good (Government of the Republic of Suriname, 2023).

Approximately 80% of the land area of Suriname consist of the Interior Uplands. The soils of the Interior Uplands, also known as the Residual Soils, are deeply weathered products (residues) of the Precambrian Guiana Shield. The parent material is primarily metamorphosed igneous and sedimentary rock. The Interior Uplands have elevations varying from 50 to about 1,280 m above sea level. The topography is mainly hilly, undulating to steep, with generally well-drained, reddish brown and yellow coarse sandy loam soils (Table 1). Bleached soils do also occur locally on poor sandy parent material. Shallow gravelly soils also do occur on steep slopes. The occurrence of iron and quartz gravel in the soil profile, especially on hilltops is evident. Generally, the soils have a low chemical status i.e., poor fertility due to nearly absence of nutrients (SBB, 2003).

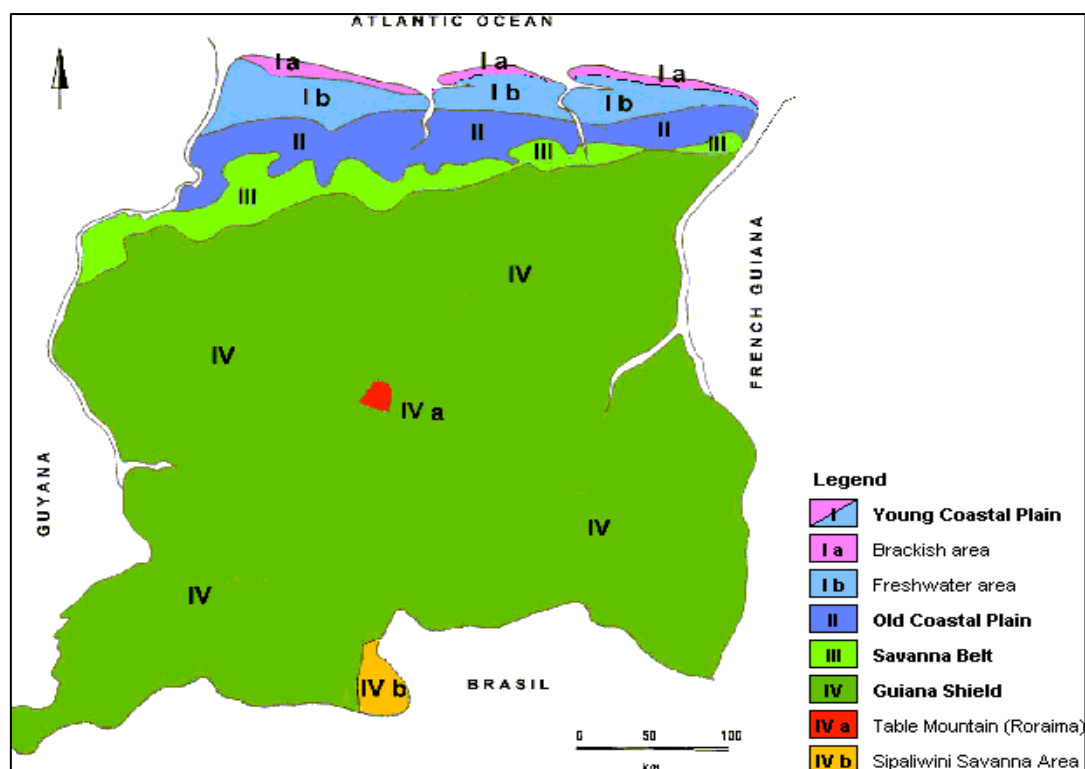


Fig. 2. Geomorphological zones of Suriname (SBB, 2003).

TABLE 1. Major Land Zones Of Suriname (, 2003).

Geomorphological Zone	Area (km <sup>2</sup> )	Elevation above sea level (m)	Land characteristics
Coastal Lowlands			
Young Coastal Plain I a Brackish area I b Freshwater area	12,000	0-4	Holocene deposits. Recent clay flats (former coastal mudflats) are dissected by up to 4 m high shell and sand ridges (former beaches)
Old Coastal Plain	10,000	4-10	Pleistocene sandy ridges and clay islands interspersed by Holocene clay and peat soils
Savannah Belt	10,000	10-50	Tertiary formations of rolling and dissected plains,

<b>Geomorphological Zone</b>	<b>Area (km<sup>2</sup>)</b>	<b>Elevation above sea level (m)</b>	<b>Land characteristics</b>
			unbleached loam and coarse white sand of continental origin
<b>Interior Uplands</b>			
Guiana Shield include Table Mountain (IV a) and Sipaliwini Savannah Area (IV b)	134,000	50-1,230	Precambrian Guiana Shield hills and mountains. Most sandy clay loam and clay soils, often gravely or stony. Locally ironstone and bauxite caps

#### 2.4. Climate

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Suriname is located in the tropical part of South America and is characterized by a large variability in rainfall between years and decades, high average rainfall, high temperatures year-round and high relative atmospheric humidity. Suriname climate is partly regulated by the rainforest through evapotranspiration and partly controlled by the position of the Intertropical Convergence Zone (ITCZ). The ITCZ is a low-pressure region that produces much rain, located where the northeast and southeast trade winds converge. The position of the ITCZ is influenced by oceanic-atmospheric processes. These processes are caused by the variability in sea surface temperatures in the Atlantic and Pacific oceans (Government of the Republic of Suriname, 2023).

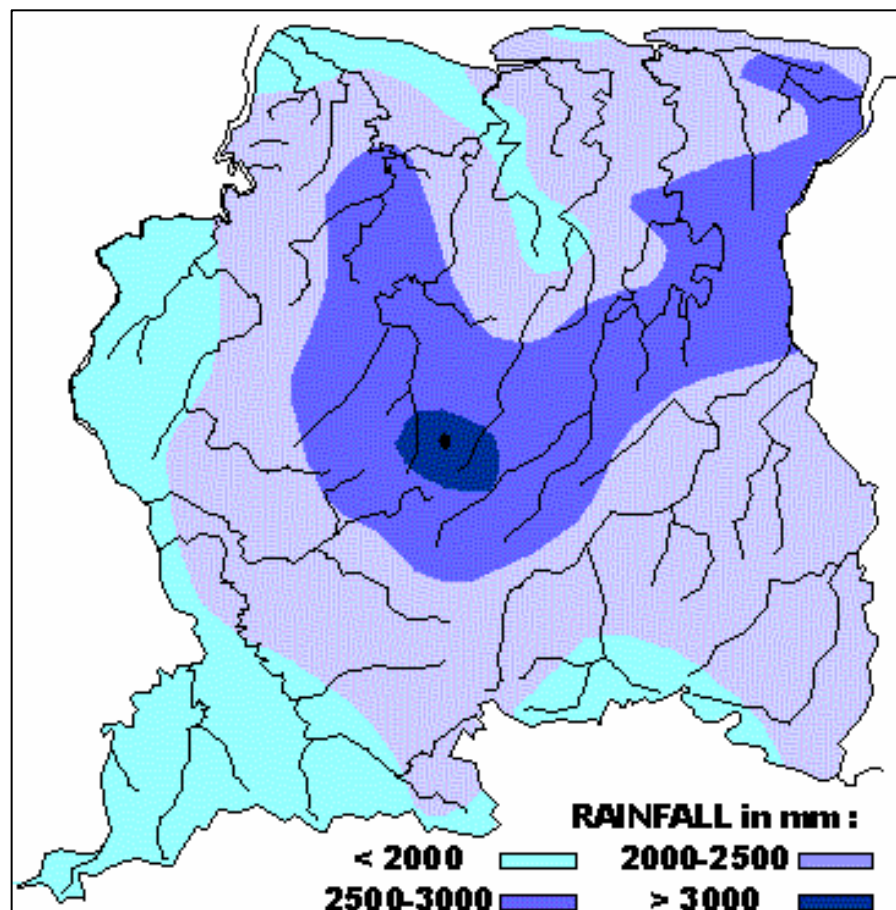
#### 2.5. Rainfall

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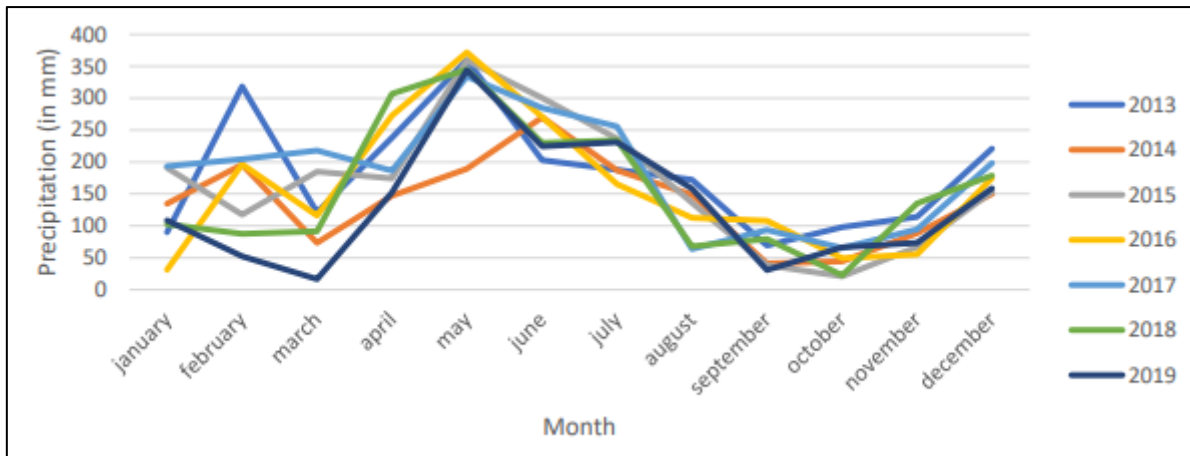
Rainfall distribution patterns also vary across the land area of Suriname from less than 2000mm to more than 3000mm (Fig. 3). The annual northward and southward displacement of the ITCZ, results in two dry and two wet seasons in Suriname. There is a short rainy season from early December to late January; a short dry season from early February to mid-April; a long rainy season from mid-April to

mid-August; and a long dry season from mid-August to early December. The seasons are not as regular as indicated above. In particular, the short rainy season and the short dry season show considerable variability in rainfall, which has resulted in either prolonged wet periods (absence of short dry season) or prolonged dry periods (absence of short rainy season) (Government of the Republic of Suriname, 2023).

The months with the lowest amount of rainfall are September and October, while the months with the highest amount are May and June (Fig. 4). The average yearly precipitation over the period 2013 – 2019 was about 1900mm, with 20-108mm on average during the driest months and 202-372mm during the wettest months (Government of the Republic of Suriname, 2023).



**Fig. 3.** *Distribution Pattern Of Rainfall Across The Land Area Of Suriname (Government Republic Suriname, 2023).*



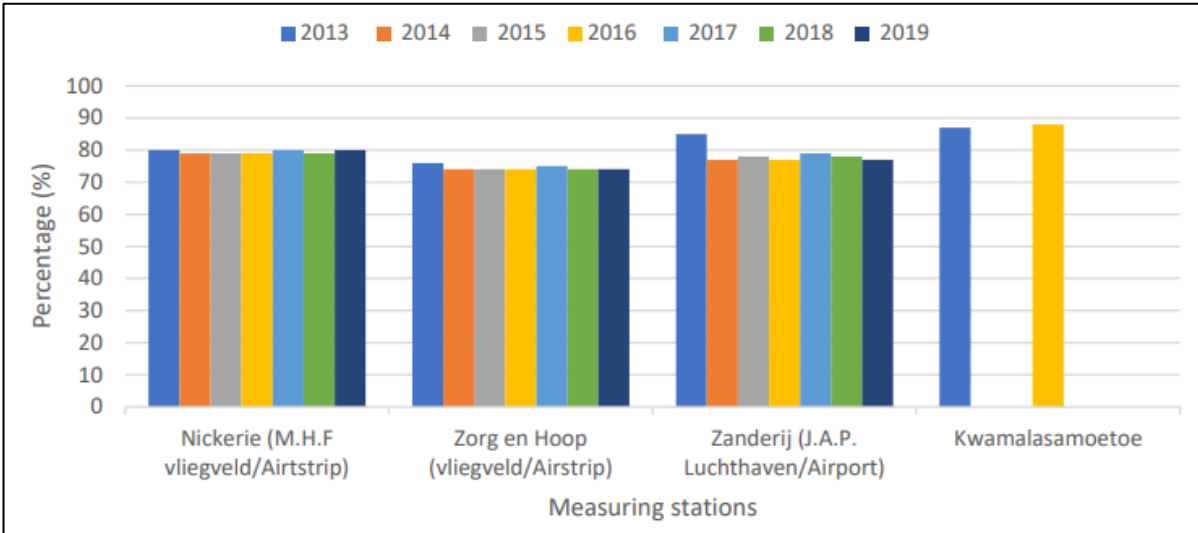
**Fig. 4.** Monthly average rainfall for the period 2013-2019 (Government of the Republic of Suriname, 2023).

## 2.6. Temperature

The average temperature at 06.30 hrs. is between 21°C and 24°C based on measuring stations at the airstrip in Nickerie and the airport at Zorg and Hoop. Temperatures around noon are the highest and are on average between 31°C and 34°C. The average annual temperature in 2021 was 27.6°C with an average minimum temperature of 24.2°C and an average maximum temperature of 30.9°C. In 2021, January was the coldest month with an average of 26.6°C and September and October were the warmest months with an average of 28.4°C (General Bureau for Statistics, 2022; Government of the Republic of Suriname, 2023).

## 2.7. Humidity

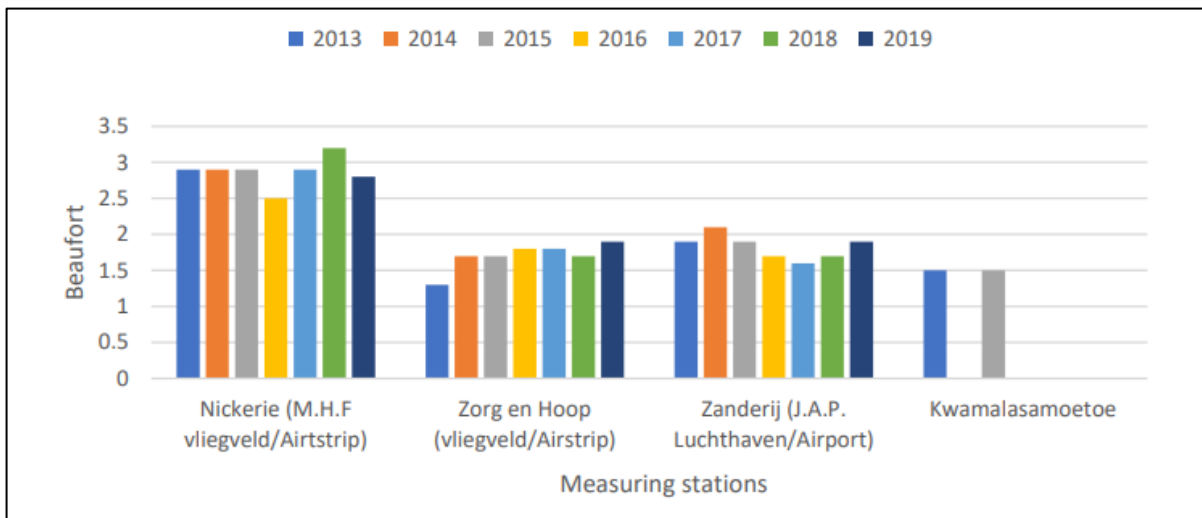
Suriname has a high atmospheric humidity. An ambient relative humidity between 80% to 90% is quite normal in Suriname. The average humidity for the period 2013 – 2019 was between 74% and 80% (Fig. 5). During the night, the relative humidity may reach about 95%, while some hours in the afternoon it drops to 68% in June and to 53% in October. The high relative humidity may lead to hazy conditions and sometimes even fog during the late night and early morning. This is particularly the case in the period October-January. In the forest area air humidity depends, among others, on the penetration of sun radiation (Government of the Republic of Suriname, 2023).



**Fig. 5.** Relative humidity in Suriname at certain measuring stations for the period 2013-2019 (Government of the Republic of Suriname, 2023).

## 2.8. Wind

The trade winds moved in a northeastern and southeastern direction, with an average velocity between 1.3 – 3.2 Beaufort for the period 2013-2019. An overview of the average wind velocity for the period 2013-2019 is presented in figure 6. From north to south, the measuring station in Nickerie is the closest station to the ocean followed by Zorg en Hoop, Zanderij and Kwamalasamoetoe. This station also has the highest recorded values for wind velocity (Government of the Republic of Suriname, 2023).



**Fig. 6.** Wind velocity in Suriname at certain measuring stations for the period 2013-2019 (Government of the Republic of Suriname, 2023).

## CHAPTER 3: Land Assessment Information on The State of UNCCD Implementation in Suriname

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Emanating from the thirteenth session of the Conference of Parties (COP. 13), several decisions were taken in relation to the challenges of DLDD at the global level. 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 Suriname'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. Through Suriname'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 And Socio-Economic Baseline Information On Dldd

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#### ***Biophysical Baseline Information***

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. 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).

Ecosystem diversity in Suriname is high in many areas, especially those areas where the Coastal Plain, Savannah Belt and Interior are in contact with each other. Suriname's enormous biodiversity is relatively well studied for certain groups of organisms. However, large areas of the Interior, including the mountain ranges, remain completely unknown for their flora, fauna, ecosystems and ecological relations. The number of species of flora and fauna in Suriname is estimated at 670,000. Approximately 9,600 are known of which an estimated number of 75 are endemic. According to the Forest Sector Environmental Assessment and Action Plan of 2003, Suriname is also rich in wildlife, including at least 185 species of mammals, 668 bird species, 152 reptile species, 95 species of amphibians, and 790 marine and freshwater species. Of these 1,890 identified species of vertebrates, approximately 36 species or 2% (mainly freshwater fishes) are endemic to Suriname. The data of the invertebrate fauna is still very incomplete, and inventories routinely reveal many new species (Government of the Republic of Suriname, 2023). The habitat of these species is threatened by DLDD. Suriname's rich biodiversity is also linked to the Guiana Shield, a geomorphologic complex that is extremely rich biologically, located in northeastern South America (Fig. 7). The variety of landscapes of the Guiana Shield

includes coastal swamps, granite inselbergs, isolated mountain ranges, lowlands with numerous rivers, sandstone tepuis, seasonally flooded tropical savannas and white sands, each supporting a characteristic vegetation. This variety accounts for a great deal of the high diversity and endemism of the Shield's biota. The highlands of the Shield have flora and fauna with numerous endemic species that strongly depend on habitat for survival; hence the importance of curbing DLDD (Ministry of Natural Resources & Foundation for Forest Management and Production Control, 2006).



**Fig. 7.** Guiana Shield region.

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 desertification in a given baseline year and provide 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 or desertification indicators. The components of a DPSIR framework in the context of Suriname include:

- Driving Forces: absence of a National Land Policy, 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 and access to international markets (through the Suriname Agriculture Market Access Project), 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 as well as the Suriname Agriculture Market Access Project (SAMAP).

Based on this framework analysis, land degradation is not a widespread phenomenon in Suriname relative to many other countries, particularly those in Sub-Saharan Africa. Available evidence suggests that land use activities such as agriculture, logging, mining and settlement expansion and growth in rural and urban areas primarily accounts for land degradation in Suriname. Of these land use

activities, mining seems to have the most severe and visible impact on the environment. This is due in part by the nature of the activity but also the large numbers of persons engaged in mining and some legal and institutional limitations that prevail in the sector (Republic of Suriname, 2020).

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, in 2020, the Land Degradation Neutrality (LDN) target setting programme in Suriname, validated the use of remote sensing data to develop a land degradation baseline, using available global data sets for the three agreed indicators (land cover, land productivity, and soil organic carbon) and national expertise (Republic of Suriname, 2020). Land degradation is characterized by the reduction and loss of the biological and economic productive capacity of the land. The government of Suriname has recognized that sustainable land management and the reclamation and rehabilitation of degraded lands is very critical in Suriname, a country considered a “high forest-low deforestation” country. Actually, the country had a low deforestation rate in 2022 according to the Global Forest Watch data (<0.1%), relative to other forested countries (Global Forest Watch, 2022). However, over the years, using the 1990's as a reference level, national rates of deforestation and land development for various purposes and hence land degradation, –while still low, have increased, more so within the last five years and mainly due to mining to sustain livelihoods. Suriname has a forest cover of 93% of the national territory and is one of the most forested countries on earth with less than 0.1% deforestation. This categorizes Suriname as a High Forest and Low Deforestation (HFLD) country. The definition of ***‘forest’*** that is used by Suriname's Forestry Department for the estimation of the forest reference emission level (FREL) in Suriname is: ***“Land mainly covered by trees which might contain shrubs, palms, bamboo, grass and vines, in which tree cover predominates with a minimum canopy density of 30%, a minimum canopy height (in situ) of 5 m at the time of identification, and a minimum area of 1.0 ha”*** (Government of the Republic of Suriname, 2023). 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
- Enhancing forest carbon storage through sustainable forest management, establishment of a National REDD+ Strategy and reduction in illegal logging
- Rehabilitation of degraded areas.

Suriname is endowed with a rich natural resource base, particularly renewable natural resources i.e., resources suitable for sustainable economic use, such as forestry, agriculture (horticulture), animal husbandry, water management, among others. There are also substantial reserves of petroleum, gold, granite and other minerals. In addition to this, Suriname has a considerable potential of hydroelectric power. These sectors have traditionally served as the pillar of Suriname's socioeconomic development (Republic of Suriname, 2020). With the rapid upsurge in economic activity, such as agriculture, mining and logging, and with due consideration to the development of the oil sector, land degradation has been accelerating in Suriname. The Government of Suriname 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.

### **Socio-economic Baseline Information**

The focus and backbone of the socioeconomic dynamism is situated in the coastal zone of Suriname (Table 2). The major part of the various economic activities in production, manufacturing, horticulture, agriculture, financial and banking services, and government (public) services are located here. The development of one of the main economic sectors, i.e. the agricultural sector is currently benefiting from the Suriname Agriculture Market Access Project, which aims to help farmers get access to the international market and enhance the output, competitiveness and safe production of selected crops by creating an enabling environment and enhancing the capacities of the private sector and institutions. However, high nominal interest rates as well as exchange regulations adversely affect the sector (Republic of Suriname, 2020). Based on recent studies that focus on the economics of DLDD the socio-economic impacts results in the global economy losing up to 5% of total agricultural GDP due to land degradation, costing some USD 490 billion per year (UNCCD, 2013). Avoiding land degradation through SLM can generate up to USD 1.4 trillion of economic benefits. The direct economic costs of land degradation vary widely at the country level, with some countries experiencing even higher losses as compared to others.

**Table 2.** Area occupied for key economic activity in Suriname (Factor, 2020).

<b>Ecological Zones</b>	<b>Area (km<sup>2</sup>)</b>	<b>Key economic activity</b>
<b>Ocean Zone</b>	75,000	Navigation
<b>Continental Shelf</b>	65,000	Fisheries Navigation Oil exploration/exploitation
<b>Young Coastal Plain</b>	12,000	Urban development

		<ul style="list-style-type: none"> <li>Industry</li> <li>Agriculture</li> <li>Oil distribution, exploration, and refinery</li> <li>Construction materials</li> <li>mining</li> <li>Forestry</li> <li>Energy</li> <li>Hunting</li> </ul>
<b>Old Coastal Plain</b>	10,000	<ul style="list-style-type: none"> <li>Forestry</li> <li>Hunting</li> </ul>
<b>Savannah Belt</b>	10,000	<ul style="list-style-type: none"> <li>Forestry</li> <li>Construction materials</li> <li>mining</li> <li>Hunting</li> </ul>
<b>Interior</b>	136,000	<ul style="list-style-type: none"> <li>Hunting</li> <li>Gold mining</li> <li>Energy</li> <li>Forestry</li> </ul>

SLM is a wise investment for economic growth that does not compromise resilient livelihoods. Balancing the biological and economical potential of land is key to safeguarding and managing the quality of the land. The alignment of Suriname's NAP to combat land degradation coupled with the LDN-TSP and other national policy initiatives promotes an enabling environment for sustainable and climate-resilient land development, management and reclamation.

Globally, it is estimated that desertification is threatening the livelihoods of 1 billion people in over 100 countries, and each year 12 million hectares of arable land are lost to drought. The extent and severity of land degradation worldwide combined with the negative effects of climate change, population growth and an ever-increasing demand for natural resources requires immediate and assertive action (GEF, 2022). Economic systems are disrupted by drought, which occurs in Suriname 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 Suriname 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 Suriname's reporting on Strategic Objective 2 (to improve the living conditions of affected populations) at the national level.

Land provides valuable ecosystem services for human well-being, but land degradation leads to a reduction in the provision of these services with significant social and economic costs to the country. This sort of decline takes on different forms such as decline in carbon sequestration capacity, food availability, groundwater recharge, soil fertility, wood production, among others. Land degradation often stems from land-use decision-making processes driven by high market prices of specific ecosystem services such as food. In this context, land-use decisions may largely neglect the significance of other ecosystem services for which no markets exist, but which are also of high value to the society. Given the significant economic burden of land degradation, research has also focused on the study of the costs of action against land degradation through restoration and sustainable land management practices. These costs of action are often compared to the costs of inaction, where the latter is derived from the projection of past degradation rates to the future. Achieving LDN will not only improve livelihood and contribute to food security in Suriname but also improve the country's GDP and economic well-being relative to the people living in affected areas.

Deforestation, biodiversity loss, land degradation, and water stress and contamination have debilitating effects on the economic and social well-being of Suriname. 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 (Republic of

Suriname, 2020). 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. 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).

Natural disasters most common in Suriname in the period of 2015-2017, include Sibibusi (strong winds associated with heavy rains) that usually occur during thunderstorms and flooding of the urban coastal plain, rural coastal area and the rural Interior. These natural disasters caused damage to properties, e.g., houses (roofs) and other buildings (e.g., schools), electricity distribution networks, urban vegetation (trees) and other structures. In the aforementioned period, nine (9) Sibibusi's were reported in the coastal area, one of which resulted in flooding of some areas in Paramaribo. In total, five people were badly injured and one person died as a result of these natural disasters. The total number of persons directly affected by these disasters in 2015-2017 was respectively, 210, 69 and 52. The estimated damage amounted to SRD 900,260, SRD 221,454 and SRD 191,155 for this specific period. It is expected that climate-related disasters will increase, due to the frequency and intensity of extreme weather events, while the population is concentrated in low-lying coastal areas and defense infrastructure is lacking (Government of the Republic of Suriname, 2023). The absence of spatial data as well as outdated legal framework poses constraints to proper spatial planning in Suriname. In addition, public spaces like gardens, squares, schoolyards, open-air museums, roadsides, playgrounds, and lots on which state buildings are located are generally free domain, making them prone to potential issuance to private persons or entities. Low-lying areas along the coast and rivers are

vulnerable to flooding because of sea-level rise, heavy rains, poor drainage and other infrastructural defenses and mangrove deforestation. This poses a threat to both urban (housing, businesses, government offices, other facilities, etc.) and rural areas (e.g., agricultural areas). Zoning plans are therefore important. This needs to occur based on a pre-determined pattern, which considers, among others, the natural environment, environmental impacts, availability of jobs and livelihoods, transport and climate change (Government of the Republic of Suriname, 2023).

To date Suriname has been able to attract some compensation for forest carbon services through a payment for ecosystem services (PES) scheme. Suriname is participating in the UNFCCC REDD+ programme. Given the high stores and flows of fresh water, it may also be worthwhile to consider bio-bundling of fresh water with forest carbon services. Such support ensures that Suriname as a whole, and locally effected populations in particular, benefit from efforts to maintain and increase the global contribution of Suriname's ecosystem services (Republic of Suriname, 2020). 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 (mined out areas) 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.

### ***Priority actions to address DLDD in Suriname***

The development of a Geospatial Data Intelligent Hub (will be launched in October 2024) through the Ministry of Spatial Planning and Environment will enhance the monitoring of DLDD. The Study and data collection for the Geospatial Data Intelligent Hub has already started and to date 1245 of 3200 maps were digitalized. Capacity will be built 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.

### 3.2. Drivers And State of Land Degradation

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The Surinamese natural resource endowment has been threatened by a progressive pattern of land degradation that could curtail ecosystem services and functions. Deforestation is most prevalent in riparian areas and areas along major forest trails, which are impacted by land clearing for gold mining and human settlements. The ensuing loss of forest cover has resulted in significant habitat loss and fragmentation in ecoregions. Economic activities such as unsustainable agriculture practices and exploitation of mineral resources have further exacerbated land degradation in Suriname (Republic of Suriname, 2020). In other words, unsustainable land use practices serve as strong drivers of land degradation. The main driver of deforestation for the period of 2000-2017 is gold mining, being responsible for 69% of the total deforestation. In addition, infrastructure development is responsible for around 18% of the total deforestation, urban development with 2.8% and agriculture with around 5% have also identified as relevant drivers of deforestation (Fig. 8) (Government of the Republic of Suriname, 2023).

Suriname is highly dependent on the extractive sector, with oil and gold accounting for a large part of the country's export. In 2017, gold accounted for nearly three-quarters of Suriname's exports. Oil is extracted from the Young Coastal Plain, while gold is mined in the hilly Interior. The soil of the Young Coastal Plain features extensive, flat, and low-lying formations of heavy marine clays, usually overlain by a peat layer (pegasse). Exploitation of crude oil, sand and shells is taking place in the northern part of the Young Coastal Plain. The clay flats are locally interspersed by roughly east-west striking ridges of sand with admixtures of shell. The soils of the Old Coastal Plain consist of sand, clay and peat and offer good opportunities for agricultural development, in particular, horticulture (Government of the Republic of Suriname, 2023).

The Surinamese Interior is hilly and mountainous and is mainly composed of weathered and eroded Precambrian rocks with a generally moderately thick regolith layer. Important human activities in this part of the country in the period 2015–2019 are gold and gravel mining. The dependency of mining on hydropower generated electricity and water for processing makes it vulnerable to (seasonal)

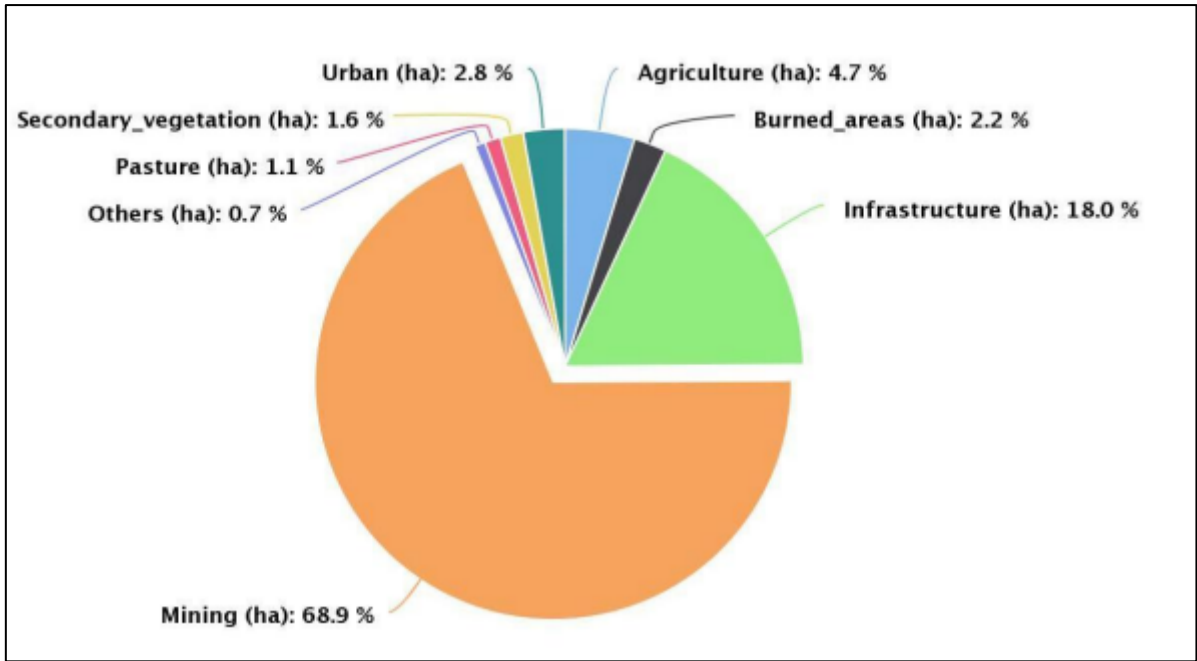
decreased availability of water as a result of climate change (droughts) (Government of the Republic of Suriname, 2023).

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 Suriname. Taking note of such gaps the Ministry of Spatial Planning and Environment commenced policy making for land use planning as well as the law on Spatial Planning. 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, such as in or near prospective mining areas.

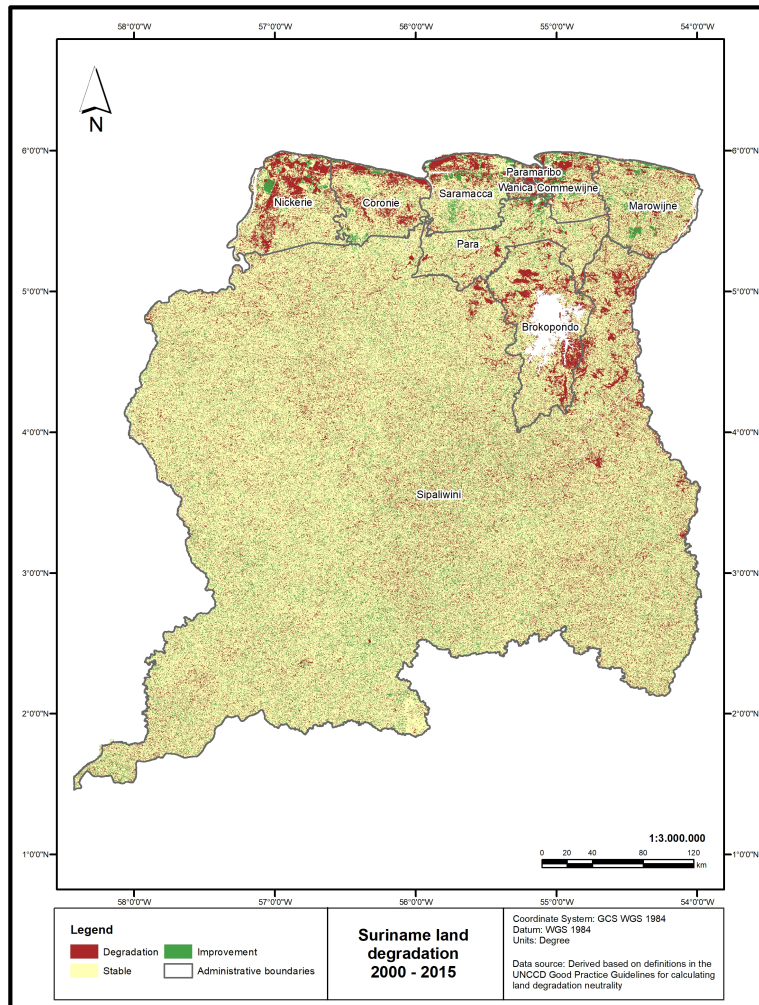
In Suriname, land degradation has been occurring from natural resource utilization and natural disasters such as droughts and floods in sporadic areas. The coastline is prone to erosion, along with saltwater intrusion and flooding, and losses of arable land due to floods and droughts. As part of the LDN-TSP, the assessment of land degradation trends identified areas exposed to land degradation. The identification of these local areas of degradation (i.e. hotspots) is essential for determining follow-up actions through the 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 (Republic of Suriname, 2020). Some of these analysis could be derived through the Caribbean SOILCARE Phase 2 project, where Suriname will participate as a member state (discussions on specific modalities are currently ongoing). Figure 9 shows the locations of specific areas and points across the country, which have been classified as being affected by DLDD. 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 rainfall and hill slopes 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 Suriname is not so severe yet, considering the natural conditions of Suriname. It is however a problem to be aware of. Due to lack of relevant and up to date data concerning land degradation, the following is a straightforward indication of the extent. Nearly in every geomorphological zone there are areas affected by land degradation due to social and economic activities. The expansions of rice fields and withdrawal of freshwater, together with the mining of sand and shell ridges poses a serious threat to the ecosystem of the Young Coastal Plain. The exploitation of crude oil also has a negative impact on these fragile ecosystems. Other forms of agriculture, forestry and urban development are also activities that may cause serious disruption of the natural environment. In the Old Coastal Plain we are confronted with forestry. Mining of construction material and forestry are the threatening activities in Savannah Belt, while the hilly and undulating Interior Uplands are areas susceptible to land degradation due to activities such as forestry, shifting cultivation, gold mining, access road construction, and energy generation (Republic of Suriname, 2020).



**Fig. 8.** Overview Of Deforestation Land Use Land Cover Information For The Period 2000-2017 (Government Of The Republic Of Suriname, 2023).



**Fig. 9.** Areas classified as being affected by DLDD (Republic of Suriname, 2020).

Decisions taken to link the implementation of SDGs in general, was a breakthrough agreement at the 12th session of the Conference of Parties of the UNCCD held in October 2015 in Ankara, Turkey. 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 LDN Target-Setting Programme. This includes countries in the Caribbean that have completed such as Suriname with endorsement by the highest political level. Investment of land has been challenged by balancing utilization and preservation, and as such, Suriname endorsed a National Land Degradation Neutrality (LDN) Target Setting Programme (2020-2030) 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 (Republic of Suriname, 2020). 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.

Historically, the arrival of the Europeans led to the colonization of Suriname and a transition from a largely subsistence economy to a cash economy. This led to the clearing of large areas of pristine forestland for the establishment of plantations, first in the coastal zone and later upstream the rivers Suriname and Commewijne. The aim was to gain maximum profits out of agricultural production. Environment aspects were not considered at that time. This can be marked as the first step of land degradation in Suriname. Following the abolition of slavery in 1863, most plantation slaves moved to the capital city of Paramaribo and to continue plantation production, the colonists were obliged to contract labours from China, India and Indonesia. Due to absenteeism of plantation owners, decreasing market prices for agricultural products and mismanagement, agricultural activities became less profitable. The colonial government then began planning the development of Suriname to the neglect of agricultural development and the focus on the exploitation of natural resources, mainly bauxite and forest. The mining of bauxite started in 1926 and in 1958, the Aluminium Company of America (Alcoa) which mined bauxite in Suriname, signed the Brokopondo

Agreement with the government to develop a hydropower plant (Republic of Suriname, 2020). Even though bauxite mining is not so prevalent at present, it is noteworthy to acknowledge the historical contributions of this mineral to land degradation.

Intensive forest activities started in the 1950s, when a Dutch logging company, Bruynzeel, obtained concessions for wood logging. To enhance the development of the natural resources the government started large scale explorations of forest and mineral resources. This required the opening up of large areas of the interior, which was made possible by constructing roads and airstrips. Forestland had to be converted to other land uses. Sustainable development was not yet a topic in those days, so decision makers were not aware of the steady encroachment of land degradation. Due to the increase of awareness with regard to the negative impact of unsustainable use of natural resources, nationally and internationally, the government is now focusing on the implementation of an integrated national environmental policy in order to incorporate it in the sectoral and national development objectives. The realization of the environmental legislation is in this regard a prerequisite to solve environmental disputes efficiently and effectively. The implementation of Suriname's aligned NAP will supplement ongoing policy efforts at the community and national levels.

Furthermore, the UNCCD provides the global framework for addressing land degradation and sustainable land management issues in Suriname 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 affects thereof (Republic of Suriname, 2020). All stakeholders, inclusive decision makers and technicians have to be involved in this process. One of the key issues is to promote sustainable land and soil management.

Mangrove forests are very important for coastal protection against erosion and sea-level rise, they fulfil the role of a nursery for many coastal and marine fish and shrimp, and they are at the same time important for carbon sequestration. In 2017, mangroves covered approximately 1,100 km<sup>2</sup> of Suriname's coastline and stored about 57.93 Mg C/ha (aboveground). A National Mangrove Strategy was formulated to fill the gaps in existing policies and legislation for conservation of biodiversity and reduction of the impacts of climate change on the coastal areas. The strategy ***“promotes the strengthening of the legal framework (including enforcement) and introduces adaptation technologies to support the sustainable and effective management and monitoring of mangrove ecosystems”*** (Government of the Republic of Suriname, 2023).

First of all, an enabling environment has to be created for the implementation of a sustainable land and soil management and land use policy. Sustainability is the result of the interaction of several forces and factors such as development objectives, social ambitions, and environmental characteristics among others. So the definition of SLM and SSM can differ because of the differing importance laid upon the various factors. The incorporation of the five strategic objectives in keeping with the UNCCD 2018 – 2030 Strategic Framework in the formulation of a sustainable land and soil management and land use policy has to be considered profoundly.

### 3.3. Plans And Programmes Relating to Land Degradation

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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. Consequently, the SNAP is incomplete (Draft of 2006) and is not efficient and effective enough to define roles and responsibilities for other major stakeholder groups (NGOs, producers, national and districts government institutions) in relation to specific functions that are related to the control of land degradation or negotiated as part of an institutional framework. Therefore, it is not possible to establish a long-term and effective program to combat land degradation and drought. Furthermore, there are no articulated action strategies within key stakeholder groups. Following an examination of existing instruments, procedures, and institutional structures for sustainable development in Suriname, key institutional and legal frameworks were identified.

### ***Institutional framework***

The Ministry of Spatial Planning and Environment is responsible for environmental management in Suriname. The National Institute for Environment and Development in Suriname (NIMOS) in collaboration with other governmental and non-governmental bodies and institutions provides a supporting role. Other institutions and stakeholders concerned with the management of the environment in Suriname besides the abovementioned institutions are outlined in table 3.

**Table 3.** Overview of primary stakeholders and their roles.

<b>Stakeholders</b>	<b>Roles</b>
Ministry of Spatial Planning and Environment National Institute for Environment and Development (NIMOS)	National Policy and Planning Environment law enforcement
Ministry of Land Policy and Forest Management	Mapping of all allocated lands for mining, forestry, waterways etc. Management of REDD+ and protected areas

Stakeholders	Roles
Management Institute for Land Registration and Land Information System (MI-GLIS) Foundation for Forest Management and Production Control (SBB) The Foundation for Nature Preservation (STINASU)	
Ministry of Natural Resources	General policy making for natural resources, allocation of mining rights, regulation of informal mining sector
Ministry of Foreign Affairs	International agreements
Ministry of Agriculture, Fisheries and Husbandry	Policy making regarding sustainable agriculture practices
Ministry of Regional Development (local communities) District Commissioners	Policy making for districts planning
Ministry of Trade and Industry	Permits allocation
Ministry of Finance and Planning	Fiscal and financial implementation of government policies
National Planning Office (Stichting Planbureau Suriname)	Coherent descriptions of the socio-economic and macro-economic situations of the country, forecasts, and projections of future situations Monitor Surinamese society and facilitate the national policy agenda towards sustainable development, prosperity and well-being for all citizens

Stakeholders	Roles
Ministry of Public Works	Policy making Maintenance of waterways Permits for buildings and other infrastructural development
The National Herbarium and National Zoological Collection	Research and inventory of biodiversity and ecosystems
University of Suriname and its research institutes (CELOS)	Research on agriculture and forestry
General Bureau of Statistics (ABS)	Provide the Surinamese and international communities with high-quality statistics enabling users to gain an insight into the demographic, economic and socio-cultural situation and development of Suriname
KAMPOS(tribal) and VIDS (Committee of the Heads of villages of indigenous peoples) Amazone Conservation Team Suriname (ACTS)	NGOs on village and community matters
Conservation International Suriname (CIS) World Wildlife Fund (WWF) Suriname	Technical expertise Carbon credits Climate smart forestry Biodiversity

### **Legal framework**

Existing legislations are fragmented and dispersed over various sectors, since they were created to regulate the various sectors but not to accommodate environmental and land management sufficiently and integrated. The most important regulatory instruments related to SLM in Suriname include:

- Criminal Law G.B. 1915 no. 77 as amended

- Hindrance Law G.B. 1929 no. 64 as amended
- Water Management Act G.B 1932 no. 32 as amended
- Law on allocation of State Owned Lands 1937 G.B. 1937 no. 53
- Drinking Water Supply Act G.B. 1938 no. 33
- Nature Conservation Act 1954 G.B. 1954 no. 26 as amended
- The Building Codes 1956 G.B.1956 no. 30 as amended in 2012
- Brokopondo Agreement G.B. 1958 no. 4, 7, 8, 9, 10
- Urban Planning Act G.B. 1972 no. 96
- Pesticide Law G.B. 1972 no. 151
- Planning Act 1973 G.B. 1973 no. 89
- Government Decree on Pesticides G.B. 1974 no. 89
- Law on Ecological Circumstances in Residential Areas S.B. 1980 no. 68
- Ports Authority Decree 1981 S.B. 1981 no. 86
- Decree Multi-Purpose Corantine Project-Management S.B. 1984 no. 14
- Mining Decree 1986 S.B. 1986 no. 28
- Petroleum Law 1990 S.B. 1991 no. 7
- Forest Management Act S.B. 1992 no. 80
- Gross Rosebel Agreement S.B. 1994 no. 22
- Government Decree on Nature Protection (1998), establishing the Central Suriname Nature Reserve

Suriname became a signatory to the UNCCD in 2000. In 2002, Suriname completed its first National Report on the Implementation of UNCCD. Subsequently, in 2006 the SLM project was created as one of the obligations under the UNCCD. Through the current NAP alignment process to the UNCCD 2018-2030 Strategic Framework, Suriname would be able to identify measures to strengthen the institutional framework with clear roles and responsibilities among the institutions and formulate a structured framework for combating land degradation, drought, and underlying processes.

## CHAPTER 4: Innovative Financial Strategy for Aligned National Action Programme

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*This chapter is based on financial information gathered from Suriname 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.

Suriname 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.

### 4.1. Global Environment Facility

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The financing environment has changed profoundly within the last two decades. With the Global Environment Facility (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 for the UNCCD 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 Suriname 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 Suriname 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 Suriname, 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 International Fund for Agricultural Development (IFAD), the World Bank, Food and Agriculture Organization of the United Nations (FAO), United Nations Environment Programme (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 (inclusive of Suriname) 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 Suriname 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 Suriname 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.

#### 4.2. Resource Mobilization

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Resources could be mobilized through potential domestic, external and innovative sources of financial resources. Suriname'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 Suriname 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 pre-requisites and conditions, there remain several similarities among them. A number of strategic actions could be taken in Suriname 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 World Bank, European Union (EU), International Fund for Agricultural Development (IFAD), Inter-American Development Bank (IADB), Islamic Development Bank (IsDB), 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.

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 Suriname 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 Suriname. 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 National Technical Working Group.
- Donors should consider matching-funding and sharing with the Surinamese private sector and Surinamese 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 Suriname 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 International Fund for Agricultural Development (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 8<sup>th</sup> Focal Area, supports these activities by delivering financial support. The World Bank and the Inter-American Development Bank (IDB) are important sources of finance (including loans, grants and technical assistance) for development projects in Suriname.

### ***Domestic sources of funding***

The government of Suriname considers domestic sources of funding to be the 'first door of financing' for any program or project in combating land degradation and

promoting SLM. 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 Suriname'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 and Planning, 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 Spatial Planning and Environment, Ministry of Agriculture and Fisheries and Husbandry, Ministry of Land Policy and Forest Management, National Institute for Environment and Development (NIMOS), Management Institute for Land Registration and Land Information System (MI-GLIS), Foundation for Forest Management and Production Control (SBB), The Foundation for Nature Preservation (STINASU), and Ministry of Natural Resources 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 SLM 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
- Co-operating with NGOs in the area of financing
- Accessing funds from relevant international agencies including UNCCD, GEF, UNEP, and the UNDP
- Co-operating with traditional donor partners including Canada, Inter-American Development Bank (IADB), Islamic Development Bank (IsDB), and European Union (EU)
- 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.

#### 4.3. Partnership Building and Technology Transfer

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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 District Commissioners, the Foundation for Nature Preservation (STINASU), KAMPOS(tribal) and VIDS (Committee of the Heads of villages of indigenous peoples), and the Amazone Conservation Team Suriname (ACTS). Working with these local organs creates valuable opportunities to establish relationships with a wider network across Suriname, the Caribbean region, and globally.

Collective land rights and indigenous-led environmental management are critical pillars in the protection of biodiversity, tropical forests, and ancestral territory. For indigenous peoples, territory is essential to cultural and physical wellbeing - intricately linked to food production, medicine, and spirituality. Beyond being core to indigenous identities and ways of life, forests are better protected when under indigenous management, oftentimes having lower rates of deforestation than national parks. ACTS is working at the grassroots level with indigenous communities of Suriname, and at the institutional level with governments, to secure recognition of indigenous-led environmental management and collective land rights.

### ***National level***

National partnerships serve to build strategic alliances at the policy level. The National Institute for Environment and Development in Suriname (NIMOS) serves as an independent, technically competent, professional and progressive partner in the regulation and structuring of the various sectors in charge of the environment. NIMOS provides data and information on various focal areas, including air, biodiversity, chemicals and hazardous waste, water, waste, and land. Since 2013, NIMOS has been leading several activities to prepare the Surinamese state and all stakeholders for the implementation of the Minamata Convention on mercury at the national level. In 2018, the Minamata Convention on mercury was entered into force for Suriname and to present day Suriname has completed several key documents in keeping with their obligations under this Convention – Suriname – Notifications (Article 7.3, 17.4, 30.4, 30.5); First national reports (2019, 2021); and Minamata Convention Initial Assessments. NIMOS is also collaborating with the

Ministry of Natural Resources and the UNDP on projects such as **“Artisanal and Small-Scale Gold Mining (ASGM) National Action Plan (NAP) for Suriname”** and **“Improving Environmental Management in the Mining Sector of Suriname, with Emphasis on Gold Mining”**. These projects seek to reduce, and where feasible, eliminate mercury use in artisanal and small scale gold mining in Suriname. Partnerships with National institutions and Conservation International – Suriname and World Wildlife Fund – Suriname 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 New Partnership for Africa's Development (NEPAD) is a perfect illustration. It is an initiative based on an integrated and comprehensive vision and strategic framework for development. Partnerships between different African stakeholders are the established mode of functioning for development activities on the African continent. Initiatives of this nature could be better emulated across the Caribbean region, with far reaching benefits for Suriname 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 Suriname 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.

## 4.4. Action Plan for The Innovative Financial Strategy

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The Action Plan for the Innovative Financial Strategy summarizes the main interventions to reach the outcomes and outputs of the strategy (Table 4). 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. Estimated cost and timelines are also identified to achieve targets.

**Table 4.** *Logical framework for the development of an Innovative Financial Strategy in support of Suriname's Aligned National Action Programme to Combat Land Degradation.*

Consolidation Track	Indicator	Target	Challenges/ Barriers	Phase / (USD)
<b>1. Policy and Governance</b>				
To improve the institutional capacity and the collaboration between governmental agencies	Reinforcement of intra and inter-governmental coordination	(i)To allocate new resources (ii)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 \$200,000
To conduct staff training in the areas of Remote sensing; Geographic Information System (GIS);	Staff expertise in state-of the-art geological-data management technologies	To improve staff expertise and build-up resilience	Remaining at a sub-optimal level of staff training and accumulate delays	Phase 1-2 (3 years)  Estimate of \$500,000

Consolidation Track	Indicator	Target	Challenges/ Barriers	Phase / (USD)
Multi Criteria Decision Analysis; Information management systems				
To mainstream DLDD into relevant national policies, strategies and plans	Efficiency of knowledge sharing systems, information flow, consistency of the body of national policies	(i)To set up websites, training, and the distribution of reports to relevant agencies (ii)To enable the National Focal Point to share relevant DLDD information products with stakeholders at the national level (iii)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 \$80,000

Consolidation Track	Indicator	Target	Challenges/ Barriers	Phase / (USD)
To finalize the National Land Policy or Sustainable Land Management policy	Overarching policy for SLM	(i)To establish an authoritative policy advisory body for SLM (ii)To mainstream SLM within government agencies	Unfulfilled SLM policy	Phase 2-4 (1 year)  Estimate of \$50,000
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 \$50,000
<b>2. Capacity Building, Awareness, and Training</b>				
To strive for a mainstreaming of SLM within educational establishments	Constituency-level monitoring of land degradation	(i)To improve and enhance the knowledge base on SLM	Lack of SLM information and knowledge in the education establishments for future land users/managers	Phase 1-3 (7 years) Estimate of \$220,000
To enhance the knowledge and capacity of land users to perform		(ii)To improve capacity-building		Phase 1-2 (1-5 years) Estimate of \$600,000

Consolidation Track	Indicator	Target	Challenges/ Barriers	Phase / (USD)
ecologically appropriate land restoration		among direct land users	Damage at the micro-level	
To acquire the capacity to cascade regional (international) forecasts of Drought Early Warning Systems (DEWS) to the national context and analytical capacity of staff working on DEWS	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 \$90,000
To conduct awareness of, and training in, specialized areas such as the process of dealing with	Environmental readiness and preparedness	To improve capacity-building on environmental readiness and preparedness	Apathy to risk of drought	Phase 1 (1 year)  Estimate of \$100,000

Consolidation Track	Indicator	Target	Challenges/Barriers	Phase / (USD)
drought in order to develop appropriate actions in case of unforeseen occurrence				
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 all agencies under the Ministry of Spatial Planning and Environment 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 \$100,000
<b>3. Research and Development</b>				
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 \$150,000

#### 4.5. Barriers To Implementing the Innovative Financial Strategy For Sustainable Land Management

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Accessibility to funding is a major constraint in project preparation and project execution in developing countries. Also, domestic funding is often interrupted by changes in political dynamics. 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 Suriname. 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 Suriname's draft 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 and promote SLM in Suriname. Some additional 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 energy, livestock transport 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, overseeing, extension and promotion of the SLM
- Lack of systematic analysis of the capacities needed by Suriname'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
- Most of the land in Suriname is State owned, which means that the land is commonly seen as a public good, thereby leading to a squatting phenomenon with inadequate infrastructure provision
- Income inequality along the coastal strip and in the hinterland areas force those in poverty to seek out a living on the only resource available to them – the land
- Insufficient grasp of DLDD and dire consequences on mitigation policies poses a challenge for the production of sound scientific evidence to inform investment patterns.



## CHAPTER 5: Approach For Developing The Aligned National Action Programme

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

### 5.1. Objective Need for The Development of Aligned Nap

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Suriname 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.

### 5.2. Governance of the Aligned Nap

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A National Technical Working Group (NTWG) was established in 2023 to steer the alignment process through technical support and promote the mainstreaming of NAP into national policies and plans. The NTWG met twice per month. The NTWG comprised representative from the following institutions:

- Ministry of Spatial Planning and Environment
- National Institute for Environment and Development in Suriname (NIMOS)
- Ministry of Land Policy & Forest Management

- Ministry of Natural Resources
- District Commissioners
- Management Institute for Land Registration and Land Information System (MI-GLIS)
- Ministry of Foreign Affairs
- Ministry of Regional Development (local communities)
- Ministry of Agriculture and Fisheries
- Ministry of Trade and Industry
- Ministry of Public Works
- Ministry of Finance and Planning
- The Foundation for Nature Preservation (STINASU)
- The National Herbarium and National Zoological Collection
- National Planning Office (Stichting Planbureau Suriname)
- Foundation for Forest Management and Production Control (SBB)
- University of Suriname and its research institutes (CELOS)
- KAMPOS (tribal) and VIDS (Committee of the Heads of villages of indigenous peoples)
- Amazone Conservation Team Suriname (ACTS)
- General Bureau of Statistics (ABS)
- Conservation International Suriname (CIS)
- World Wildlife Fund (WWF) Suriname

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

### 5.3. Methodology For the Preparation and Adoption of The Aligned Nap

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The development of the aligned NAP was conducted through a consultancy process (during 2023).

- Reviewed guidelines, manuals, national documents and other recommended resources to inform the development of the aligned NAP.
- Reviewed the working draft of the NAP (2006) to integrate aspects of UNCCD 2018–2030 Strategic Framework.
- Established NTWG 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 (Picture 1).

- Aligned NAP completed.



**Picture 1. Stakeholder engagement during inception workshop for the NAP alignment process.**

## 5.4. Stakeholder Engagement And Validation

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Stakeholders were consulted as an integral part of this consultancy mentioned above (Picture 2). 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 National Technical Working Group.



*Picture 2. National Technical Working Group (NTWG) engagement during the NAP alignment process.*



## CHAPTER 6: **Implementation Framework and Schedule**

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*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 Suriname's national development efforts. Implementation of the NAP is being done directly through projects and programmes executed by agencies which fall under the Ministry of Spatial Planning and Environment.*

### 6.1. Coordination, Communication, Synergies

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The operationalization and implementation of the aligned NAP will require coordination, communication, and synergies. The Ministry of Spatial Planning and Environment, as the National Focal Point to the UNCCD, is mandated to honour its obligations to the UNCCD. This mandate is also incorporated in the annual work plan of the Ministry in order to be effectively achieved. Resulting from this commitment, the country's national reports have been compiled and submitted to the UNCCD's secretariat over the past years.

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 Ministry of Spatial Planning and Environment 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 Suriname 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.

## 6.2. Implementation Of the Nap And Priorities For The Aligned Nap

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The assessment presented in table 5 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.

**Table 5. Assessment of strategic objectives and expected impacts against Suriname's NAP.**

Strategic Objectives (SO)	Expected Impacts (EI)	Stakeholders Roles and Responsibilities	Gaps	Recommended Action
<p><b>SO1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality</b></p>	<p>El 1.1 Land productivity and related ecosystems services are maintained or enhanced.</p>	<p>The Ministry of Spatial Planning and Environment should lead on the implementation of restoration and rehabilitation practices in order to assist with the recovery of ecosystem functions and services. The Ministry of Land Policy and Forest Management, Management Institute for Land Registration and Land Information System (MI-GLIS), National Institute for Environment and Development in Suriname (NIMOS), Foundation for Forest Management and Production Control (SBB), The Foundation for Nature Preservation (STINASU), and Ministry of Natural Resources should provide support.</p> <p>District Commissioners should provide key monitoring support to ensure land productivity and related ecosystems services are maintained or enhanced.</p> <p>The Ministry of Spatial Planning and Environment and NIMOS should lead the operationalization of the National voluntary LDN targets set in 2020, with support from other sector agencies. The Ministry of Spatial Planning and Environment and NIMOS should lead public awareness</p>	<p>Lack of adequate, consistent and targeted communication, public awareness and education activities for critical sectors contributing to land degradation and drought.</p>	<p>Prepare a DLDD Communication Strategy (CS) focused on specific and/or critical areas of the aligned NAP.</p>
	<p>El 1.2 The vulnerability of affected ecosystems is reduced, and the resilience of ecosystems is increased.</p>			<p>Inadequate collaboration among the focal point institutions for the Rio Conventions to address issues holistically and to build on synergies.</p>
	<p>El 1.3 National voluntary land degradation neutrality targets are set and adopted by countries wishing to do so, related measures are identified and implemented, and necessary monitoring systems are established.</p>		<p>Limited public awareness on NAP especially for key sector agencies.</p>	
	<p>El 1.4 Measures for sustainable land management and the combating of desertification/land degradation are shared, promoted and implemented</p>			<p>Establish a Special Taskforce with civil society (including vulnerable communities); private and public institutions to champion SLM practices in DLDD affected areas and conservation practices.</p>

Strategic Objectives (SO)	Expected Impacts (EI)	Stakeholders Roles and Responsibilities	Gaps	Recommended Action
		<p>activities that targets national and local communities, including schools and teachers.</p> <p>Data driven institutions such as the Ministry of Land Policy and Forest Management, MI-GLIS, NIMOS, STINASU, SBB, National Herbarium and National Zoological Collection, University of Suriname and its research institutes (CELOS), General Bureau of Statistics (ABS), Ministry of Agriculture and Fisheries and Husbandry, and Ministry of Natural Resources are encouraged to provide current and relevant data to inform Suriname's reporting nationally and internationally through the country's performance-based reporting mechanism on SLM.</p> <p>The UNCCD reporting process allows for communicating progress at the international level. Thus far Suriname has submitted two national reports to the Secretariat through the Ministry of Spatial Planning and Environment. All agencies involved are encouraged to continue providing support.</p>		<p>Build capacity through education programmes for land users to perform ecologically appropriate landscape management and restoration, working on DLDD (LADA Methodology, Land Management), and technical staff to monitor and analyse DLDD using satellite imagery and remote sensing.</p> <p>Develop a Training Programme for SLM for University of Suriname, targeted short courses and workshops in areas such as geospatial information system, land use planning, environmental impact assessment, and others.</p>
<p><b>SO2: To improve the living conditions of affected populations</b></p>	<p>EI 2.1 Food security and adequate access to water for people in affected areas is improved.</p> <p>EI 2.2 The livelihoods of people in affected</p>	<p>The Ministry of Agriculture and Fisheries and Husbandry is encouraged to continue to promote measures to build a food secure Suriname and promote alternative livelihoods. The Ministry of Regional</p>	<p>Lack of data related to land degradation in the agriculture sector, trends in population living below the relative poverty line and/or income inequality in affected areas, and</p>	<p>Integrate SLM interventions into national land use plans and key sector plans recognizing these sectors contribute to land degradation.</p>

Strategic Objectives (SO)	Expected Impacts (EI)	Stakeholders Roles and Responsibilities	Gaps	Recommended Action
	<p>areas are improved and diversified.</p> <p>EI 2.3 Local people, especially women and youth, are empowered and participate in decision-making processes in combating DLDD.</p> <p>EI 2.4 Migration forced by desertification and land degradation is substantially reduced.</p>	<p>Development (local communities) will play a critical supporting role at the grassroots level.</p> <p>The Ministry of Finance and Planning and National Planning Office (Stichting Planbureau Suriname) should lead on the implementation of the innovative financial strategy that would guide the effective implementation of the aligned NAP.</p> <p>The Ministry of Spatial Planning and Environment, Ministry of Land Policy and Forest Management, Ministry of Agriculture and Fisheries and Husbandry, Ministry of Natural Resources, Ministry of Finance and Planning and National Planning Office (Stichting Planbureau Suriname) should coordinate among themselves to 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.</p>	<p>trends in access to safe drinking water in affected areas.</p> <p>Lack of SLM interventions integrated into sectoral plans of critical sectors driving land degradation.</p>	<p>Mainstream DLDD into relevant national policies, strategies and plans, including description of time frames, instruments, and division of roles and responsibilities.</p> <p>The Focal Point Agency should provide incentives and services to those actors willing to adapt their programs and policies.</p> <p>Strengthen Environmental and Social Impact Assessment (ESIA) requirements, focusing particularly on monitoring and enforcement of mitigation measures set out in environmental management plans.</p> <p>Establish an authoritative policy advisory body for SLM, and develop a National Land Policy.</p> <p>Gender Action Plan to integrate women and youth in decision-making processes in combating DLDD.</p>
	EI 3.1			

Strategic Objectives (SO)	Expected Impacts (EI)	Stakeholders Roles and Responsibilities	Gaps	Recommended Action
<p><b>SO3: To mitigate, adapt to, and manage the effects of drought in order to enhance resilience of vulnerable populations and ecosystems</b></p>	<p>Ecosystems' vulnerability to drought is reduced, including through sustainable land and water management practices.</p> <p>EI 3.2 Communities' resilience to drought is increased.</p>	<p>The Ministry of Regional Development (local communities) and Ministry of Natural Resources should lead the monitoring of watershed areas/aquifers to better manage drought, thereby improving community resilience to drought. The Ministry of Agriculture, Fisheries and Husbandry should provide support.</p> <p>The Ministry of Spatial Planning and Environment, NIMOS, and Ministry of Agriculture and Fisheries and Husbandry should lead the development and implementation of a National Drought Plan to promote sustainable land and water management practices.</p> <p>The Ministry of Spatial Planning and Environment, NIMOS, and Ministry of Agriculture and Fisheries and Husbandry should collaborate to develop and operationalize drought risk management, monitoring and early warning systems and safety-net programmes, as appropriate.</p>	<p>Absence of a National Drought Plan and Drought Early Warning System protocols.</p>	<p>Develop a National Drought Plan and Drought Early Warning System protocols.</p> <p>Establish systems for sharing information and knowledge and facilitate networking on best practices and approaches to drought management</p>
<p><b>SO4: To generate global environmental benefits through effective implementation of the UNCCD</b></p>	<p>EI 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.</p>	<p>The National Herbarium and National Zoological Collection, Ministry of Spatial Planning and Environment should collaborate with the University of Suriname and its research institutes (CELOS), NIMOS, and SBB to develop and manage an inventory of abundance and</p>	<p>Limited coordination with key agencies responsible for biophysical and socioeconomic monitoring.</p> <p>Lack of adequate baseline data readily available in</p>	<p>National monitoring and vulnerability assessment of the integrity of the biophysical and socioeconomic environment.</p> <p>Develop sound scientific evidence</p>

Strategic Objectives (SO)	Expected Impacts (EI)	Stakeholders Roles and Responsibilities	Gaps	Recommended Action
	<p>El 4.2 Synergies with other multilateral environmental agreements and processes are enhanced.</p>	<p>distribution of selected species in keeping with Suriname’s National Biodiversity Strategy and Action Plan.</p> <p>The University of Suriname and its research institutes (CELOS) should take a leading role in research on DLDD.</p> <p>The Ministry of Spatial Planning and Environment, Ministry of Land Policy and Forest Management, MI-GLIS, NIMOS, SBB, STINASU, Ministry of Agriculture and Fisheries and Husbandry, Ministry of Regional Development (local communities), and Ministry of Natural Resources are encouraged to 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.</p>	<p>a useable format for reporting.</p>	<p>to continuously analyse biophysical and socioeconomic drivers of DLDD, the interactions with climate change, DLDD, and biodiversity.</p> <p>Conduct a National Scientific Land Degradation Study and a programme of research for land planning and management.</p> <p>Develop DLDD projects which include climate change adaptation, drought mitigation and restoration of degraded land, and develop tools to assist decision-making.</p> <p>Develop a mechanism to document/store traditional and local technical knowledge, good practices and success stories.</p>
<p><b>SO5: 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</b></p>	<p>El 5.1 Adequate and timely public and private financial resources are further mobilized and made available to affected country Parties, including through domestic resource mobilization.</p> <p>El 5.2</p>	<p>The Ministry of Finance and Planning and National Planning Office (Stichting Planbureau Suriname) should act on the funding sources identified in the innovative financial strategy. These include market mechanism, government financing, bilateral and multilateral, as well as mechanism</p>	<p>Absence of a framework to guide the mobilization of substantial and additional financial and non-financial resources to support the implementation of the Convention.</p>	<p>Undertake a comprehensive economic analysis of the costs of the loss of ecosystem services due to land degradation and drought.</p> <p>Increase efforts to mobilize financial and non-financial resources from</p>

Strategic Objectives (SO)	Expected Impacts (EI)	Stakeholders Roles and Responsibilities	Gaps	Recommended Action
	<p>International support is provided for 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.</p> <p>EI 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.</p>	<p>such as UNCCD, UNFCCC, and CBD.</p> <p>The Ministry of Finance and Planning and National Planning Office (Stichting Planbureau Suriname) should fully operationalize the innovative financial strategy to set out a framework for investment in DLDD.</p> <p>The Ministry of Spatial Planning and Environment and other land related agencies need to allocate adequate funding for training, particularly in the areas of remote sensing, GIS, Multi Criteria Decision Analysis, and Information management systems.</p> <p>The Ministry of Finance and Planning, National Planning Office (Stichting Planbureau Suriname), Ministry of Spatial Planning and Environment, and other land related agencies should take advantage of the opportunity to use LDN as a framework to enhance the coherence, effectiveness and multiple benefits of investments.</p>		<p>international financial institutions, facilities and funds, including Foreign Direct Investment (FDI), private foreign investment, NGOs and CSOs, GCF, and GEF.</p> <p>Encourage donors to use debt swap mechanism to promote and finance SLM interventions.</p> <p>Networking to access adequate financing for effective economic and policy incentives and technical support, notably within the framework of North-South, South-South, and triangular cooperation.</p>

### 6.3. Proposed Priority Actions to Combat DLDD And Promote Sustainable Land Management

Suriname 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. Sustainable Development Goal 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 (inclusive of Suriname) 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). Since 2020, Suriname has opted into and completed its LDN-TSP (2020 – 2030) which has national voluntary LDN target, established LDN baseline, and formulated measures (Republic of Suriname, 2020).

The LDN targets provide Suriname 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 Suriname 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 Suriname. 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 Suriname 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 Suriname will ensure that its efforts to combat DLDD are progressing and that the results of these efforts will have meaningful impact. A National Steering Committee made up of CSOs, researchers, academia and other stakeholders to monitor and evaluate DLDD is critical for monitoring and evaluation. 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.

## 6.4. Overall Timeframe for Aligned Nap Implementation

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The time frame for this aligned NAP is 2023-2030. The aligned NAP will be implemented in four phases as follows:

- Phase 1: 1 – 2 years
- Phase 2: 2 – 3 years
- Phase 3: 4 – 5 years
- Phase 4: 5 – 7 years

These indicative phases are intended to enable the aligned NAP to be synchronized with the national policy and planning processes and cycles. Table 6 outlines the implementation

phases for the areas of focus/priorities for the aligned NAP.

**Table 6.** *Implementation phases for Suriname aligned NAP.*

<b>Phase</b>	<b>Areas of Focus/Priority for Suriname's aligned NAP</b>
Phases 1 – 4	Increasing public awareness and education
Phases 2 – 3	Strengthening SLM and policy framework
Phases 2 – 4	Mainstreaming SLM interventions and UNCCD (2018 – 2030 Strategic Framework) objectives into national land use planning processes and national sectoral and investment plans
Phases 1 – 4	Strengthening collaboration with focal point institutions for the Rio Convention and build on synergies
Phases 1 – 4	Strengthening collaboration with tertiary intuitions to deliver training and capacity building on DLDD and other matters related to the UNCCD
Phases 1 – 4	Improving access to and adequacy of financial resources for UNCCD implementation and achieving LDN targets

## 6.5. Monitoring And Evaluation

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Suriname's aligned NAP outlines the approach and roadmap towards continuing to enhance the way of managing land and resources in Suriname. 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 Suriname will ensure that its efforts to combat DLDD are progressing and that the results of these efforts will have meaningful impact. Table 7 presents a basket of indicators for monitoring of LDN, impacts of SLM and enhanced data management in Suriname. 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 National Technical Working Group.

**Table 7.** *Basket of indicators for monitoring of LDN, impacts of SLM and enhanced data management in Suriname.*

Components	Outcomes	Outputs	Indicators	Activities
National estimates and baselines of metrics/proxies of indicators for UNCCD reporting	1. Improved and enhanced UNCCD biophysical progress indicators, quality of collected data and a data management analysis and monitoring system	1.1.1. Preparation of a National Report on national (a) Biophysical and socio-economic baseline information on DLDD,	Amount of available biophysical and socio-economic baseline information on DLDD	Analyse biophysical and socioeconomic drivers of DLDD
		(b) State of land degradation,	Percentage of degraded land  Number of land cover class conversion	Analyse land cover, land productivity and soil organic carbon changes overtime
		(c) Plans and programmes relating to land degradation,	Number of land degradation plans implemented	Review and revise plans and programmes periodically to

Components	Outcomes	Outputs	Indicators	Activities
			Number of programmes that covers land degradation	ensure current alignment with global strategies
		(d) Investments patterns, barriers and opportunities to increase financial investments for UNCCD implementation, and	Number of investment component that leverages private sector mobilisation  Number of activities that incentivise income generation  Number of mechanisms that identify and leverage innovative and sustainable financing	Grasping an in-depth understanding of negotiations within the organs of UNCCD to better leverage for financial resources
		(e) Analysis of data to support reporting to the convention, are conducted with CSO, research, academic involvement and due gender considerations	Number of gender responsive evaluation conducted  Number of systems established that involves relevant stakeholders in the regular monitoring and validation of LDN status reporting as well as project implementation outcomes, with a particular attention to gender  Number of economic incentives provided to benefit both men and	Consult with CSOs and academic institutions to ensure the reporting process is well informed through scientific evidence, stakeholder participation, and gender responsiveness

Components	Outcomes	Outputs	Indicators	Activities
			women to improve livelihoods  Number of mechanisms developed to ensure gender-responsive engagement of key stakeholders in implementation	
		1.1.2. Participate in training on indicators, data collection methodologies, analysis and application of indicators for monitoring and presenting UNCCD data	Number of trainings completed	Trained Reporting Officers to briefly train stakeholders
		1.1.3. 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 and improved technology to monitor SLM impacts	Leverage for technology transfer from developed country parties to effectively monitor LDN voluntary targets and SLM impacts

<b>Components</b>	<b>Outcomes</b>	<b>Outputs</b>	<b>Indicators</b>	<b>Activities</b>
Report on LDN Targets settings	2. Qualitative national reports to allow sound review of the LDN target setting and implementation	2.1.1 Participate in capacity development	Number of persons trained and training completed	Conducted consultations on reporting process at national level to facilitate a sound review of the first LDN voluntary target setting and implementation by the Committee of Review of the Convention Implementation (CRIC) at its 21 <sup>st</sup> session
		2.1.2 Reporting on LDN voluntary targets and preliminary implementation results	Number of completed LDN voluntary targets progress reports and status of implementation	Prepare progress reports and provide periodic status updates
	3. Align NAP to new UNCCD Strategic Framework (2018 – 2030)	3.1.1 Improving the implementation of UNCCD and LDN-TSP	Completed realigned NAP to combat land degradation	Integration of realigned NAP into future reporting cycles to UNCCD



## Conclusions

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As a signatory to the UNCCD, Suriname 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 Suriname 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.

Suriname continues in its progress towards meeting the SDGs and meeting the associated targets. Suriname is proud of its extensive and 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. Suriname possesses vast natural resources which are essential for sustaining its development and which will gradually increase the demand for developing its land and these resources. This increasing demand is not just for domestic consumption and development; there is a rapidly growing global demand for these resources, the export of which can become a substantial and important source of national revenue.

The government of Suriname 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 Suriname 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 Suriname.

The government of Suriname is making substantial progress in improving and adjusting existing policies and regulations, as well as designing new ones. These include effective safe guarding mechanisms, mitigative measures, and promotion of more sustainable land use practices. This aligned NAP sets out the roadmap for the government of Suriname 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, Suriname has a long history with close dependency on and deep knowledge of the local environment and ecology. Suriname'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 Suriname 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 Suriname 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 Suriname 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 Suriname include:

- The commencement of the concept law for Spatial Planning and the development of the Geospatial Data Intelligence Hub (will be launched October 2024) by the Ministry of Spatial Planning and Environment
- Conservation International is executing the Climate Smart Forestry/ Blue Carbon project for communities
- Ongoing Amazon Sustainable Landscaping and Carbon Stock Project

- REDD+ Project
- The ongoing Suriname Agriculture Market Access Project (SAMAP) to strengthen the capacity of farmers, farmer organizations, and agribusiness by providing grants to improve agriculture quality production and facilitate their foreign market access.

These ongoing efforts offers an opportunity for Suriname 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 Suriname along the path of achieving SDG target 15.3. Suriname is among the countries (129) that have already set the national voluntary LDN target, established the LDN baseline, and formulated associated measures. This further shows Suriname's commitment to achieving LDN by 2030. The LDN targets provide Suriname 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.

Suriname 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 Suriname's chances of benefitting from implementing agencies such as UNCCD. To secure continued progress in the implementation of UNCCD in Suriname, the following recommendations should be considered:

- Increase the awareness of potential investors on the importance and long term benefits of LDN
- Create linkages with various Ministries, Departments and Agencies to allow for the sharing of and easy access to information regarding UNCCD implementation and progress in Suriname

- Stronger enforcement measures and strengthening the institutional capacity of stakeholders who are directly involved in the aligned NAP process
- Formulate monitoring and coordinating mechanisms for implementation of UNCCD especially at the local level
- Formulation of a UNCCD committee to ensure monitoring and follow-up process in the implementation of UNCCD in Suriname
- Increase efforts at the community level to better integrate individuals and achieve cultural changes in unsustainable 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 and water management practices)
- Establish, implement and coordinate integrated land use planning, soil mapping, and land zoning to avoid or minimize fragmentation and damage to ecosystems
- Increase efforts to rehabilitate forest reserves and estates in upper watershed area and along river courses
- Increase expertise and technology needed to capture and interpret information on land resources and the impact of climate change
- Leverage support through SOILCARE Phase 2 Project across the Caribbean Community
- National definition of land degradation and drought, taking into consideration forestry, agriculture, and mining
- Consider spatial planning of land areas to avoid land degradation
- Improve conditions of affected ecosystems by balancing losses with gains
- Sharing of roles and responsibilities among different stakeholders, with consideration for the level of influence of stakeholders in the implementation process
- Integration of historical data, LiDAR data and data received through existing methods

- Consider tribal and indigenous communities and NGOs in Suriname such as
  - SPASU (Spatial Planning Association Suriname) and VES (Organization of Economics Suriname)
- Consider types of land degradation, land rights monitoring, investment patterns, opportunities, circular economies, land use management systems, payment for forest ecosystem service, and partnership on technology transfer.

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