

SECOND NATIONAL ACTION PROGRAMME FOR SOUTH AFRICA TO COMBAT DESERTIFICATION, LAND DEGRADATION AND THE EFFECTS OF DROUGHT (2018-2030)



forestry, fisheries
& the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA



The President of South Africa announced the configuration of Government Departments on 14 June 2019, which led to Cabinet introducing several changes to the previous configuration of the National Executive and Departments. The pronouncement resulted on the transfer of Forestry and Fisheries functions from Department of Agriculture to the then Department of Environmental Affairs (DEA).

On 26 February 2020, the portfolio of Minister Barbara Creecy, officially changed to the Minister of Forestry, Fisheries and the Environment. The Proclamation resulted in the name change to Department of Forestry, Fisheries and the Environment (DFFE) from 1 April 2021.

Second National Action Programme for South Africa to Combat Desertification, Land Degradation and the effects of Drought (2018-2030)

First publication in 2004 by the Department of Forestry, Fisheries and the Environment Copyright © 2018

Design and layout by

Department of Forestry, Fisheries and the Environment

Chief Directorate: Communications

Private Bag X447, Pretoria 0001

South Africa

Published by Department of Forestry, Fisheries and the Environment

Authors: Department of Forestry, Fisheries and the Environment
Contributors: National Coordinating Body of the United Nations Convention to Combat Desertification
Technical editors: Department of Forestry, Fisheries and the Environment and Prof. Klaus Kellner
Proofreaders: Department of Forestry, Fisheries and the Environment and Prof. Klaus Kellner
Layout and design: Department of Forestry, Fisheries and the Environment - Chief Directorate Communication
Photos: Department of Forestry, Fisheries and the Environment
Maps: Department of Forestry, Fisheries and the Environment and Agricultural Research Council

Citation: Department of Forestry, Fisheries and the Environment . 2018. The second National Action Programme for South Africa to combat desertification, land degradation and the effects of drought (2018-2030). Pretoria, South Africa. pp 1-35

Acknowledgements

The second National Action Programme for South Africa to combat desertification, land degradation and the effects of drought (2018-2030) is a culmination of a series of consultations and contributions from various stakeholders including independent subject experts led by the Department of Forestry, Fisheries and the Environment. The Department further makes acknowledgement to all the NAP contributing partners and the National Coordinating Body of the United Nations Convention to Combat Desertification for their strategic support and guidance in the development of this NAP.

A special thanks to the Project Steering Committee that provided invaluable inputs to the development of the NAP comprising of officials from the National, Provincial and Local Government, state entities, research and academic institutions, independent experts and civil society organizations at large.

CONTENTS

ACRONYMS	v
FOREWORD: MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT	vii
PART A: INTRODUCTION	1
1. BACKGROUND	1
2. OVERVIEW OF DESERTIFICATION, LAND DEGRADATION AND DROUGHT	1
2.1 Consequences of desertification, land degradation and the effects of drought	3
2.1.1 Effects of land degradation on water resources, biodiversity and soils	3
2.1.2 Effects of desertification and land degradation on household food security	3
2.1.3 Effects of desertification and land degradation on the economy	3
2.2. Different types of land degradation	4
2.2.1 Soil degradation	4
2.2.2 Vegetation degradation	4
2.2.3 Water erosion	4
2.2.4 Wind erosion	4
2.2.5 Alien plant invasion	5
2.3. State of land degradation	5
2.4. State of drought in South Africa	6
3. REVISION AND ALIGNMENT OF THE NATIONAL ACTION PROGRAMME	7
3.1 The revision of National Action Programme	7
3.2 The purpose of the National Action Programme	8
PART B: INTERNATIONAL POLICY CONTEXT ON DESERTIFICATION, LAND DEGRADATION AND THE EFFECTS OF DROUGHT	10
4. INTERNATIONAL POLICY CONTEXT ON DESERTIFICATION, LAND DEGRADATION AND DROUGHT	10
4.1 The adoption of the first global UNCCD Strategic Plan and Framework (2008-2018)	10
4.2 Aichi biodiversity targets	10
4.3 Rio+20 Summit	11
4.4 Adoption of the Sustainable Development Goals (SDGs)	11
4.5 Intended nationally determined contributions (INDC)	12
4.6 The Paris Agreement	12
4.7 Southern African Development Community Sub-regional Action Programme to Combat Desertification (2015-2025)	13
4.8 Drought Resilient and Prepared Africa (DRAPA) – strategic framework for drought management and enhanced resilience to drought in Africa	13
4.9 The UNCCD 2018–2030 Strategic Framework (The Strategy)	13
4.10 Drought Initiative of the UNCCD	14
PART C: POLICY FRAMEWORK CONTEXT	15
5. LEGISLATION, POLICIES AND STRATEGIES ADDRESSING SUSTAINABLE LAND MANAGEMENT IN LINE WITH THE UNCCD OPERATIONAL OBJECTIVES IN SOUTH AFRICA	15
6. SECTORAL PROGRAMMES AND INITIATIVES	17
PART D: THE REVISED AND UPDATED NATIONAL ACTION PROGRAMME	21
7. FRAMEWORK FOR THE NATIONAL ACTION PROGRAMME TO COMBAT DESERTIFICATION, LAND DEGRADATION AND THE EFFECTS OF DROUGHT	21
7.1 Structure of the NAP	21

8. KEY OUTCOMES OF THE NAP	21
Outcome 1: By 2020, national strategy for communication and coordination of programme to mitigate desertification/ degradation and drought is delivered.....	21
Outcome 2: By 2020, policy and institutional frameworks are effectively implemented and strengthened to minimise desertification, reverse land degradation and mitigate effects of drought.....	23
Outcome 3: By 2025, support and encourage research by academic and scientific institutions on science, knowledge and technology on desertification, land degradation and drought, as well as climate change mitigation and adaptation.....	25
Outcome 4: By 2019, the capacity of government institutions, non-governmental organisations (NGOs) and civil society to support efforts / initiatives aimed at mitigating desertification, land degradation and drought has been built.....	26
Outcome 5: By 2019, funding mechanisms to support land owners, communities and conservation entities to implement sustainable land use management have been established and are functioning.....	27
Outcomes 6: By 2030, South Africa is to ensure that degraded ecosystems are restored whilst contributing to ecosystem services delivery, climate change adaptation and mitigation.....	28
Outcome 7: By 2019, South Africa’s national voluntary targets to ensure a land degradation neutral world have been identified, formulated and implemented.....	30
PART E: NAP INSTITUTIONAL ARRANGEMENTS	31
9. NATIONAL COORDINATING BODY FOR THE UNCCD	31
10. FUNDING MECHANISMS FOR THE IMPLEMENTATION OF THE NAP	32
11. MONITORING AND EVALUATION OF THE NAP	33
12. REFERENCES	34

ACRONYMS

AIS	Alien invasive species
ARC	Agricultural Research Council
CARA	Conservation of Agricultural Resources Act No. 43 of 1983
CBD	Convention on Biological Diversity
CBNRM	Community-based natural resource management
CGA	South African Cane Growers Association
CRDP	Comprehensive Rural Development Programme
CSIR	Council for Scientific and Industrial Research
DEFF	Department of Forestry, Fisheries and the Environment
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DLDD	Desertification, land degradation and drought
DRDLR	Department of Land Reform and Rural Development
DWS	Department of Water and Sanitation
ENSO	El Niño-Southern Oscillation
EPWP	Expanded Public Works Programme
EWT	Endangered Wildlife Trust
FAO	Food and Agriculture Organisation
GEF	Global Environment Facility
INDC	Intended nationally determined contribution
ISRDP	Integrated Sustainable Rural Development Programme
IUCN	International Union for Conservation of Nature
KNP	Kalahari-Namib Project
LADA	Land degradation assessment in drylands
LDN	Land degradation neutrality
MLRA	Marine Living Resources Act No. 18 of 1998
MPRDA	Mineral and Petroleum Resources Development Act No. 28 of 2002
NAMA	Nationally appropriate mitigation action
NAP	National Action Programme
NARYSEC	National Rural Youth Service Corps
NEM: ICMA	Integrated Coastal Management Act No. 24 of 2008 as amended
NEMA	National Environmental Management Act No. 107 of 1998
NEMAQA	National Environmental Management Air Quality Act No. 39 of 2004
NEMBA	National Environmental Management Biodiversity Act No. 10 of 2004
NEMPAA	National Environmental Management Protected Areas Act No. 57 of 2003
NEPAD	New partnership for Africa's development
NGO	Non-governmental organisations
NWA	National Water Act No. 36 of 1998
PASG	Percentage of average seasonal greenness
QUELRO	Quantified emissions limitation and reduction objective
SA-UNCCD	South Africa - United Nations Convention to Combat Desertification
SCI-SLM	Stimulating community initiative in sustainable land management
SDG	Sustainable development goal
SLM	Sustainable land management
SPLUMA	Spatial Planning and Land Use Management Act No. 16 of 2013
SUPRA	Sustainable Utilisation and Protection of Agricultural Resources Bill
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development

UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP-GEF	United Nations Development Programme – Global Environment Facility
UNFCCC	United Nations Framework Convention on Climate Change
WHCA	World Heritage Convention Act No. 49 of 1999
WOCAT	World Overview of Conservation Approaches and Technologies

FOREWORD

MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

Desertification, Land Degradation and the effects of Drought (DLDD) are challenges of global dimensions. They contribute to, and worsen economic, social and environmental problems such as poverty, poor health, lack of food security, biodiversity loss, water scarcity, reduced resilience to climate change and migration, amongst other things. They continue to pose serious challenges to the sustainable development of all countries, particularly affected countries.



The United Nations Convention to Combat Desertification (UNCCD) in those countries experiencing drought and/or desertification, particularly in Africa, offers a new hope in the struggle against environmental problems. It calls upon each country affected by serious drought and land degradation to develop a National Action Programme (NAP), as a key instrument to combat DLDD. Given that the NAP cuts across many sectors, this instrument will provide a framework of partnerships that calls for all government structures, communities and their leaders, NGOs, the private sector and research institutions to work together. In addition, it calls upon the international community to help to provide the necessary knowledge base, capacity development and financial resources.

DLDD is not only about land, it is also about the people. In South Africa millions of people are directly affected by natural resource degradation and many of them live below the poverty line. They depend on natural resources to sustain their livelihoods. Yet the capacity of our country's land, water and biological resources to sustain its people is degrading. Healthy and productive land is lost and our pristine conservation areas are declining.

The adoption of the Sustainable Development Goals (SDGs), in particular goal 15 and its targets, is consistent with our government priorities and circumstances that seek to achieve our long term National Development Plan. The development of

South Africa's second NAP (2018-2030) is also aligned to our national priorities as 91% of the country falls within the category of drylands, making it susceptible to DLDD which is intricately linked to food and water insecurity, poverty, urbanization, climate change, and biodiversity loss. This NAP is a further demonstration of our Government's commitment to integrate sustainable land management into national development priorities. It is a continuation of the good work done under the National Action Programme to Combat Desertification (2004-2017).

Goal 15 of the SDGs underscored the need for urgent action to reverse land degradation through the achievement of a degradation neutral world in the context of sustainable development. Land Degradation Neutrality (LDN) will serve as a direct response to the immediate challenge of how to sustainably intensify the production of food, fuel and fibre to meet future demand, without further degradation of our finite land resource base. The key principle of LDN is that people at grassroots level whose everyday decisions and actions affect the condition of land and water resources will be involved in designing and implementing measures to address DLDD. This will be achieved through the established national LDN targets and indicators for the country.

As a country affected by desertification, land degradation and the effects of drought, I am confident that the effective implementation of the NAP (2018-2030) will contribute towards the conservation and sustainable utilisation of our land and other natural resources.

A handwritten signature in black ink, appearing to read 'Barbara Creecy'.

Barbara Creecy

Minister of Forestry, Fisheries and the Environment

PART A: INTRODUCTION

1. BACKGROUND

Globally, desertification affects approximately 70% of drylands, and 73% of Africa's agricultural lands are degraded. According to the United Nations Environment Programme (UNEP) report, approximately, 91% of South Africa's landscape is drylands, and this makes it susceptible to desertification. Both desertification and land degradation are intricately linked to food security, poverty, urbanisation, climate change and biodiversity and are, thus, among the most critical environmental challenges in South Africa. In addition, 80% of the land in South Africa is used for agriculture and subsistence livelihoods; 11% of this (12.76 million ha) has arable potential, of which 82% is under commercial agriculture with the majority (69%) being used for grazing.

South Africa is a relatively dry country, with an average annual rainfall of about 464 mm, compared to a world average of about 860 mm. While the Western Cape receives most of its rainfall in winter, the rest of the country is generally a summer-rainfall region. South Africa's surface area covers approximately 1 219 602 km² and, considered a "mega-diverse" country, forms part of a select group of nations that possess the greatest number and diversity of animals and plants (nearly 70% of global species diversity). However, the country continues to face threats to food production due to the impacts of climate change linked to meteorological hazards (for example floods and frequent droughts), as well as loss of productive land due to land-degradation processes such as soil erosion and desertification.

Soil degradation is severe and increasing in most communal cropland and grazing lands while sheet and gully erosion cover about 0.72 million ha of the country and is increasing. Water erosion is the most widespread problem affecting over 70% of the country. About 25% of South Africa is highly susceptible to wind erosion with an estimated 2.2 million ha already severely affected by wind erosion by 1985. This proportion has more than doubled due to the dry period leading up to 2013-2015. Areas particularly prone to wind erosion include the western half of croplands in western Free State and the greater part of the North West and the Northern Cape provinces (DEA, 2016a).

South Africa, being one of the countries that are affected by desertification, land degradation and drought (DLDD) which dates back to the last century, ratified the United Nations Convention to Combat Desertification (UNCCD) in September 1997. This convention provides a framework for countries affected by desertification and drought to address the problem of land degradation effectively through the development of National Action Programmes (NAPs) in accordance with Articles 9 and 10 of the convention (UNCCD, 2008).

The UNCCD's 10-year Strategy and Framework to enhance the implementation thereof was adopted by Decision 3/COP8 dated September 2007 in Madrid, Spain. This strategy aims to forge a global partnership to reverse and prevent desertification and degradation in order to reduce poverty and support environmental sustainability while presenting a major opportunity to address the underlying causes of land degradation. Importantly, country parties were encouraged "to align and review their action programmes and other relevant implementation activities relating to the Convention with the Strategy by, *inter alia*, addressing the outcomes under the five operational objectives" (UNCCD, 2008) in order to enhance the implementation of the convention and to give effect to other relevant decisions and resolutions contained therein. The current draft revision of South Africa's NAP is the expression of our government's commitment to honour its obligations in terms of the UNCCD.

2. OVERVIEW OF DESERTIFICATION, LAND DEGRADATION AND DROUGHT

Land is important for producing food and providing ecosystem goods and services such as fresh water, clean air and raw building materials such as timber and sand. Productive land and fertile soil are very important and many communities depend heavily thereon as their main source of food and sustainable livelihoods, especially the rural poor. Productive land is, however, becoming scarce. Population growth, climate change, unsustainable land use, land degradation and growing urban areas increase pressure on productive land resources. Competition for productive land increases due to the growing demand for food, fodder and mineral resources, as well as raw materials for industrial and energy use. Land is central to the "nexus" that links energy, food, water and environmental health in an interdependent loop. Continued land degradation over the years could reduce food production when population growth, rising incomes and changing consumption patterns are expected to increase food demand significantly. By 2030, the demand for food, energy and water is expected to increase significantly. These needs will not be met sustainably unless we preserve and restore the productivity of our land. Furthermore, a "business as usual" approach will lead to even more deforestation (UNCCD, 2015).

According to the UNCCD, desertification is defined as land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors including climatic variations and human activities; whereas land degradation refers to any depletion of biodiversity and ecosystem functioning that negatively impacts the provision of ecosystem services and ultimately impedes poverty eradication and sustainable development (DEA, 2016a). Therefore, desertification is a natural phenomenon exacerbated by human activities. (UNCCD, 2008). Currently, degradation of the earth's land surface through human activities is negatively impacting the well-being of at least 3.2 billion people, pushing the planet towards a sixth mass species extinction, and costing more than 10 % of the annual global gross product in loss of biodiversity and ecosystem services (IPBES, 2018).

According to Global Soil Biodiversity Atlas (GSBA), approximately 40 % of the world’s land surface is covered by drylands (i.e. arid, semi-arid and dry sub-humid lands), which are home to approximately two thousand million people. Unfortunately, a large part of these lands are degraded, meaning that they are gradually losing their ecosystem functioning and productivity. This can eventually lead to desertification, which is the most severe form of land degradation. With increasing pressure on the landscape due to growing population and economic development, this can have devastating impacts on rural livelihoods.

In addition to unsustainable agricultural and livestock-management practices, other sectoral activities contribute to land degradation thereby reducing socio-ecological resilience relating to food and water security (UNCCD, 2008). When degradation occurs in arid, semi-arid and dry sub-humid areas where productivity is constrained by water availability, it is called desertification (UNCCD, 2008). There are direct and indirect drivers of land degradation. Table 1 below shows some of the drivers of land degradation. According to Nkonya et al (2016) there are many drivers of land degradation, including overgrazing by animals, which leaves the soil bare as well as compacted through trampling of livestock’s hooves, thus making it difficult for water to infiltrate into the ground. Further unsustainable human activities, including agricultural use of steep slopes and excessive irrigation, can lead to salinization of the soil and erosion.

The effects of proximate drivers of land degradation such as topography, climate, and soil characteristic are well understood as causes of land degradation and there is a broad consensus about their causal mechanisms. For example, steeper slopes are more vulnerable to water-induced soil erosion (Wischmeier 1976; Voortman et al. 2000) and soils with high silt content are naturally more prone to degradation (Bonilla and Johnson 2012).

Both desertification and land degradation are intricately linked to food security, poverty, urbanisation, climate change and biodiversity and are, thus, among the most critical environmental challenges in South Africa. Furthermore, 80% of the land in South Africa is used for agriculture and subsistence livelihoods. About six million people in South Africa depend on agriculture for their livelihoods with the smallholder agricultural sector providing employment for 1.3 million households (DEA, 2016b). Despite the importance of land and its ecosystems, South Africa is still prone to desertification, land degradation, and the effects of drought currently exacerbated by human activities that disturb the balance between soils, vegetation and climate.

In South Africa, mining is a source of income, however mines damage the soil and underlying structure of the land by producing different chemicals that are used to pollute soil and water courses and that leads to land being degraded. Van der Burgh (2012) outlines that coal mining in Mpumalanga was calculated and estimated that 46.4% of the total high potential arable soils are found in that province and that 12% of South Africa’s total high potential arable land will be transformed. It was also outlined that a total of 326 000ha of cultivated land will be taken up by current mines and further 439 000ha which has prospecting taking place on them. Even though there are precise execution of well-defined rehabilitation procedures that are done, a degradation from pre mining to post mining land capability is unavoidable. After some years of rehabilitation, the grass cover often deteriorates. Also due to soils being moved too wet, companies cannot be reversed even with deep ripping (Van der Burgh 2012).

Table 1. Shows the main proximate and underlying drivers of land degradation. Source: Nkonya et al. (2016).

Driver of land degradation	Examples of causality
Direct drivers of land degradation	
Mining	Many areas adversely affected by mining pollution. Exploration of natural gas in several parts of South Africa
Urbanisation and infrastructure development	Major causes of loss of land/natural cover
Over-harvesting	Common examples include overgrazing, and overharvesting of fuel wood
Bush encroachment	Common problem especially on commercial farms
Alien invasive species	Several invasive species in the country
Topography (natural)	Steep slopes vulnerable to water induced erosion
Land cover change (natural/anthropogenic)	Conversion of rangelands, forest, woodlands, grassland, shrublands to cropland
Climate (natural)	Dry hot areas prone to naturally occurring wildfires which may lead to soil erosion. Drought which may reduce plant cover leading to soil erosion
Soil erodibility (natural)	Soils with high silt or sodium content naturally prone to erosion. Duplex soil prone to erosion
Pests and diseases (natural)	Pests and diseases lead to loss of biodiversity, loss of crops and livestock productivity.
Unsustainable land management (anthropogenic)	Land clearing, overgrazing, cultivation on steep slopes, bush burning and soil nutrient mining major sources of land degradation
Indirect drivers of land degradation	
High population density	May lead to increased pressure on land – common problem in former homelands.

Driver of land degradation	Examples of causality
Land tenure	Insecure tenure may lead to adoption of unsustainable land management practices.
Poverty	Vicious cycle between poverty and land degradation: poverty could lead to land degradation while land degradation may lead to poverty.
Access to agricultural extension services	Lack of access to extension services could lead to land degradation

2.1 Consequences of desertification, land degradation and the effects of drought

Land degradation impacts upon landscapes and people in several ways, e.g. the decline in the quality of soil and the vegetation supported by the soils. This further has a direct impact on agricultural productivity leading to lower yields of crops. Land degradation also undermines the productive potential of land and water resources, so the consequences are considerable and diverse in terms of the goods and services provided by natural ecosystems, and it directly affects human welfare. When land is degraded, it can worsen the effects of poverty and bring about hunger since degradation of land has serious consequences for food security. Many small-scale farmers in areas of degraded land can only watch in dismay as the soil at their disposal to feed their families grows less and less each year. This situation is made worse by droughts and unpredictable weather patterns caused by climate change.

2.1.1 Effects of land degradation on water resources, biodiversity and soils

Globally, it is estimated that as many as 1.8 billion people live in areas with some noticeable land and water degradation, which reduces livelihoods and household security. The rate of degradation of land and water resources is accelerating, and the consequences thereof for food security are becoming increasingly clear (Wood *et al.*, 2000). Degradation of catchment areas results in the deterioration of the quality, quantity and ecological integrity of surface water resources, including rivers, wetlands, dams and estuaries. Soil erosion results in sedimentation of dams, while increased invasion by alien species has serious impacts on stream flows, land productivity and biodiversity. Furthermore, alien plant invasion is one of South Africa's most critical environmental issues and an important contributor to vegetation degradation and loss of productivity of land.

2.1.2 Effects of desertification and land degradation on household food security

According to the United Nations Economic and Social Council report of 2006, the loss of natural resources, environmental degradation (Van Crowder *et al.*, 1998) and desertification (UNCCD 2014) affects food security. The report further highlighted that, the poor households that are exposed to drought and desertification do not have adequate resources to address issues of food insecurity and hunger that affects millions of people. If land degradation continues at the current rate/pace, it is projected that more than half of cultivated agricultural land in Africa could be unusable by the year 2050. South Africa depends on local agricultural production for food provision. Effects of droughts on agriculture and degradation lead to less productive soils, thereby increasingly impairing the country's ability to feed its growing population and to sustain livelihoods, particularly among the rural poor.

Hamdy and Aly (2014) outlines that more than 50% of agricultural land are acetically to severely degraded and land degradation directly affects approximately 1.5 billion people globally. 15 billion tons of fertile soil disappears per year and 12 million ha per year is lost due to drought and desertification. Moreover, Six million km² of dry lands tolerate a legacy of desertification.

2.1.3 Effects of desertification and land degradation on the economy

The economics of land degradation and desertification are poorly understood. However, healthy ecosystem provides a range of ecosystem services that support people's livelihoods and contribute to and underpin the economy. It's estimated that, about 35% of the country's net agricultural income is overstated because the environmental costs are currently not included. Soil degradation alone costs South Africa about R2 billion annually in dam sedimentation and increased water-treatment costs. For example, costs associated with neutralising the effects of acid rain (caused by energy generation) on soils in Mpumalanga are estimated at R25 million per year, while the loss of soil nutrients through degradation costs R1.5 billion per year (DEA 2008). Figure 1 below indicates impacts of land degradation, desertification and drought across many sectors including the economy sector.

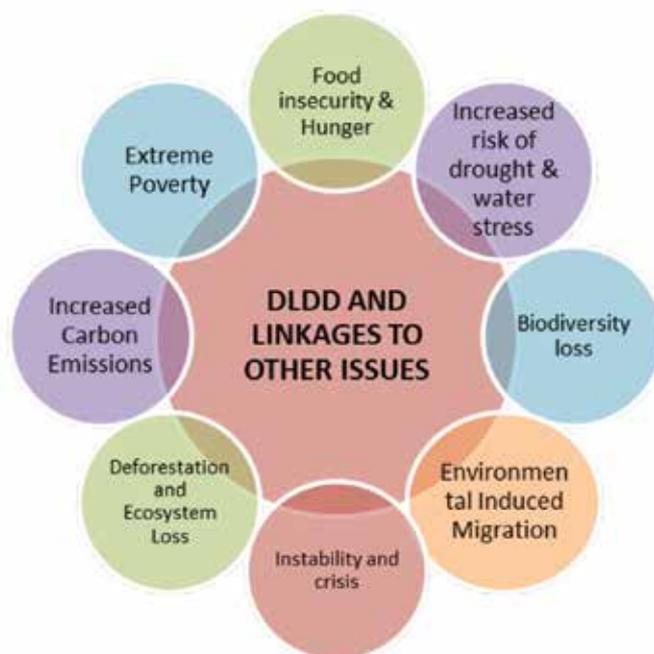


Figure 1. Land degradation: the surrounding question, issues and challenges

2.2 Different types of land degradation

2.2.1 Soil degradation

South Africa's soils are generally fragile, climatologically and topographically predisposed to land degradation through soil erosion, which is a natural process up to the point where it is accelerated due to human activities such as deforestation, overgrazing, forest fires and construction activities (DEA, 2012). Over 70% of the South African land surface has been intensely affected by a variety of soil erosion types. Nevertheless, the most influential factors in land degradation are still poor agricultural or farming methods and land husbandry practised by both commercial and subsistence farmers (Le Roux, 2007).

Several natural events such as running water or blowing winds also trigger erosion processes. Soil erosion also results in loss of soil productivity, increased suspended sediments in water bodies and sedimentation in reservoirs which, consequently, affect river ecosystems (Le Roux, 2007). When considered across all land-use types, it is clear that soil degradation is perceived as more of a problem in KwaZulu-Natal, Limpopo and the Eastern Cape, and less of a problem in the Free State, Western Cape and Northern Cape. (Le Roux, 2007).

2.2.2 Vegetation degradation

High rates of vegetation degradation have been observed in Limpopo, KwaZulu-Natal and communal areas of the Eastern Cape (DEA, 2008). These areas have high proportions of grazing lands and experience problems of decreased vegetative cover, bush encroachment, alien plant invasions and changes in species composition. Bush encroachment is also severe in the dry areas of the Northern Cape, the western parts of North West and south-western Free State (DEA, 2008).

2.2.3 Water erosion

Erosion is a major problem in South Africa (Pretorius, 1998; Le Roux *et al.*, 2007), and rainfall and subsequent runoff are the major sources of erosive and transport energy. Erosion via water can be categorised as sheet, rill and gully erosion (Morgan, 2005; Le Roux *et al.*, 2008). It is not possible to draw a clear distinction between these forms of erosion, but they do vary in as far their simultaneous occurrence during varying watershed stages. According to Al-Kaisi (2008), while erosion reduces the productivity of land, it also contributes to water quality deterioration. In South Africa, soil water erosion is the major carrier of nutrients and pollutants to water bodies.

2.2.4 Wind erosion

Wind erosion is a crucial issue in arid and semi-arid regions (FAO, 1960; Wolfe & Nickling, 1993; Borrelli *et al.*, 2014). Nearly 28% of the global land area is affected by this phenomenon (Oldeman, 1994; Callot *et al.*, 2000; Prospero *et al.*, 2002; Webb *et al.*, 2006; Du *et al.*, 2015). This type of erosion decreases soil productivity and has a negative effect on the environment because

eroded fine particulates become suspended in the atmosphere (Sterk & Raats, 1996; Sharratt *et al.*, 2007; Visser & Sterk, 2007; Borrelli *et al.*, 2014). In South Africa, soil wind erosion is closely related to the natural and human-induced removal of vegetation cover (Wiggs *et al.*, 1994). According to Pretorius (1998), 25% of South Africa is susceptible to wind erosion. This percentage is likely to grow due to the loss of vegetation in rangelands and tillage practices in agricultural lands. Several studies undertaken have delineated large areas of the Northern Cape, the western part of the North West Province and the northwest part of the Free State Province as significant sources of dust emission in South Africa (Ginoux *et al.*, 2012). Furthermore, major natural dust-emission source areas occur in the arid and semi-arid parts of South Africa such as Namaqualand, Swartland and ephemeral lakes (Ginoux *et al.*, 2012).

2.2.5 Alien plant invasion

South Africa is among the countries that have a long colonial history of invasive alien species. Several thousand species of alien plants have been introduced into South Africa. Many of these have become naturalised and some, following a long ‘lag’ phase which may last many decades, suddenly increased in abundance and became invasive weeds. The introduction of invasive species in South Africa dates back to the 1600s and peaked in the 1800s, which resulted in over 500 species being listed as damaging in agricultural and natural ecosystems. Several invasive species are also responsible for decreasing water run-off and groundwater reserves at rates that are far in excess of water usage by the natural vegetation types, which is especially problematic in this water-scarce country.

2.3 State of land degradation

In 2016, South Africa through the Department of Forestry, Fisheries and the Environment conducted a study to determine the extent desertification, land degradation and drought to determine the extent of desertification and land degradation in the country. The study indicated that, 91% of the country falls within the category of drylands, making it susceptible to desertification (DEA, 2016a). Areas of severe degradation and desertification correspond closely with the distribution of communal rangelands, specifically in the steeply sloping environments adjacent to the escarpment in the aforementioned provinces (DEA, 2016a). The study further indicated that arid zones are prevalent in the Northern Cape Province while the North West and Free State were found to be predominantly semi-arid (DEA, 2016a) as shown in figure 2 below.

LAND DEGRADATION INDEX : 2013

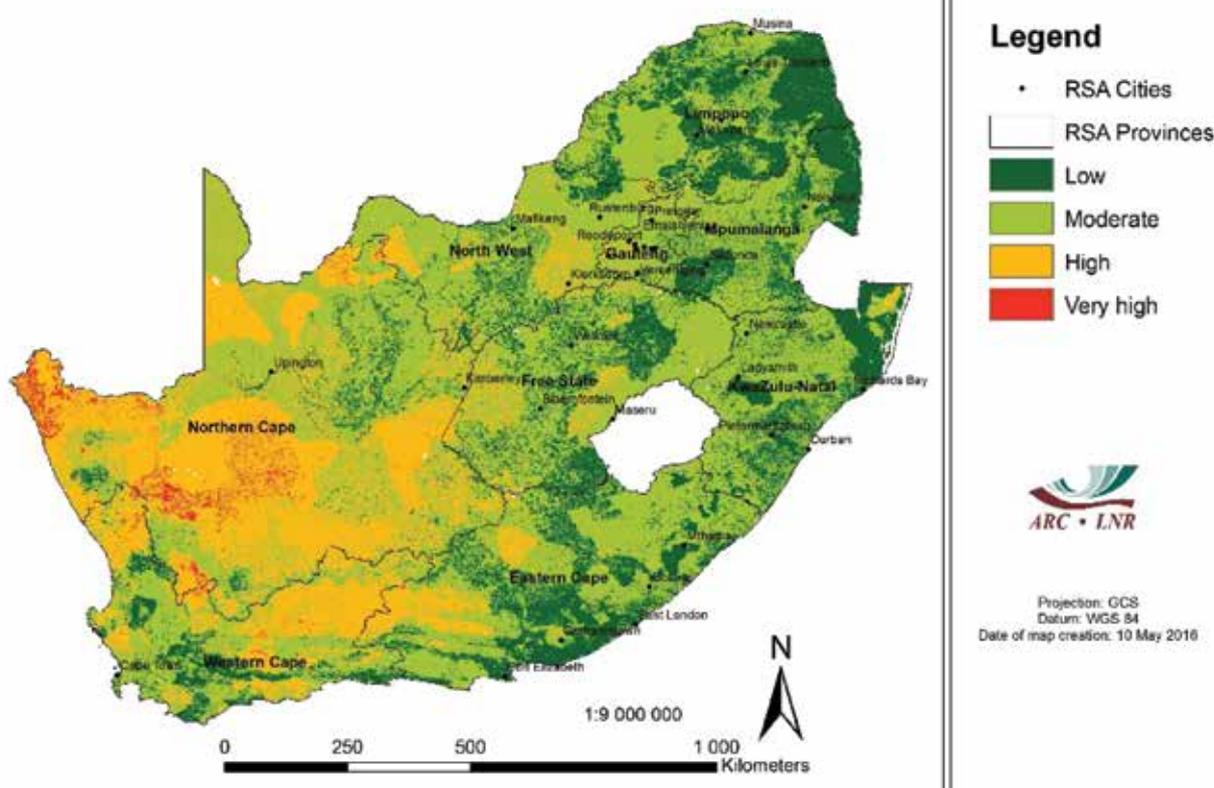


Figure 2: Land Degradation Index map (DEA, 2016)

The land degradation index above (Figure 2) was produced by combining a number of indicators that include aridity index, wind and water erosion and soil pH. The map shows that most parts of the country experience low to medium degradation, whereas large parts of the Northern Cape, North West and Eastern Cape Provinces experience high degradation.

Land degradation in South Africa was assessed by observing indicators such as soil erosion, salinization, invader species, land cover change and drought assessment. Although water and wind erosion hotspots did not change during assessment period, the intensity of both water and wind erosion increased in those areas identified as hotspots. In terms of soil salinization, it was found that slightly and moderately saline soils occur in different proportions in all provinces with some sizeable areas of slightly saline soils found. Larger areas of primary moderately saline soils are found in the north-eastern parts of the Western Cape and the south-western parts of the Eastern Cape. Smaller patches of moderately saline soils occur in the Northern Cape, Limpopo and Mpumalanga provinces.

Acidic soils are found in the KwaZulu-Natal, Eastern Cape, Western Cape, Free State, Gauteng, Mpumalanga, Limpopo and North West provinces. While large areas of land are strongly acidic in KwaZulu-Natal, Mpumalanga and the Eastern Cape, relatively smaller areas of land are strongly acidic in Limpopo, Free State, North West and the Western Cape

Prosopis is one of the invasive alien plant species that continues to invade areas in South Africa. Its invasive properties have enabled it to out-compete and replace indigenous vegetation, forming dense stands that aggressively and successfully colonize arid areas. The Prosopis invader vegetation assessment and mapping indicated that there was a small decrease in the total affected area from 1.64 million hectares to 1.5 million hectares in 2014. Although the Northern Cape Province show a marked decrease in Prosopis cover while North West, Western Cape and Eastern Cape Province experienced an increase in Prosopis cover.

The land cover change assessment indicates that at a national level there has been a total increase in transformed land specifically associated with Urban/Mining, Cultivation and Plantation

The drought assessment by Standard Precipitation Index (SPI) showed gradual shift in dry areas observed. Drought over the peripheries of the country (southern to eastern coastal areas and Lowveld in the northeast) during the early part of the period (2009-2010) was replaced by drought conditions over the central parts of the country by 2012 and 2013 whilst the eastern and southern parts received above-normal rainfall at that stage. The negative impacts to the agricultural sector primarily arises because of deficient water in the soil profile, affecting crops and grazing negatively.

2.4 State of drought in South Africa

In South Africa, drought is a serious natural disaster and has been associated with many socio-economic challenges. Throughout the African continent, drought causes large-scale water and food deficits, hunger, famine, migration of people and animals, diseases, fatalities and many other severe, chronic societal problems. Drought, however, is not limited to Africa but is a global problem that affects many parts of the world, including both poor and rich countries, developed and developing ones.

South Africa's climate is characterised by periods of wet spells also called La Niña (years receiving above-normal rainfall) and dry spells also called El Niño (years receiving below-normal rainfall). Scientific analysis of rainfall data has shown that South Africa experiences spells of either predominantly wet years or spells of predominantly dry years, and these spells have not affected regions of this country exactly the same or equally.

The 2014/15 drought, have highlighted the fact that, South Africa is a drought-prone country and is also vulnerable to the impacts of drought. Maize production during the 2014/15 production year was estimated to be only a third of that of the previous production year. Apart from the impact on food security, the occurrence of droughts also places a strain on natural resources such as grazing, which, together with unsustainable management practices, results in reduced production capacity (Archer, 2004). Large parts of the country are classified as arid or semi-arid but, more importantly, periodicities in the climate system sometimes result in multi-year periods of anomalously low rainfall. The duration, spatial extent and intensity of droughts result in a range of impacts affecting various sectors of the economy.

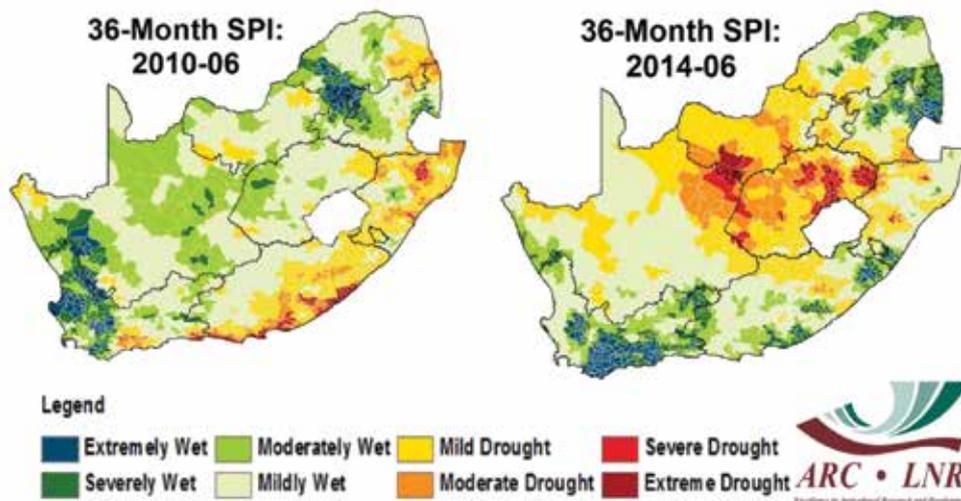


Figure 3: Standard Precipitation Index (SPI) classes at 36-month time scale between June 2010 and June 2013 (DEA, 2017)

The latest droughts on record in South Africa occurred in 1982/84, 1992/93, 2003/04, 2014/15 and 2016/17. All of these had a significant economic, environmental and social impact, signifying that South Africa is particularly vulnerable to this natural hazard (DEA, 2016a). The 2014/15 drought, in particular, had major impacts on the following provinces: Free State, KwaZulu-Natal, Limpopo, Mpumalanga, Eastern Cape, Western Cape and North West.

Given that the impact of drought is most severe in provinces that are important grain producers, the gradual shift in dry areas (as indicated in Figure 3 above) is of particular importance when considering management options for a drought-prone country the likes of South Africa.

3. REVISION AND ALIGNMENT OF THE NATIONAL ACTION PROGRAMME

3.1 The revision of National Action Programme

South Africa's ratification of the UNCCD confirmed government's political will to contribute to the implementation of the Convention. In response to Article 9 and 10 of the convention, South Africa developed its first NAP in 2004. The 2004 NAP was developed in collaboration with other relevant departments, research and academic institutions, multilateral donor organisations, non-governmental organisations (NGOs) and civil society at large. The subsequent adoption of the 2004 NAP and appointment of a national coordinating body (NCB) further expressed South Africa's commitment towards the implementation of the Convention. The implementation of the 2004 NAP was overseen by a steering committee, which widened the NAP's reach through advisory structures and workshops involving national, provincial and local stakeholders.

In 2007, parties adopted the UNCCD 10-year Strategic Plan and Framework (2008-2018) to enhance the implementation of the Convention. The strategic plan provides a unique opportunity to address some of the convention's key challenges, to capitalise on the strengths of the UNCCD, to seize opportunities provided by the new policy and financing environment and to create a new, revitalised common ground for all UNCCD stakeholders. Stemming from its mission, namely "to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas in order to support poverty reduction and environmental sustainability". The UNCCD 10-year Strategic Plan and Framework (2008-2018) was guided by four strategic objectives as well as five operational objectives as outlined below:

Strategic objectives

- To improve the living conditions of affected populations;
- To improve the condition of affected ecosystems;
- To generate global benefits through effective implementation of the UNCCD; and
- To mobilise resources to support implementation of the convention by building effective partnerships between national and international actors.

Operational objectives

- Advocacy, sensitisation and education;
- Establishing a policy framework;

- Utilising science, technology and know-how;
- Building capacity; and
- Providing finance and transferring technology.

The UNCCD 10-year Strategic Plan and Framework (2008-2018) came to an end in 2018.

In South Africa, the process of reviewing and updating the NAP was initiated following the new and emerging issues such as the adoption of the 17 global Sustainable Development Goals (SDGs) in particular SDG 15 target 15.3, on Land Degradation Neutrality (LDN). These bold, transformative and universal goals and its targets are the roadmap for the next 15 years amongst the three Rio Conventions (i.e. UNCCD, United Nations Convention for Biological Diversity and United Nations Framework Convention on Climate Change).

In 2015, the UNCCD endorsed and adopted the LDN target as a vehicle to drive the implementation of the Convention. Parties were further invited to (a) Formulate voluntary targets to achieve LDN in accordance with their specific national circumstances and development priorities, taking into account the list of options for operationalising LDN at national level as outlined by the Intergovernmental Working Group (IWG); (b) Use the monitoring and evaluation approach adopted in decision 22/COP.11, including the progress indicators as listed in the annex to this decision, where reliable data is available pursuant to paragraph 7 of that decision and taking into consideration national circumstances and, as needed, to add additional indicators to monitor, evaluate and communicate progress towards achieving the LDN target;

(c) Explore options on how to integrate the voluntary LDN targets in their NAPs as part of their overall discussion on the implementation of the SDGs; and to (d) Promote the use of LDN targets and projects and other sustainable land management (SLM) initiatives as an effective vehicle for mobilising additional sustainable financing and responsible and sustainable investments that address DLDD issues.

In 2017, the UNCCD adopted the second edition of the UNCCD 2018–2030 Strategic Framework (*The Strategy*). The strategy will contribute in (i) achieving the objectives of the Convention and the 2030 Agenda for Sustainable Development, in particular regarding Sustainable Development Goal (SDG) 15 and target 15.3 by 2030 and other interrelated SDGs, within the scope of the Convention; (ii) improving the living conditions of affected populations; and (iii) enhancing ecosystems services. The strategy further encourages Parties to align their National Action Programmes and other relevant national policies, programmes, plans and processes relating to desertification, land degradation and drought with the Strategy as appropriate.

To give effect to the above mentioned UNCCD decisions and also in line with the adoption of the Sustainable Development Goals, government priorities and imperatives, South Africa embarked on a process of reviewing and aligning the 2004 NAP with the objective of integrating South Africa's obligations under the UNCCD into its National Development Plans (NDPs), Government priorities and sectoral planning frameworks, strategies as well as policies through a participatory approach in line with the global guidance contained in the Strategy.

3.2 The purpose of the National Action Programme

The purpose of the NAP is to identify factors contributing to desertification, land degradation and drought as well as to implement practical measures necessary to combat desertification and to mitigate the effects of drought. To this end, the NAP sets out the respective roles of government, local communities and land users and also provides an indication of the resources that will be needed for its implementation.

An overview of the provisions contained in the NAP reveals that its intention, inter alia, is to:

- Ensure that long-term strategies to combat desertification and to mitigate the effects of drought are integrated in national policies for sustainable development and all other relevant policies as a top priority;
- Allow for modifications to be made in response to changing circumstances and to be sufficiently flexible at the local level to cope with different socio-economic, biological and geo-physical conditions;
- Pay particular attention to the implementation of preventative measures for lands that are not yet degraded or which are only slightly degraded;
- Enhance national climatological, meteorological and hydrological capabilities and the means to provide for early drought warnings;
- Promote policies and strengthen institutional frameworks which develop cooperation and coordination, in a spirit of partnership, between the donor community, government at all levels, local populations and community groups, and to facilitate access by local populations to appropriate information and technology;
- Provide for effective participation at the local, national and regional levels of non-governmental organisations and local populations (both women and men and particularly resource users, including farmers and pastoralists and their representative organisations) in policy planning, decision making and the implementation and review of national action programmes;
- Require regular review of, and progress reports on, the implementation of national action programmes;
- Combat desertification, restore, rehabilitate and conserve degraded land and soil, including land affected by desertification, drought and floods while striving to achieve LDN and sustainable development by 2030;

- (i) Promote the use and development of sustainable agriculture that preserves and restores critical habitats, helps protect watersheds and improves the health of soil and water;
- (j) Prepared and informed country on DLDD issues by raising awareness, education and capacity building (i.e. scientific, human and institutional) on issues of DLDD;
- (k) Reduction of land under rehabilitation, restoration and conservation that contribute to food security, increased GDP, and adaptation to climate while reducing country's vulnerability to disasters and;
- (l) Application of sustainable agricultural practices which protects land, water runoff, soil nutrients and genetic resources and also contribute to carbon stocks.

PART B: INTERNATIONAL POLICY CONTEXT ON DESERTIFICATION, LAND DEGRADATION AND THE EFFECTS OF DROUGHT

4. INTERNATIONAL POLICY CONTEXT ON DESERTIFICATION, LAND DEGRADATION AND DROUGHT

A number of developments in the international arena address issues relating to desertification, land degradation and drought (DLDD). South Africa has been involved in such developments and they were taken into consideration and further informed the revision of the NAP. The key developments are highlighted below amongst others:

4.1 The adoption of the first global UNCCD Strategic Plan and Framework (2008-2018)

In 2007, the UNCCD adopted the first edition of the 10-year Strategic Plan and Framework (2008-2018) to enhance implementation of the convention with an overall objective “to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas in order to support poverty reduction and environmental sustainability”.

The first edition of the strategy contains four strategic objectives, as well as five operational objectives linked to thematic areas as outlined in table 2 below:

Table 2: Summary of strategic and operational objectives of the UNCCD Global Strategy (2007-2018)

STRATEGIC OBJECTIVES	UNCCD OPERATIONAL OBJECTIVES	THEMATIC AREA
To improve the living conditions of affected populations	To actively influence relevant international, national and local processes and players in adequately addressing desertification/land degradation and drought-related issues	Advocacy, awareness raising and education
To improve the condition of affected ecosystems	To support the creation of enabling environments for promoting solutions to combat desertification/land degradation and to mitigate the effects of drought	Policy framework
To generate global benefits through effective implementation of the UNCCD	To become a global authority on scientific and technical knowledge pertaining to desertification/land degradation and mitigation of the effects of drought	Science, technology and knowledge
To mobilise resources to support implementation of the convention by building effective partnerships between national and international actors	To identify and address capacity-building needs to prevent and reverse DLDD and to mitigate the effects of climate change	Capacity building
	To mobilise and improve the targeting and coordination of national, bilateral and multilateral financial and technological resources in order to increase their impact and effectiveness	Financing and technology

4.2 Aichi biodiversity targets

In 2010, the Convention on Biological Diversity (CBD) adopted a strategic plan and the Aichi biodiversity targets. The Aichi targets are the overarching framework on biodiversity not only for the CBD but for the entire United Nations system. The mission of the Aichi targets is to “take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet’s variety of life, and contributing to human well-being, and poverty eradication”. The Aichi targets that contribute to DLDD are summarised in table 3 below.

Table 3: Aichi biodiversity targets

Aichi target 4	By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.
Aichi target 5	By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Aichi target 9	By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.
Aichi target 15	By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks have been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.
Aichi target 18	By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

4.3 Rio+20 Summit

The UNCCD made an official submission calling for a bold set of actions to be endorsed at the Rio+20 Conference. The Rio+20 outcome document called “the future we want document” on desertification, land degradation and drought is considered as one of the successes of the Rio+20 Conference wherein the world governments underline the economic and social significance of good land management, including soil, and agree to strive for a land-degradation neutral world as a tool to monitor, globally, land degradation and restore degraded lands in arid, semi-arid and dry sub-humid areas.

The concept land degradation neutrality (LDN) was born out of the United Nations Conference on Sustainable Development (Rio+20) where member states “recognized the need for urgent action to reverse land degradation”. In view of this, at Rio+20, world leaders agreed that natural capital (in particular land resources) is the foundation of our society and economy. It was this vision that guided the formulation of the Sustainable Development Goals (SDGs) and the post-2015 development agenda.

4.4 Adoption of the Sustainable Development Goals (SDGs)

In September 2015, the UN General Assembly adopted 17 SDGs, in particular SDG 15 target 15.3, on LDN (see table 4 below) which was a watershed moment for the UNCCD as this brought the convention into the realm of measurability.

Table 4: Sustainable Development Goal 15

<p>Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</p>
<p>15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.</p>
<p>15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.</p>
<p>15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.</p>
<p>15.8: By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species.</p>

The LDN target responds to the immediate challenge of how we can sustainably intensify production of food, fuel and fibre to meet future demand without further degradation of our finite land resource base. The objective of LDN is to maintain the amount of healthy and productive land resources over time in line with national sustainable development priorities through sustainable land management (SLM) practices and ecosystem restoration. The SLM enhances the resilience of land resources and communities that are directly dependent thereon while avoiding further degradation.

The UNCCD endorsed the science-based definition of LDN as a “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”. The established national LDN target and indicators for South Africa is set out in box 1 below.

Box 1: South Africa Land Degradation Neutrality targets

LDN at the national scale

- LDN is achieved by 2030 as compared to 2015 (no net loss).
- LDN is achieved by 2030 as compared to 2015 and an additional 5% of the national territory has improved (net gain).

LDN at the sub-national scale (if applicable/done)

- LDN is achieved in the grassland biome by 2030 as compared to 2015 (no net loss)
- LDN is achieved in the thicket biome by 2030 as compared to 2015 (no net loss)

Specific targets to avoid, minimize and reverse land degradation

- Improve productivity and SOC stocks in 6 000 000 hectares of cropland by 2030
- Rehabilitate and sustainably manage 1 809 767 hectares of “forest” by 2030
- Rehabilitate and sustainably manage 1 349 714 ha of fynbos by 2030
- Rehabilitate and sustainably manage 87 621 ha of thicket by 2030
- Rehabilitate and sustainably manage 2 436 170 ha of grassland by 2030
- Rehabilitate and sustainably manage 2 646 069 ha of savanna (< 5m) by 2030
- Rehabilitate and sustainably manage 149 877 ha of Succulent Karoo by 2030
- Rehabilitate and sustainably manage 528 632 ha of Nama Karoo by 2030
- Rehabilitate and sustainably manage 76 525 ha of desert by 2030
- Rehabilitate 61 900 ha of wetlands by 2030,
- Clear 1 063 897 ha of alien invasive species by 2030
- Clear 633 702 ha of bush encroached land by 2030, and
- Rehabilitate 350 000 ha of artificial areas by 2030.

4.5 Intended nationally determined contributions (INDC)

The nineteenth meeting of the Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP 19) in Warsaw called on parties to submit “intended nationally determined contributions” (INDCs). INDC identifies the actions that national government intends to take under the Paris Agreement agreed in December 2015 at the 21st session of the Conference of the Parties (COP21). INDCs are, therefore, the basis of post-2020 global emissions reduction commitments included in the climate agreement.

Land is the largest carbon storage on earth, after the oceans (Sara *et al.*, 2009). Land could take up much more carbon if it is managed sustainably. Worldwide, billions of hectares of land are degraded and they have the potential to be restored and rehabilitated. For example, the inclusion of the land sector among the sectors that are covered by the INDCs had significantly expanded country parties’ options for mitigation. By rehabilitating 12 million hectares annually over a period of 10 years can help to sequester up to 3.3 gigatonnes of CO₂ per year by 2030 which can also help to harness the mitigation potential for land and for achieving land degradation neutrality, to close the emissions gap and to keep global warming below 2°C on average.

4.6 The Paris Agreement

In 2015, the UNFCCC COP 21 adopted the Paris Agreement, which established a global goal for adaptation that seeks to enhance adaptive capacity, strengthen resilience and reduce vulnerability to climate change. The Paris Agreement acknowledges that adaptation action should consider, among other things, ecosystems. In the planning and implementation of adaptation action at the national level, parties to the Paris Agreement may include the assessment of climate change impacts and vulnerability, taking into account vulnerable people, places and ecosystems and building the resilience of socioeconomic and ecological systems.

The Paris Agreement is very important in terms of achieving the LDN target. Under baseline projections, average global temperatures could be expected to increase by 4°C, resulting in catastrophic climate change impacts, such as regime shifts in ecosystems, substantial species loss, a substantial increase in extinction risk for terrestrial and freshwater species, widespread coral reef mortality and accelerated ocean acidification. Such an increase also has the potential for “tipping points” to be crossed in some biomes with large detrimental effects on biodiversity and ecosystem services.

The aim of the UNFCCC is described in Article 2, as “enhancing the implementation” of the convention through:

- (a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognising that this would significantly reduce the risks and impacts of climate change;
- (b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production; and
- (c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

4.7 Southern African Development Community Sub-regional Action Programme to Combat Desertification (2015-2025)

The Southern African Development Community (SADC) Sub-regional Action Programme to Combat Desertification (SRAP) is an operational tool aimed at a coordinated approach towards the implementation of the convention by facilitating joint actions at the sub-regional level. As such, the SADC SRAP encompasses the management of trans-boundary natural resources and the transfer of technology, research and development as well as capacity building and public awareness.

The UNCCD Regional Implementation Annex for Africa provides detailed commitments, strategies and measures for the implementation of the convention in Africa. SADC, as one of the affected African countries, is expected to undertake joint actions at the sub-regional level for the implementation of the convention.

4.8 Drought Resilient and Prepared Africa (DRAPA) – strategic framework for drought management and enhanced resilience to drought in Africa

Drought is a complex natural hazard that is global in nature and has cross-cutting impacts on many aspects of livelihoods and sectors of society. These include agriculture, energy, food security, health, water resources, migration and resource conflict, amongst others. In responding to drought issues for the Africa region, member states adopted the DRAPA as a framework that will focus on drought risk management and enhancing resilience in Africa. The strategic framework contains six main elements in line with the priorities of African regional networks, national action programmes (NAPs) and global disaster risk reduction frameworks such as the Sendai Framework. These elements include: (i) drought policy and governance for drought risk management; (ii) drought monitoring and early warning; (iii) drought vulnerability and impact assessment; (iv) drought mitigation, preparedness and response; and (v) knowledge management and drought awareness as well as (vi) reducing underlying factors of drought risk and cross-cutting issues such as developing capacity and reducing gender and income inequality.

4.9 The UNCCD 2018–2030 Strategic Framework (The Strategy)

The 2018–2030 Strategy is aimed at achieving the objectives of the Convention and the 2030 Agenda for Sustainable Development, in particular regarding Sustainable Development Goal (SDG) 15 and target 15.3: by 2030. The vision of the Strategy is “A future that avoids, minimizes, and reverses desertification/land degradation and mitigates the effects of drought in affected areas at all levels and strive to achieve a land degradation-neutral world consistent with the 2030 Agenda for Sustainable Development, within the scope of the Convention”.

The Strategy contained five strategic objectives and its expected impacts as summarised below.

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

Expected impact 1.1 - Land productivity and related ecosystems services are maintained or enhanced;

Expected impact 1.2 - The vulnerability of affected ecosystems is reduced and the resilience of ecosystems is increased;

Expected impact 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; and

Expected impact 1.4 - Measures for sustainable land management and the combating of desertification/land degradation are shared, promoted and implemented.

Strategic objective 2: To improve the living conditions of affected populations

Expected impact 2.1 - Food security and adequate access to water for people in affected areas is improved;

Expected impact 2.2 - The livelihoods of people in affected areas are improved and diversified;

Expected impact 2.3 - Local people, especially women and youth, are empowered and participate in decision-making processes in combating DLDD; and

Expected impact 2.4 - Migration forced by desertification and land degradation is substantially reduced.

Strategic objective 3: To mitigate, adapt to, and manage the effects of drought in order to enhance resilience of vulnerable populations and ecosystems

Expected impact 3.1 - Ecosystems' vulnerability to drought is reduced, including through sustainable land and water management practices; and

Expected impact 3.2 - Communities' resilience to drought is increased.

Strategic objective 4: To generate global environmental benefits through effective implementation of the UNCCD

Expected impact 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; and

Expected impact 4.2 - Synergies with other multilateral environmental agreements and processes are enhanced.

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

Expected impact 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;

Expected impact 5.2 - 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; and

Expected impact 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.

4.10 Drought Initiative of the UNCCD

“To mitigate the effects of drought” is one of two overall objectives of the UNCCD as stated in Article 2 of the Convention text and therefore is an essential dimension of the Convention. The text of the Convention interprets this objective as activities related to the prediction of drought while intended to reduce the vulnerability of society and natural systems to drought.

The drought initiative will assist countries in developing national drought policies to mitigate drought risk. The initiative is based on three pillars: (i) monitoring and early warning systems, (ii) vulnerability/impact assessment, and (iii) practical risk mitigation measures. This will also entails an understanding of where and when drought will happen, who and what is vulnerable and why. It will further calls for information on the frequency and severity of drought to identify vulnerable groups and geographic regions, and facilitate timely development and implementation of drought impact mitigation actions. South Africa is amongst of the countries that will be piloting this initiative.

PART C: POLICY FRAMEWORK CONTEXT

5. LEGISLATION, POLICIES AND STRATEGIES ADDRESSING SUSTAINABLE LAND MANAGEMENT IN LINE WITH THE UNCCD OPERATIONAL OBJECTIVES IN SOUTH AFRICA

South Africa has a number of legislative tools, policies, strategies and plans that address the issues of DLDD which cut across the mandates of various spheres of government departments and institutions. The legislative framework relevant for DLDD is summarised in the table 5 below:

Table 5: Legislation

LEGISLATIVE/POLICY TOOL	OBJECTIVE
National Environmental Management Act, 1998 (Act No. 107 of 1998)	To provide for cooperative, environmental governance by establishing principles for decision making on matters affecting the environment, institutions that will promote cooperative governance and procedures for co-ordinating environmental functions exercised by organs of state.
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	To provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA, the protection of species and ecosystems that warrant national protection, the sustainable use of indigenous biological resources, the fair and equitable sharing of benefits arising from bio-prospecting involving indigenous biological resources.
National Environmental Management: Integrated Coastal Management Amendment Act, 2008 (Act No. 36 of 2014)	To establish a system of integrated coastal and estuarine management in the Republic, including norms, standards and policies, in order to promote the conservation of the coastal environment and maintain the natural attributes of coastal landscapes and seascapes, and to ensure that development and the use of natural resources within the coastal zone are socially and economically justifiable and ecologically sustainable; to define rights and duties in relation to coastal areas; to determine the responsibilities of organs of state in relation to coastal zone, inappropriate development of the coastal environment and other adverse effects on the coastal environment; to give effect to South Africa's international obligations in relation to coastal matters.
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)	To reform the law regulating air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development.
National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)	To provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes; for the establishment of a national register of all national, provincial and local protected areas; for the management of those areas in accordance with national norms and standards; for intergovernmental cooperation and public consultation in matters concerning protected areas.
World Heritage Convention Act, 1999 (Act No. 49 of 1999)	To provide for the incorporation of the World Heritage Convention into South African law and the enforcement and implementation of the World Heritage Convention in South Africa; the recognition and establishment of World Heritage Sites; the establishment of authorities and the granting of additional powers to existing organs of state; the powers and duties of such authorities, especially those safeguarding the integrity of World Heritage Sites; where appropriate, the establishment of boards and executive staff components of the authorities; integrated management plans for World Heritage Sites; land matters in relation to World Heritage Sites; financial, auditing and reporting controls for the authorities.
Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)	To provide a framework for spatial planning and land use management in the Republic; specify the relationship between the spatial planning and the land use management system and other kinds of planning; to provide for inclusive, developmental, equitable and efficient spatial planning at the different spheres of government; provide a framework for the monitoring, coordination and review of the spatial planning and land use management system; provide a framework for policies, principles, norms and standards for spatial development planning and land use management; address past spatial and regulatory imbalances; promote greater consistency and uniformity in the application procedures and decision making by authorities responsible for land use decisions and development applications; the establishment, functions and operations of Municipal Planning Tribunals; the facilitation and enforcement of land use and development measures.

LEGISLATIVE/POLICY TOOL	OBJECTIVE
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	To provide for the conservation of the natural agricultural resources of the Republic through the maintenance of the production potential of land by the combating and prevention of erosion and weakening or destruction of the water sources, and by the protection of the vegetation and the combating of weeds and invader plants.
Sustainable Utilisation and Protection of Agricultural Resources Bill (SUPRA)	To provide for the optimum productivity and sustainable utilisation of natural agricultural resources, the control of weeds or invader plants, and the control of the subdivision and change of utilisation of agricultural land.
National Water Act, 1998 (Act No. 36 of 1998)	To ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which, inter alia, take into account factors such as meeting the basic human needs of present and future generations; promoting equitable access to water; redressing the results of past racial and gender discrimination; promoting the efficient, sustainable and beneficial use of water in the public interest; facilitating social and economic development; providing for growing demand for water use; protecting aquatic and associated ecosystems and their biological diversity; reducing and preventing pollution and degradation of water resources; meeting international obligations; promoting dam safety; and managing floods and droughts.
National Forests Act, 1998 (Act No. 84 of 1998)	To promote the sustainable management and development of forests for the benefit of all; create the conditions necessary to restructure forestry in State forests; provide special measures for the protection of certain forests and trees; promote the sustainable use of forests for environmental, economic, educational, recreational, cultural, health and spiritual purposes; promote community forestry; promote greater participation in all aspects of forestry and the forest products industry by persons disadvantaged by unfair discrimination.
National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998)	To prevent and combat veld, forest and mountain fires throughout the Republic.
Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)	To make provision for equitable access to and sustainable development of the nation's mineral and petroleum resources.

Table 6: Policies, strategies, plans and frameworks

Policies, strategies, plans and frameworks	OBJECTIVE (summary)
Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)	Section 24 of the Constitution provides within its Bill of Rights that everyone has the right to an environment that is not harmful to their health or well-being; and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that: i) prevent pollution and ecological degradation, ii) promote conservation, and iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.
National Development Plan 2030	South Africa's National Development Plan (NDP) aims to eliminate poverty and reduce inequality by 2030. Relating to agriculture, the plan seeks to create more jobs through agricultural development, based on effective land reform and the growth of irrigated agriculture and land production; ensure that all people have access to clean, potable water and that there is enough water for agriculture and industry, recognising the trade-offs in the use of water; and to increase investment in new agricultural technologies, research and the development of adaptation strategies for the protection of rural livelihoods and expansion of commercial agriculture. These goals can be realised by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society.
National Biodiversity Framework	The purpose of the NBF is to provide a framework to co-ordinate and align the efforts of the many organisations and individuals involved in conserving and managing South Africa's biodiversity, in support of sustainable development. DLDD issues have strong links with biodiversity, and the implementation of several of the priority actions in the NBF will directly support the achievement of several of the priority activities identified in the NAP.
National Biodiversity Assessment	The purpose of the NBA is to assess the state of South Africa's biodiversity based on best available science, with a view to understanding trends over time and informing policy and decision making across a range of sectors.

Policies, strategies, plans and frameworks	OBJECTIVE (summary)
White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity	Policy objective 1.5 of the White Paper reads "restore and rehabilitate degraded ecosystems, and strengthen and further develop species recovery plans where practical and where this will make a significant contribution to the conservation and sustainable use of biological diversity".
National Climate Change Response White Paper	The purpose of the National Climate Change Response White Paper is to effectively manage inevitable climate change impacts through interventions that build and sustain South Africa's social, economic and environmental resilience and emergency response capacity and to make a fair contribution to the global effort to stabilise greenhouse gas (GHG) concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enables economic, social and environmental development to proceed in a sustainable manner.
Biodiversity Sector Climate Change Response Strategy	The purpose of the Biodiversity Sector Climate Change Response Strategy is to provide an overview of the anticipated climate change impacts on South Africa's biodiversity. The strategy highlights the key international considerations informing South Africa's biodiversity and ecosystems' climate change response. It takes cognisance of the importance of intersectoral coordination as one of the key delivery mechanisms.
Disaster Management Act, 2002 (Act No. 57 of 2002)	The purpose of the Disasters Management Act is to provide for an integrated and co-ordinated disaster management policy that focuses on preventing or reducing the risk of disasters and mitigating the severity of disasters as well as emergency preparedness, rapid and effective response to disasters and post-disaster recovery.
Biodiversity and Species Management Plans	The purpose of the Biodiversity and Species Management Plans is to provide for the long-term survival of a species in the wild and to provide a platform for an implementing organisation or responsible entity to monitor and report on the progress regarding the implementation of the Biodiversity Management Plans.
National Biodiversity Strategy and Action Plans	The National Biodiversity Strategy and Action Plans (NBSAPs) aim to conserve, manage and sustainably use biodiversity to ensure equitable benefits to the people of South Africa, now and in the future. The NBSAP includes the objective of the UNCCD which states that by 2019, a Land Degradation National Action Plan must be implemented. Furthermore, the plans aim to integrate biodiversity considerations into sector policies and legislation, including land use planning (SPLUMA) and decision-making tools for agriculture (including PDALFA, Sustainable Use and Management of Natural Resources Policy and Bill, revision of CARA), climate change, waste management, renewable and non-renewable energy, invasive alien species and land degradation.
Alien Invasive Species Regulations	Alien Invasive Species Regulations outline the procedures and criteria as contemplated in Chapter 5 of NEMBA relating to the preparation, evaluation, submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities, subject to environmental impact assessment, in order to avoid or mitigate detrimental impacts on the environment and to optimise positive environmental impacts, and for matters pertaining thereto.
Rural Development Strategy	The strategy addresses how rural communities can access and use resources, including government funds and those that can be leveraged by government funds.
National Water Resource Strategy	National Water Resource Strategy supports development and the elimination of poverty and inequality. The strategy explicitly states that water contributes to the economy and job creation and should, therefore, be protected, used, developed, conserved, managed and controlled sustainably and equitably.
Integrated Development Plans	An Integrated Development Plan is a five-year plan which local governments are required to compile to determine the development needs of each municipality.

6. SECTORAL PROGRAMMES AND INITIATIVES

Various multi-sectoral programmes are being implemented that support the objectives of the UNCCD, with many linking biodiversity conservation with socio-economic development in line with government priorities. Table 7 outlines these programmes which include initiatives with a development, social and conservation emphasis, such as programmes under the umbrella of the national Expanded Public Works Programme (EPWP). These include Working for Water, Working for Ecosystems, Working for Land, Working for Wetlands, Working for Forests, Working for the Coast and Working on Fire as well as the LandCare Programme, Integrated Sustainable Rural Development Programme (ISRDP), Community-based Natural Resource Management (CBNRM) Programme, People and Parks Programme, National Greening and Open Space Management Programme, Comprehensive Rural Development Programme (CRDP), National Rural Youth Service Corps (NARYSEC) and Participatory Forestry Management Programme amongst others.

Table 7: Programmes and initiatives

PROGRAMME	PROGRAMME OBJECTIVE	UNCCD operational objective addressed	NAP outcome addressed
Working for Water (DEA)	To control invasive alien species while promoting resource conservation and poverty reduction. While the main goal of this programme is to recover scarce water, other components include the conservation of biological diversity and the building and empowerment of local communities through job creation.	1, 5	3, 4 and 6
Working for Land (DEA)	Aimed at empowering the greater community with rehabilitated areas of land by planting trees and to make more land available for agricultural land grazing uses. This programme seeks to address degradation of land due to desertification, overgrazing, soil erosion, poor storm-water management and unsustainable farming practices.	1, 2	4, 6
Working for Wetlands (DEA)	To facilitate the conservation, rehabilitation and sustainable use of wetland ecosystems as a vehicle for poverty alleviation with an approach that centres on the creation of partnerships between landowners, communities and civil society.	1, 2	3, 4 and 6
Working on Fire (DEA)	This programme addresses the prevention and control of wild-land fires to enhance the sustainability and protection of life, property and the environment through the implementation of integrated fire management (IFM) practices.	1, 3	6
LandCare Programme (DAFF)	This programme aims to optimise and sustain resources in order to attain greater productivity, food security, job creation and a better quality of life by encouraging and supporting sustainable land use practices, raising awareness and promoting a resource conservation ethic while also reducing poverty and creating jobs through natural resource rehabilitation, improvement and conservation.	1, 2 and 5	1, 3, 4 and 6
Community-based Natural Resource Management (CBNRM) (DEA)	This programme focuses on promoting the sustainable use of communal land, optimising productivity and sustainability of resources to address food security, job creation and a better quality of life for all. It promotes rural development in communal areas with the participation of local people in natural resource conservation aiming to alleviate rural poverty by producing a range of social, economic, institutional and ecological benefits.	1, 2	1, 4
People and Parks Programme (DEA)	To invest in infrastructure development and biodiversity conservation for economic benefits; to ensure that local communities are involved in the management of protected and surrounding areas; and to ensure the promotion of biodiversity values in the proclaimed protected and surrounding areas. The overall aim of the People and Parks Programme is to address issues at the interface between conservation and communities, in particular the realisation of tangible benefits by communities who were previously displaced to pave the way for the establishment of protected areas.	3	1,4, 5 and 6
Participatory Forestry Management (DAFF)	This programme supports the sustainable use of forests and forest resources to serve the livelihoods of the poor, rural and marginalised urban communities through access to forest resources at community level and through enterprise development.	3	4
National Greening and Open Space Management (DEA)	This is an interactive and innovative programme that contributes to one of the key government priorities regarding the environment which is sustainable resource management and the targeted use of open spaces. The objective of the cleaning and greening programme is to improve the state of the environment, to create a conducive environment and to promote sustainability in disadvantaged areas.	1	4, 6

PROGRAMME	PROGRAMME OBJECTIVE	UNCCD operational objective addressed	NAP outcome addressed
Comprehensive Rural Development Programme (CRDP) (DRDLR)	This programme aims to mobilise and empower rural communities to take initiatives aimed at control of their own destiny with the support of government. The goal of the CRDP is to achieve social cohesion and development by ensuring improved access to basic services, enterprise development and village industrialisation.	5	4
National Rural Youth Service Corps (NARYSEC). (DRDLR)	To recruit unemployed youth in rural areas; to train the youth through further education and training programmes linked to the identified developmental community projects in rural areas; to equip the youth with multi-disciplinary skills through civic education; and to increase the number of rural communities receiving support in their self-development through the CRDP.	4	4
Kalahari Namib Project	Support communities and policy makers in Botswana, Namibia and South Africa to effectively implement and upscale SLM in the Molopo-Nossob catchment area, thereby contributing to the restoration of the integrity and functioning of the entire Kalahari-Namib ecosystem.	2	1,2,3,4,5 and 6

South Africa has delivered a number of best practices in which key lessons learned were identified in terms of sustainable land management and natural resources and which will be further built upon through the National Action Programme. These include, amongst others, the GEF-funded projects, programmes and other initiatives. A summary of such and interventions in particular the GEF funded projects is provided below.

(a) The Drylands Research Programme

In accordance with Article 17 of the UNCCD, “parties need to undertake and promote technical and scientific cooperation through i.e. increased knowledge of the processes leading to desertification and drought and distinction between causal factors both natural and human, with a view to combating desertification and achieving improved productivity as well as sustainable use and management of resources, develop and strengthen national, sub-regional and regional research capabilities giving particular attention to multidisciplinary and participative socio- economic research and also to take into account where relevant, the relationship between poverty, migration caused by environmental factors and desertification”. As such, South Africa through DEA developed the South African Drylands Research Programme in 2010.

The purpose of this research programme is to provide an overall framework for future research initiatives in South Africa in order to address areas of research, including:

- Preparing an overview of the current research into trends, dynamics and distribution of desertification, land degradation and drought (DLDD) in the country;
- Identifying key research areas and issues that need to be addressed to further the goal of combating land degradation and alleviating poverty; and
- Identifying the most important knowledge gaps on DLDD and to begin the process of refining the indicators set out in the UNCCD 10-year Strategic Plan and Framework (2008-2009) by customising them for South African circumstances.

(b) The Kalahari-Namib Project (KNP)

The Kalahari-Namib Project is a trans-boundary initiative between the governments of the Republic of Botswana, Namibia and South Africa. It aims to promote the joint management of the Kalahari-Namib ecosystem in Southern Africa, essentially focusing on combating land degradation and desertification while enhancing the livelihoods of communities dependent on these marginal dryland areas. Working with a variety of stakeholders through its three layers of government, the KNP is implemented in South Africa by the Department of Agriculture, Forestry and Fisheries (DAFF) in partnership with DEA and executed by the International Union for the Conservation of Nature (IUCN). The KNP is funded by the Global Environmental Facility (GEF) through the United Nations Environment Programme (UNEP). The programme falls within the GEF fourth replenishment cycle (GEF-4), i.e. the land degradation focal area, and contributes to strategic objective 2 (SO2) which is about “up-scaling Sustainable Land Management (SLM) investments that generate mutual benefits for the global environment and local livelihoods”. The project has been extended for a period of a year and will be completed in 2018.

(c) UNEP-GEF Stimulating Community Initiatives in Sustainable Land Management Project

Stimulating Community Initiatives in Sustainable Land Management (SCI-SLM) was an innovative three-year programme aimed at identifying local innovation in sustainable land management by communities in four African countries, namely Ghana, Morocco, South Africa and Uganda. The SCI-SLM project was executed by UNEP with the University of KwaZulu-Natal (UKZN) as an implementing agent. Vreij University provided technical support for the SCI-SLM project. The project’s budget amounted to R3 million, with 50% being core funding and balance coming from the participating organisations’ own contributions. This initiative embraced the principles of both the Community-based Natural Resource Management (CBNRM) and the National Action Programme (NAP). The project was completed in 2013.

(d) Securing multiple ecosystems benefit through Sustainable Land Management in the productive but degraded landscapes of South Africa, executed by UNDP

The main objective of the project is to provide incentives (capacity, financial, governance) for the adoption of knowledge based Sustainable Land Management (SLM) models for land management and land/ecosystem rehabilitation in support of the green economy and resilient livelihoods in the Karoo, Olifants and Eastern Cape. The project is guided by the following four outcomes which will contribute to the reduction of land degradation and improve ecosystem services in the Karoo, Eastern Cape and the Olifants landscapes:

- **Outcome 1:** will result in an improved natural resource management, whereby local communities and land users will be responsible for the implementation of climate-smart land/ecosystem rehabilitation and management measures;
- **Outcome 2:** will result in increased technical capacity and management of land degradation risks and uncertainties;
- **Outcome 3:** will create an enabling environment and facilitate access to the carbon market as an incentive for the adoption of SLM and;
- **Outcome 4:** will result in the development of financial and governance frameworks to support the adoption of SLM approaches.

PART D: THE REVISED AND UPDATED NATIONAL ACTION PROGRAMME

7. FRAMEWORK FOR THE NATIONAL ACTION PROGRAMME TO COMBAT DESERTIFICATION, LAND DEGRADATION AND THE EFFECTS OF DROUGHT

7.1 Structure of the NAP

The NAP as illustrated in figure 4 below is framed by an overarching vision which outlines the long-term vision for desertification, land degradation and drought in the country. This vision will be achieved through the implementation of seven outcomes.

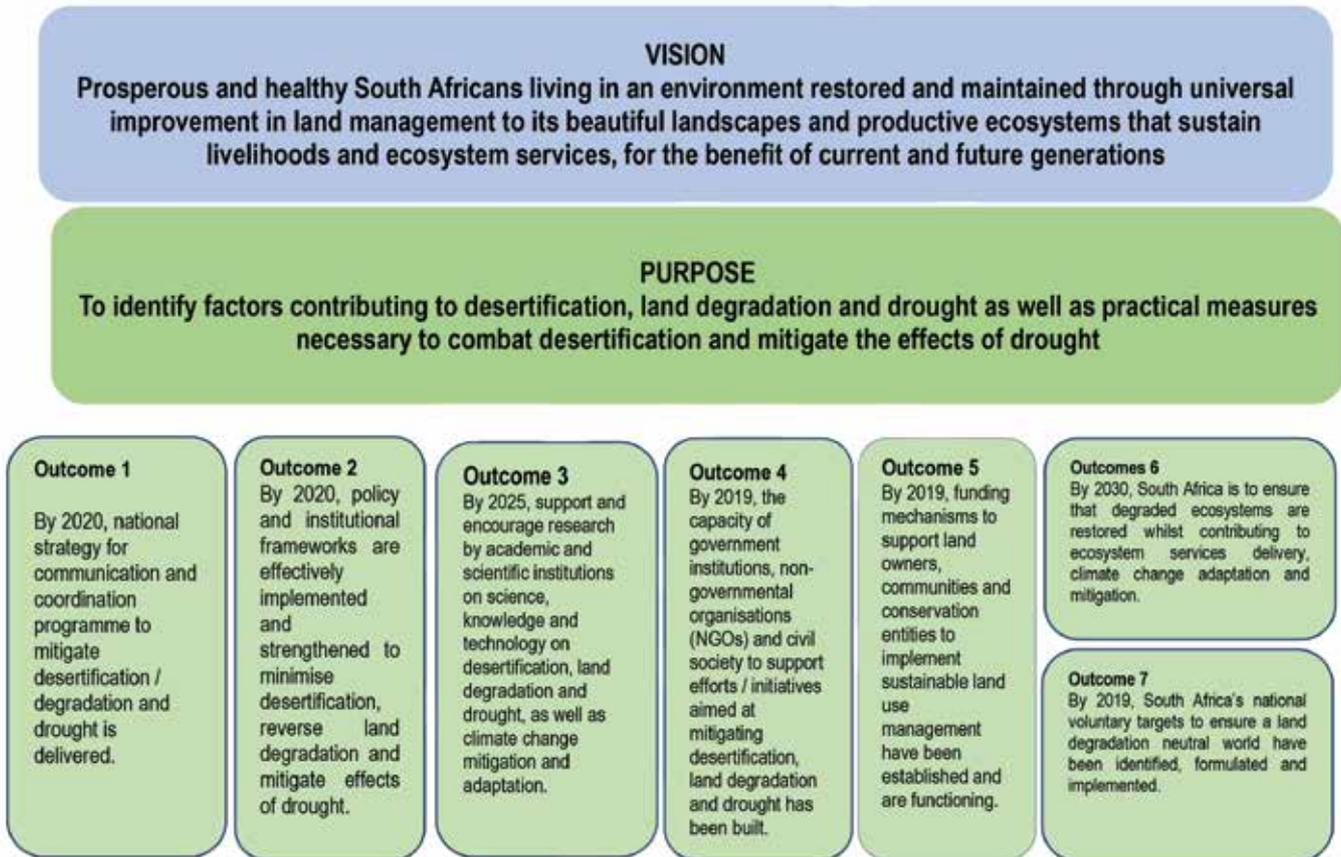


Figure 4: The vision, purpose and outcomes of the NAP

8. KEY OUTCOMES OF THE NAP

Outcome 1: By 2020, national strategy for communication and coordination of programme to mitigate desertification/ degradation and drought is delivered

The main objective of this outcome is to ensure public awareness and advocacy programmes on desertification, land degradation and drought are in place. Increasing public awareness on desertification and land degradation as well as the effects of drought is crucial to ensure South Africa smoothly implements the NAP while educating communities on sustainable land management best practices. The Department of Forestry, Fisheries and the Environment, in cooperation with other departments, will advocate public awareness on the threats and risks of unsustainable land management and the benefits of sustainable land management best practices.

Key outputs

Output 1.1: Effective mobilisation, generation and delivery of the knowledge and information required to support achievement of sustainable land management, land degradation neutrality (LDN) and land degradation-related sustainable development goals (SDGs).

Output 1.2: Promote consistent and participatory action to address the factors causing DLDD.

Outcome 1: By 2020, national strategy for communication and coordination of programme to mitigate desertification/degradation and drought must be delivered

Outputs	Activities	Target	Indicators	Key agencies	Budget
Effective mobilisation, generation and delivery of the knowledge and information required to support achievement of sustainable land management, land degradation neutrality (LDN) and land degradation-related sustainable development goals (SDGs).	Develop communication and awareness raising strategy and implementation plan for DLDD and LDN.	By 2019	One communication and awareness raising strategy.	Lead: DEA Supported by: Key national and provincial departments, public entities, local governments and civil society and non-governmental organisations	Approximately R500 000 p.a.
	Conduct awareness raising and education on DLDD and SLM at national, provincial and local level.		Number of stakeholder / public awareness events and number of people reached.		
	Develop communication materials Develop articles from published reports for DLDD and SLM awareness.	Annually	Number of communication materials developed and distributed to increase awareness of DLDD. Number of articles published on media platforms.		
	Deliver presentations on DLDD and SLM issues at various platforms Assess and integrate SLM and DLDD into school and university curriculum.	Annually	Number of presentations delivered. Number of reports on awareness conducted and number of people informed on DLDD and SLM. Number of curriculum assessment policy documents updated		
Promote consistent and participatory action to address the factors causing DLDD.	Convene learning-exchange platforms and forum for SLM	Biennially	Number of learning-exchange platforms created	Lead: DEA and DAFF Supported by: Key national and provincial departments, public entities, local governments and civil society and non-governmental organisations	Approximately R300 000 p.a.

Outcome 2: By 2020, policy and institutional frameworks are effectively implemented and strengthened to minimise desertification, reverse land degradation and mitigate effects of drought (mainstream DLDD in other relevant sector policies)

South Africa has relatively comprehensive policy frameworks in place that address and encourage sustainable land management. The main objectives of this outcome are to strengthen coordination among all the actors and to establish permanent institutional arrangements to achieve cross-sector collaboration. The strengthening of local governance structures linked to sustainable land management is also a vital component of this outcome.

Key outputs

- Output 2.1:** Implement and integrate national policies and frameworks that support sustainable land use management while strengthening institutional arrangements.
- Output 2.2:** Institutional structure put in place to strengthen cross-sector partnership on implementation of the NAP and initiatives for combating desertification.
- Output 2.3:** Leverage synergies stemming from the Rio Convention and other relevant multilateral environmental agreements at national level. **Output 2.4:** Prepare for, address, manage and minimise the impacts of drought.

Outcome 2: By 2020, policy and institutional frameworks are effectively implemented and strengthened to minimise desertification, reverse land degradation and mitigate effects of drought (mainstream DLDD in other relevant sector policies)					
Outputs	Activities	Target	Indicators	Key agencies	Budget
Implement and integrate national policies and frameworks that support sustainable land use management while strengthening institutional arrangements.	Conduct gap analysis on existing policies and strategies	By 2020	Report on gap analysis conducted on existing policies and strategies developed	Lead: DEA Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	Approximately R500 000 p.a.
	Support the integration of DLDD into relevant sector policies, regulations and legislative frameworks		Number of policies, strategies and legislation supported		
	Develop policy brief and dialogue on DLDD		Number of tools integrating SLM best practices		
Institutional structure put in place to strengthen cross-sector partnership on implementation of the NAP and initiatives for combating desertification and initiatives for combating desertification	Resuscitate the national coordinating body to oversee the implementation of NAP	By 2018	Number of policy briefs developed	Lead: DEA Supported by: Nominated institutions / organisations	Approximately R200 000 p.a.
			Number of policy dialogues on DLDD conducted		

Outcome 2: By 2020, policy and institutional frameworks are effectively implemented and strengthened to minimise desertification, reverse land degradation and mitigate effects of drought (mainstream DLDD in other relevant sector policies)

<p>Leverage synergies stemming from the Rio Convention and other relevant multilateral environmental agreements at national level.</p>	<p>Ensure consistency on national positions and implementation of decisions stemming from those positions</p>	<p>Annually</p>	<p>Number of cross-cutting issues identified</p> <p>Number of common positions developed synergistically</p>	<p>Lead: DEA (Rio Conventions national focal points).</p> <p>Supported: Relevant national and provincial departments, research and scientific institutions, academia and NGO.</p>	<p>Approximately R3 million p.a</p>
<p>Prepare for, address, manage and minimise the impacts of drought</p>	<p>Conduct risk assessment on the most affected declared drought areas in South Africa and develop mitigation measures</p>	<p>By 2019</p>	<p>Risk assessment report developed</p> <p>Drought mitigation measures for implementation developed</p>	<p>Lead: DEA and NDMC</p> <p>Supported by: research and scientific institutions, academia and key sector departments</p>	
	<p>Develop drought advocacy policy awareness programme and implementation programme.</p>	<p>By 2020</p>	<p>Drought advocacy policy and implementation plan developed</p> <p>Awareness programme in place</p>	<p>Lead: DEA and NDMC</p> <p>Supported by: SAWS, research and scientific institutions, academia and key sector departments</p>	
	<p>Strengthen early-warning systems and formulate preparedness measures to manage and mitigate the effects of drought</p>	<p>By 2020</p>	<p>Strengthened early-warning system in place</p> <p>Preparedness measures in place for drought management and mitigation</p>	<p>Lead: SAWS</p> <p>Supported by: Research institutions, academia and key sector departments</p>	
	<p>Development of national drought plan that integrate drought preparedness systems; regional efforts to reduce drought vulnerability and risk; and a framework to boost the resilience of people and ecosystems to drought</p>	<p>By 2019</p>	<p>National drought plan</p>	<p>Lead: DEA</p> <p>Supported by: Research institutions and key sector departments</p>	

Outcome 3: By 2025, support and encourage research by academic and scientific institutions on science, knowledge and technology on desertification, land degradation and drought, as well as climate change mitigation and adaptation.

The main objective of this outcome is to further and encourage more research on sustainable land management and to map the extent of desertification and land degradation in the country. South Africa, through the Department of Forestry, Fisheries and the Environment, will engage with relevant research institutions that contributes to the implementation of the NAP to consider research on DLDD related issues.

Key outputs

- Output 3.1:** Institutional partnerships among relevant academic and scientific institutions established for research on DLDD and training on SLM.
- Output 3.2:** Research initiatives by academic and scientific institutions funded to improve understanding of the science, technology and knowledge on SLM, DLDD and related issues.
- Output 3.3:** A technical skills and implementation capacity assessment conducted to determine existing gaps in available technical skills and national capacity to implement SLM and DLDD mitigation measures effectively.

Outcome 3: By 2025, support and encourage research by academic and scientific institutions on science, knowledge and technology on desertification, land degradation and drought, as well as climate change mitigation and adaptation					
Outputs	Activities	Target	Indicators	Key agencies	Budget
Institutional partnerships among relevant academic and scientific institutions established for research on DLDD and training on SLM.	<p>Establish research advisory committee that will advise on research focus</p> <p>Collate inventory database of ongoing research by other institutions on DLDD matters in South Africa.</p>	By 2019	<p>Research advisory committee established</p> <p>Research network established and operational</p> <p>Annual research plan published.</p> <p>Database of research being conducted by other institutions DLDD in South Africa.</p>	<p>Lead: CSIR/NRF/DST in coordination with NCB.</p> <p>Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations</p>	Approximately R100 000 p.a.
Research initiatives by academic and scientific institutions funded to improve understanding of the science, technology and knowledge on SLM, DLDD and related issues.	<p>Establish a coordinated resource allocation (funding) mechanism / machinery for DLDD research</p>	By 2020	<p>Amount of money dedicated to DLDD research.</p> <p>Number of published research outputs.</p>	<p>Lead: DST in collaboration with DEA.</p> <p>Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations</p>	Approximately R700 000.00 p.a.

Outcome 3: By 2025, support and encourage research by academic and scientific institutions on science, knowledge and technology on desertification, land degradation and drought, as well as climate change mitigation and adaptation

Outputs	Activities	Target	Indicators	Key agencies	Budget
A technical skills and implementation capacity assessment conducted to determine existing gaps in available technical skills and national capacity to implement SLM and DLDD mitigation measures effectively.	Conduct gap analysis on technical skills and capabilities	By 2019	Gap analysis report on technical skills and capabilities be developed	Lead: Research institutions Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	Approximately R500 000 p.a.
	Support training initiatives by academic and scientific institutions on SLM	Ongoing	Number of people trained at specified levels	Lead: DEA in consultation with the research advisory committee and NCB. Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	Approximately R400 000 p.a.

Outcome 4: By 2019, the capacity of government institutions, non-governmental organisations (NGOs) and civil society to support efforts / initiatives aimed at mitigating desertification, land degradation and drought has been built

South Africa is prone to desertification, land degradation and drought (DEA 2016a). It is, therefore, crucial for South Africa to have a national capacity-building programme in place. The main objective of this outcome is to build the capacity of communities, land managers, farmers and implementers of sustainable land management. South Africa will participate in the UNCCD's international capacity-building programmes to ensure the results are implemented at national, provincial and local level.

Key outputs:

- Output 4.1:** Support the implementation of the national capacity self-assessment (NCSA) action plans to develop the necessary capacity at individual, institutional (formal and informal) and systemic levels to tackle desertification/ land degradation and drought issues at national, provincial and local levels.
- Output 4.2:** Training and sensitisation programmes conducted in all spheres of government on implementing sustainable land management (SLM) and combating desertification, land degradation and drought (DLDD).
- Output 4.3:** Develop capacity-building programmes for combating DLDD and enabling sustainable development.

Outcome 4: By 2019, the capacity of government institutions, non-governmental organisations (NGOs) and civil society to support efforts / initiatives aimed at mitigating desertification, land degradation and drought has been built

Outputs	Activities	Target	Indicators	Key agencies	Budget
Support the implementation of the national capacity self-assessment (NCSA) action plans to develop the necessary capacity at individual, institutional (formal and informal) and systemic levels to tackle desertification/ land degradation and drought issues at national, provincial and local levels.	Capacity needs assessment on DLDD and SLM conducted	By 2019	Reports on capacity needs assessment by 2019	Lead: DEA Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	R500 000 p.a.
	Participate in GEF capacity-building projects	Annually	Reports on initiatives conducted to strengthen capacity building		

Outcome 4: By 2019, the capacity of government institutions, non-governmental organisations (NGOs) and civil society to support efforts / initiatives aimed at mitigating desertification, land degradation and drought has been built

Outputs	Activities	Target	Indicators	Key agencies	Budget
Training and sensitisation programmes conducted in all spheres of government on implementing sustainable land management (SLM) and combating desertification, land degradation and drought (DLDD).	Training on implementation of SLM and combating DLDD conducted	Annually	Number of training sessions conducted	Lead: DEA Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	R500 000 p.a.
Develop capacity-building programmes for combating DLDD and enabling sustainable development.	Capacity-building programme for combating DLDD at all levels developed	Annually	Number of capacity-building programmes provided annually	Lead: DEA Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	R500 000 p.a.

Outcome 5: By 2019, funding mechanisms to support land owners, communities and conservation entities to implement sustainable land use management have been established and are functioning

South Africa, through the implementation of the resource mobilisation strategy, will continue to mobilise financial resources for the implementation of the NAP. Such funds will be used to ensure that South Africa implements SLM best practices so as to empower rural communities and women (in other words, those who are most vulnerable to degradation-induced poverty) while promoting biodiversity conservation and sustainable use practices. The mainstreaming of funding from the private sector is also crucial if South Africa is to enhance financial resources to support small- and large-scale projects related to DLDD and SLM.

Key outputs:

- Output 5.1:** Adequate financial resources from local and international sources to support the implementation of NAP and its priorities mobilised.
- Output 5.2:** Integrated intergovernmental funding and investment model for implementing the NAP and its related programmes developed.

Outcome 5: By 2019, funding mechanisms to support land owners, communities and conservation entities to implement sustainable land use management have been established and are functioning

Outputs	Activities	Target	Indicators	Key agencies	Budget
Adequate financial resources from local and international sources to support the implementation of NAP and its priorities mobilised	Development of funding strategy.	2020	Funding strategy developed.	Lead: DEA, NCB and National Treasury Supported by: Key national departments and their entities; provincial departments and their entities; local government; civil society; non-governmental organisations; and private sector	Approximately R500 000 p.a
	Resource mobilisation and fundraising through proposals to the Global Environment Facility (GEF), donor agencies, development partners and the private sector	Every four years	Total funds mobilised for DLDD and SLM		
	A clear assessment of South Africa's financial capacity to implement DLDD and SLM-related projects conducted	By 2020	Assessment reports developed		
Integrated intergovernmental funding and investment model for implementing the NAP and its related programmes developed.	Establish a sub-committee to oversee the mainstreaming of funds from donors and national budget allocation. National co-funding and investment model developed.	By 2020	Sub-committee in place Sub-committee reports and minutes submitted Effective co-funding account by 2019	Lead: DEA and NCB. Supported by: Key national departments and their entities; provincial departments and their entities; local government; civil society; non-governmental organisations; and private sector	

Outcomes 6: By 2030, South Africa is to ensure that degraded ecosystems are restored whilst contributing to ecosystem services delivery, climate change adaptation and mitigation

The main objective of this outcome is for South Africa to restore, rehabilitate, conserve degraded ecosystems to increase land cover and land productivity while contributing to the established LDN target and indicators. South Africa like many other countries in the world is invaded by alien invasion species, bush encroachment and experiencing severe desertification and land degradation. South Africa will ensure the participation of women and youth and private sectors on issues of desertification, land degradation and drought to ensure effective implementation of the NAP through various flagships programmes.

Key outputs:

- Output 6.1:** Identification of communities and focal landscapes at high risk of desertification, land degradation and drought.
- Output 6.2:** Strengthening communities' ability to adapt to the effects of desertification, land degradation and drought.
- Output 6.3:** Reduce the combined impacts of climate change and DLDD by protecting and conserving ecosystems and their services, thereby increasing the capacity of communities to adapt to drought.
- Output 6.4:** NAP implemented in a manner that contributes to job creation and poverty reduction

Outcomes 6: By 2030, South Africa is to ensure that degraded ecosystems are restored whilst contributing to ecosystem services delivery, climate change adaptation and mitigation

Outputs	Activities	Target	Indicators	Key agencies	Estimated budget
Identification of communities and focal landscapes at high risk of desertification, land degradation and drought.	Establish monitoring and evaluation steering committee to identify communities and landscapes requiring urgent action	By 2020	Flagship programmes on focal landscapes and communities identified and prioritised by 2020	Lead: DEA Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	R100 000 p.a.
Strengthening communities' ability to adapt to the effects of desertification, land degradation and drought.	Map, monitor and, where practical and desirable, control bush encroachment and alien invasive species Restore, rehabilitate and conserve degraded ecosystems and landscapes Involve women, the youth, communities and other agencies in the restoration, rehabilitation and conservation of degraded ecosystems	Ongoing	Number of hectares / area invaded by alien species and number of hectares cleared for bush encroachment Hectares of land restored, rehabilitated and conserved Increase in number of youth and women empowered by 2025 following EPWP principles.	Lead: DEA Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	R 2 000 000 p.a.
Reduce the combined impacts of climate change and DLDD by protecting and conserving ecosystems and their services, thereby increasing the capacity of communities to adapt to drought	Promote sustainable land management and ecosystem-based adaptation of best practices Establish flagship programmes to promote community adaptation to drought, desertification and climate change	By 2025	Land productivity measured as flow of ecosystem services by 2025. Decrease in number of people negatively impacted by DLDD and climate change Increase in carbon sinks / stocks and plant biomass in degraded areas by 2030	Lead: DEA Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	R2000 000 p.a.
NAP implemented in a manner that contributes to job creation and poverty reduction	Prioritise activities and programmes that has a potential to create long-term jobs linked to SLM	Annually	Number of jobs created through rehabilitation, conservation and restoration. Number of hectares created through rehabilitation, conservation and restoration.	Lead: Inter-ministerial task team on DLDD, DEA and NCB Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	R500 000.00 p.a.

Outcome 7: By 2019, South Africa's national voluntary targets to ensure a land degradation neutral world have been identified, formulated and implemented

As one of the contracting parties to the UNCCD and affected by DLDD, South Africa established LDN voluntary targets and indicators as a means to achieve a land degradation neutral world by 2030. The majority of the population in South Africa depends on land for agriculture to sustain their livelihoods. South Africa will ensure collaboration among all actors, strengthen institutional arrangements and develop systems to monitor the implementation of the NAP in line with the established LDN targets.

Key outputs:

- Outputs 7.1:** Develop accessible GIS database for spatial distribution of areas severely and moderately affected by desertification, land degradation and drought.
- Outputs 7.2:** Conceptualise a land degradation neutrality framework for South Africa.
- Outputs 7.3:** Set targets and implement land degradation neutrality concept at national level.
- Outputs 7.4:** Implementation of land degradation neutrality targets and indicators

Outcome 7: By 2019, South Africa's national voluntary targets to ensure a land degradation neutral world have been identified, formulated and implemented					
Outputs	Activities	Target	Indicators	Key agencies	Estimated budget
Develop accessible GIS database for spatial distribution of areas severely and moderately affected by desertification, land degradation and drought	South Africa to compile GIS data on spatial distribution of degraded ecosystems to identify the extent of desertification and land degradation in the country	By 2020	Produced maps of degraded ecosystems and technical report on the extent of desertification and land degradation for quality monitoring of DLDD by 2018 Annual degradation spatial coverage report developed	Lead: DEA and NCB Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	R1 000 000 p.a.
Conceptualise a land degradation neutrality framework for South Africa	Liaise with the UNCCD secretariat on the process to operationalise the framework on LDN	By 2020	SA-specific framework for LDN	Lead: DEA	R100 000.00 p.a.
Set targets and implement land degradation neutrality concept at national level	Coordinate and facilitate national voluntary target-setting workshops	By 2018	South Africa to formulate national voluntary targets by 2018 to ensure land degradation neutrality achieved by 2030 Number of workshops conducted towards the development of national voluntary targets	Lead: DEA and NCB Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	R 100 000.00 p.a.
Implementation of land degradation neutrality targets and indicators	Action plan to prioritise LDN targets and indicators developed Restoration, rehabilitation and conservation of degraded lands in line with the established LDN targets and indicators	2018 Ongoing	Action plan to prioritise LDN targets and indicators. Number of hectares achieved	Lead: DEA and NCB Supported by: Key national and provincial departments, public entities, local government, civil society and non-governmental organisations	R3 000 000.p.a.

PART E: NAP INSTITUTIONAL ARRANGEMENTS

The NAP will be implemented over a 10-year period from 2018-2030. A 10-year period is considered realistic for South Africa to put the necessary structures in place to oversee the implementation of the NAP in line with the outcomes and outputs outlined in part D above.

The Department of Forestry, Fisheries and the Environment as the focal point of the UNCCD will coordinate and facilitate the overall implementation of the NAP. A national coordination body will be established to oversee the implementation of NAP, including its monitoring and evaluation. In addition, the committee will follow the cross-sectoral coordination approach and will draw its representatives from the NAP contributing partners.

9. NATIONAL COORDINATING BODY FOR THE UNCCD

The convention requires that parties establish a national coordinating body (NCB) to function as a catalyst in the preparation, implementation and evaluation of that party's NAP. The South African NCB will provide advisory services to the South African government through its Department of Environmental Affairs by assisting, as appropriate, with the coordination, facilitation and implementation of the UNCCD NAP taking into account government priorities and its work programme, various legislation, policies, strategies and the National Development Plan (NDP). In discharging its duties, the NCB will account to the South African government through the DEA and further endeavour to take into account South Africa's development agenda, priorities, circumstances and transformation imperatives.

Implementation of the NAP requires concerted work to follow a path agreed upon by the partners in the enterprise, i.e. DEA and other organs of state in different spheres of government, the private sector, development finance institutions, organised labour and civil society. However, it is important to use existing institutional arrangements as far as possible to achieve the improvements in coordination and integration of government initiatives needed for progress. DEA will, therefore, give effect to the requirements of the convention by reinstating the NCB for South Africa's UNCCD NAP. The NCB will meet twice per year and also in ad hoc basis as and when required.

As stated in Annexure I to the UNCCD, the purpose of the NCB and its objectives are to:

- Advise the DEA on the policy, strategy and programme for the implementation of the NAP, as well as the provisions of the UNCCD as a whole;
- Advise DEA on preparations for participation in international forums and to assist with its reporting responsibility to the Conference of Parties;
- Generally advise the DEA on its role as national focal point for the UNCCD; and
- Review NAP evaluation reports prepared by the national focal point.

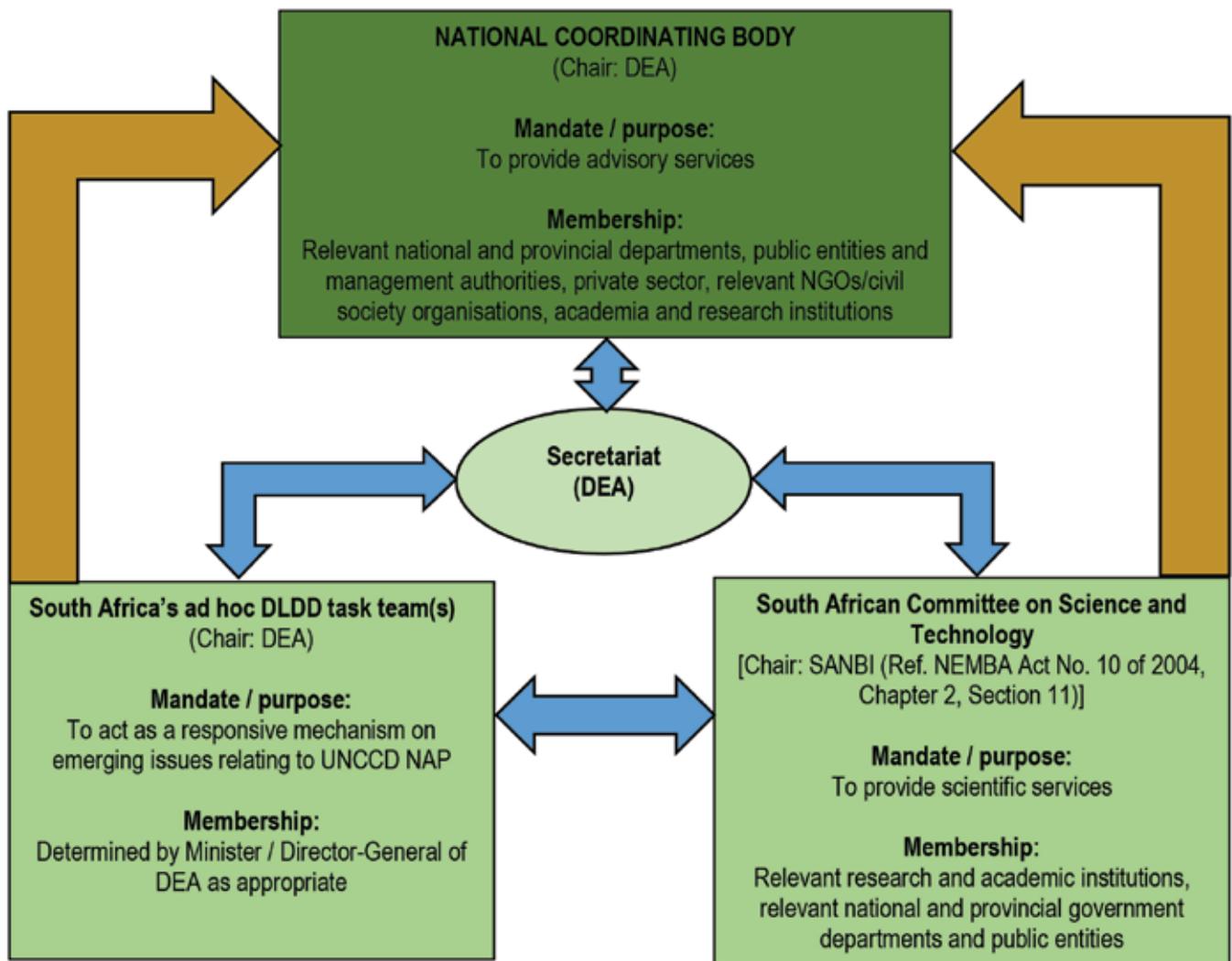


Figure 5: The NAP institutional arrangements

Box 3: The responsibility of the National Coordinating Body (NCB) as specified in Annexure I to the United Nations Convention to Combat Desertification

This coordinating body shall, in the light of Article 3 and as appropriate:

- a) undertake an identification and review of actions, beginning with a locally driven consultation process, involving local populations and communities and with the cooperation of local administrative authorities, developed country Parties and intergovernmental and non-governmental organizations, on the basis of initial consultations of those concerned at the national level;
- b) identify and analyze the constraints, needs and gaps affecting development and sustainable land use and recommend practical measures to avoid duplication by making full use of relevant ongoing efforts and promote implementation of results;
- c) facilitate, design and formulate project activities based on interactive, flexible approaches in order to ensure active participation of the population in affected areas, to minimize the negative impact of such activities, and to identify and prioritize requirements for financial assistance and technical cooperation;
- d) establish pertinent, quantifiable and readily verifiable indicators to ensure the assessment and evaluation of national action programmes, which encompass actions in the short, medium and long terms, and of the implementation of such programmes; and
- e) prepare progress reports on the implementation of the national action programmes.

10. FUNDING MECHANISMS FOR THE IMPLEMENTATION OF THE NAP

In terms of Article 20 of the UNCCD, parties to the convention are required to mobilise financial resources for the implementation of the NAP. In recognising the central importance of financing so as to achieve the objectives of the convention, country parties (taking into account their capabilities) are required to make every effort to ensure that adequate financial resources are available for programmes to combat desertification and to mitigate the effects of drought. The NAP will be funded largely through the Medium-Term Expenditure Framework (MTEF) and other donor-funded programmes and projects such as the Green Fund, Climate Change Adaptation Fund, Global Environment Facility, UNCCD's Global Mechanism and the LDN Fund, amongst others.

11. MONITORING AND EVALUATION OF THE NAP

Sound monitoring and evaluation is of critical importance for the successful implementation of the South African NAP. Monitoring and evaluation will track progress for the implementation of the NAP and ensure that the NAP is on track in terms of delivering the outlined seven outcomes of the NAP. Remedial action will be needed where this is not the case. This is a prerequisite for good governance. Monitoring and evaluation will ensure that the intended outcomes are achieved by the NAP interventions. This is critical to secure long-term funding. If it is to be implemented successfully, the NAP must be an adaptive management process that can recommend change where desired results are not being achieved either in the implementation process or in the resultant consequences of implementation. Furthermore, the NAP requires a significant commitment of human and financial resources, for which there are many competing uses. The seven outcomes of the NAP are cross-cutting in nature and will require sound monitoring and coordination to achieve the intended results per outcome. Reporting on the NAP and the state of desertification is an international obligation as a signatory to the UNCCD; consequently progress towards achieving the outcomes and the outputs of the NAP will be monitored and evaluated every three years. The NCB in collaboration with the research committee and financial sub-committee will also play a crucial role in monitoring and evaluation of the NAP by reviewing NAP outcomes and implementation thereof.

DEA will report on the state of land degradation in the country every five years. The state of the land report will be submitted to Parliament. The monitoring process must be linked to rigorous review of successes and failures and the NAP must be adjusted accordingly. This monitoring process must be closely aligned with and draw on data from, amongst others:

- State of the environment monitoring and evaluation;
- Monitoring and evaluation of SDGs;
- National LDN target setting and implementation process;
- Monitoring and evaluation of state of the forests;
- Monitoring and evaluation of agricultural resources;
- Monitoring and evaluation of drought and food security;
- Monitoring and evaluation on the number of people affected by DLDD performed by Statistics South Africa;
- Veld fire monitoring and evaluation;
- Data on changes in national land cover; and
- Others that will be identified in the process.

12. REFERENCES

- Al-Kaisi M. 2008. Soil erosion, crop productivity, and cultural practices. Bulletin PM 1870, Iowa State University.
- Archer ERM. 2004. Beyond the “climate versus grazing” impasse: Using remote sensing to investigate the effects of grazing system choice on vegetation cover in the eastern Karoo. *Journal of Arid Environments*, 57:381-408.
- Borrelli P., Ballabio C., Panagos P., & Montanarella L. 2014. Wind erosion susceptibility of European soils. *Geoderma*, 232:471-478.
- Callot Y., Marticorena B., & Bergametti G. 2000. Geomorphologic approach for modelling the surface features of arid environments in a model of dust emission: Application to the Sahara desert. *Geodinamica Acta*, 13:245-270.
- Convention on Biological Diversity. 2013. The quick guides to the Aichi Biodiversity Targets: The future we want outcome document. Rio+20 United Nations Conference on Sustainable Development, 2012.
- DEAT. 2004. National Action Programme Combating Land Degradation to Alleviate Rural Poverty. Department of Environmental Affairs and Tourism, Pretoria: South Africa.
- DEAT. 2008. A report on the state of the environment outlook, South Africa. Department of Environmental Affairs and Tourism, Pretoria: South Africa. <http://soer.deat.gov.za/22.html>
- DEAT. 2012. South Africa environmental outlook. Department of Environmental Affairs and Tourism, Pretoria: South Africa.
- DEAT. 2016a. Report on phase 1 of desertification, land degradation and drought (DLDD): Land cover mapping impact indicator of the United Nations Convention to Combat Desertification (UNCCD). Department of Environmental Affairs and Tourism, Pretoria: South Africa.
- DEAT. 2016b. Second South Africa environment outlook: Executive summary report on the state of the environment. Department of Environmental Affairs and Tourism, Pretoria: South Africa.
- Du Z., Ren T., Huc C., & Zhang, Q. 2015. Transition from intensive tillage to no-till enhances carbon sequestration in microaggregates of surface soil in the North China plain. *Soil Tillage Research*, 146:26-31.
- FAO. 1960. The state of food and agriculture. Food and Agriculture Organization of the United Nations.
- Ginoux P., Prospero JM., Gill TE., Hsu NC., & Zhao M. 2012. Global-scale attribution of anthropogenic and natural dust sources and their emission rates based on MODIS Deep Blue aerosol products. *Geographics*, 50.
- Hamdy, A. Aly, A. (2014): Land degradation, agriculture productivity and Food security; Mediterranean Agronomic Institute of Bari, Bari, Italy.
- IPBES (2018): Summary for policymakers of the thematic assessment report on land degradation and restoration of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. R. Scholes, L. Montanarella, A. Brainich, N. Barger, B. ten Brink, M. Cantele, B. Erasmus, J. Fisher, T. Gardner, T. G. Holland, F. Kohler, J. S. Kotiaho, G. Von Maltitz, G. Nangendo, R. Pandit, J. Parrotta, M. D. Potts, S. Prince, M. Sankaran and L. Willemen (eds.). IPBES secretariat, Bonn, Germany.
- Le Roux JJ, Newby TS., & Sumner PD. 2007. Monitoring soil erosion in South Africa at the regional scale: Review and recommendations. *South African Journal of Science*, 103:329-335.
- Morgan RPC. 2005. *Soil erosion and conservation*, 3rd edition. Blackwell Science Ltd.
- Oldeman LR. 1994. The global extent of land degradation. In: DJ. Greenland & I. Szabolcs, eds., *Land resilience and sustainable land use*. Wallingford: CABI (pp. 99-118).
- Pretorius DJ. 1998. The development of land degradation monitoring and auditing techniques with the aid of remote sensing and GIS technology. *ISCW Report No. GW/A/98/27*. National Department of Agriculture, Directorate Land and Resources Management, Pretoria.
- Prospero JM., Ginoux P., Torres O., Nicholson SE, & Gill TE. 2002. Environmental characterization of global sources of atmospheric soil dust derived from the NIMBUS-7 TOMS absorbing aerosol product. *Geophysics*, 40(1):1002.
- SANBI. 2011. National biodiversity assessment. South African National Biodiversity Institute, Pretoria: South Africa.
- Scherr SJ. & Sthapit S. 2009. Mitigating climate change through food and land use. *Worldwatch Institute Report*, 179. Washington D.C.

- Sharratt BS, Feng G., & Wendling L. 2007. Loss of soil and PM10 from agricultural fields associated with high winds on the Columbia plateau. *Earth Surface Processes and Landforms*, 32:621-630.
- Sterk G. & Raats PAC. 1996. Comparison of models describing the vertical distribution of wind-eroded sediment. *Soil Science Society of America*, 60:232-239.
- UNCCD. 2008. The 10-year strategic plan and framework to enhance the implementation of the convention. United Nation Convention to Combat Desertification, Madrid: Spain.
- UNCCD. 2015. Land degradation neutrality. Resilience at local, national and regional levels. United Nation Convention to Combat Desertification, Bonn: Germany.
- UNCCD. 2017. The 2018-2030 strategic framework of the convention to enhance the implementation of the convention. United Nation Convention to Combat Desertification, Ordos: China.
- United Nations Economic and Social Council. 2007. Africa Review Report on Drought and Desertification. United Nations Convention to Combat Desertification, Addis Ababa, Ethiopia.
- Visser SM. & Sterk G. 2007. Nutrient dynamics – wind and water erosion at the village scale in the Sahel. *Land Degradation and Development*, 18:578-588.
- Webb NP, McGowan HA, Phinn SR., McTainsh GH., & Leys JF. 2009. Simulation of the spatiotemporal aspects of land erodibility in the northeast Lake Eyre basin, Australia, 1980–2006. *Journal of Geographical Research*, 114.
- Wiggs GFS, Livingstone I., Thomas DSG, & Bullard JE. 1994. Effect of vegetation removal on airflow patterns and dune dynamics in the southwest Kalahari desert. *Land Degradation and Development*, 5:13-24.
- Wolfe SA. & Nickling WG. 1993. The protective role of sparse vegetation in wind erosion. *Progress in Physical Geography*, 17:50-68.
- Wood S., Sebastian K., & Scherr SJ. 2000. Pilot analysis of global ecosystems: Agroecosystems. International Food Policy Research Institute and World Resources Institute. Washington, DC: USA

**Environment House
473 Steve Biko Road
Arcadia
Pretoria
0002**

Call Centre: 086 111 2468

Website: www.environment.gov.za

ISBN: 978-0-621-49344-3



Find us:
Forestry, Fisheries and the
Environment



Follow us:
[@EnvironmentZA](https://twitter.com/EnvironmentZA)



Follow us:
[EnvironmentZA](https://www.youtube.com/EnvironmentZA)



Follow us:
[@Department of Environmental Affairs](https://www.linkedin.com/company/Department%20of%20Environmental%20Affairs)



To use this QR code
conveniently you must
have a smartphone
equipped with a camera
and a QR code reader/
scanner application
feature