

Country report for Namibia¹

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Abstract

This chapter examines the challenges and complexities of soil degradation and management in Namibia, with a particular focus on the weaknesses within the country's legal and regulatory frameworks. It underscores the key issues facing the agricultural, mining, and land use sectors, including inadequate enforcement, insufficient monitoring, and fragmented land tenure systems. These challenges contribute to ongoing soil degradation, which, in turn, threatens food security, ecosystem health, and sustainable development.

An in-depth analysis of the existing legal frameworks reveals significant gaps, particularly in the coordination and implementation of soil protection measures. The chapter pays close attention to specific legislation, such as the Soil Conservation Act, the Minerals (Prospecting and Mining) Act, and land tenure laws, all of which highlight systemic challenges, including land disputes, illegal fencing, and conflicting statutory and customary practices. Moreover, the pressures of demographic growth, urban sprawl, and emerging industries, such as green hydrogen, exacerbate the already fragmented policy landscape.

Key findings stress the urgent need for a more cohesive, integrated approach to soil governance in Namibia. The chapter offers recommendations focused on strengthening legal frameworks, improving cross-sectoral collaboration, and aligning policies across diverse sectors. Particular emphasis is placed on the need for a unified national soil policy that addresses both current and emerging challenges. It concludes by calling for greater public participation, improved coordination, and a proactive legislative approach to safeguard Namibia's soil resources, ensuring sustainable land use practices that contribute to long-term environmental and socio-economic resilience.

1 This chapter draws in parts from a book chapter authored by Ruppel, Ruppel-Schlichting, Houston & Afua (2021).

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Summary

Namibia's legislative framework for soil conservation and degradation mitigation is extensive but faces notable challenges in terms of enforcement and monitoring. Legal provisions are in place across sectors such as agriculture, mining, forestry, and urban planning, yet the effectiveness of these laws is undermined by weak enforcement and inadequate monitoring systems. While mining regulations are generally robust, the involvement of foreign investors and the challenges in ensuring environmental responsibility remain a concern. Similarly, laws addressing deforestation, invasive species, and industrial development are hindered by ineffective enforcement, continuing the risk of environmental degradation.

The rapid demographic growth and urban sprawl in Namibia place further strain on existing land-use regulations, exposing significant gaps in the current land-planning framework. The challenge is compounded by climate change, with outdated policies and legislative gaps preventing the country from effectively addressing the associated environmental impacts. Land tenure insecurity, particularly in communal areas, continues to be a critical issue. Conflicting statutory and traditional laws hinder the resolution of land disputes, contributing to land grabbing, and aggravating soil degradation. Furthermore, illegal fencing on communal lands significantly restricts access to essential resources such as grazing, firewood, and water, with slow and complex processes for removing these illegal structures.

Despite the extensive nature of Namibia's legislative framework, soil conservation efforts are hindered by the fragmentation of responsibilities between different sectors. The absence of a cohesive, unified policy to coordinate soil-related efforts has led to inefficiencies in addressing soil degradation. Contributing factors include rural poverty, population pressure, unsustainable land practices, and the impacts of climate

change. Moreover, the lack of cross-sectoral collaboration and insufficient resources further exacerbate these challenges. Bridging policy gaps, improving sector collaboration, and optimising resource mobilisation are identified as key steps for addressing soil degradation more effectively.

Namibia's soil conservation efforts are supported by several important legal frameworks, including the Soil Conservation Act, the Environmental Management Act (EMA), and sector-specific laws such as the Minerals (Prospecting and Mining) Act and the Forest Act. However, these laws are fragmented and outdated, and their implementation is weak, reducing their overall effectiveness in protecting soil health. The integration of new technologies, such as green hydrogen, into soil protection policies is also crucial, as this will ensure Namibia can meet its sustainable development goals while protecting its soil resources.

The chapter emphasises the need to address the fragmentation of responsibilities for soil conservation by establishing a central authority to coordinate all soil management activities. A unified policy framework is needed to harmonise existing laws and reduce confusion. Collaboration and communication between the various agencies and institutions responsible for soil management should also be enhanced to streamline efforts and maximise impact.

Land tenure remains a significant obstacle to effective soil conservation, particularly in communal areas. Insecure land tenure discourages long-term investment in sustainable land management practices. Reforms to formalise land tenure rights, improve transparency, and combat corruption in land allocation processes are necessary to protect soil resources. Incentives, such as subsidies for sustainable grazing practices including rotational grazing, should be introduced to encourage better land management and improve soil health, particularly in communal areas.

Integrating customary law and indigenous knowledge into soil policies can enhance their effectiveness, particularly in areas where traditional practices are still widely followed. Additionally, educating legal professionals and establishing specialised environmental courts or tribunals would improve the adjudication of environmental cases, ensuring fair and timely justice for soil-related issues. Such courts would provide expertise in environmental matters, leading to more consistent enforcement of soil protection laws.

Finally, effective soil governance requires coordinated efforts at both the domestic and international levels. Community participation is essential to ensure that soil protection efforts are inclusive and equitable. Governments, developers, civil society, and communities must collaborate to ensure that decisions affecting the environment are made transparently, fairly, and with due regard to the rights of all stakeholders.

In conclusion, strengthening Namibia's soil conservation framework requires addressing the fragmentation of legal responsibilities, improving enforcement, and integrating new challenges such as climate change and emerging technologies into policy. By enhancing cross-sector collaboration, securing land tenure, and involving

communities in decision-making, Namibia can build a more sustainable approach to soil management, safeguarding the country's natural resources for future generations.

1 Country information

Namibia, situated in southwestern Africa, has diverse landscapes, rich biodiversity, and unique cultural heritage.² Namibia's journey to independence is marked by a series of historical milestones. Initially, the inhospitable desert posed a formidable obstacle to European colonisation until the late eighteenth century.³ However, exploration efforts by traders and missionaries eventually led to German colonisation, establishing German Southwest Africa. This era came to an end with the onset of World War I, after which South Africa was mandated to take over the former German colony, marking the beginning of the South African administration.⁴

As international oversight grew through institutions, such as the League of Nations and later the United Nations (UN), pressure mounted on South Africa to relinquish control.⁵ The refusal to place Namibia under a trusteeship agreement sparked increased unrest, culminating in the revocation of South Africa's mandate over Namibia by the UN General Assembly in 1966. Subsequently, political and social tensions escalated, prompting the UN Security Council to pass Resolution 435 in 1978, paving the way for Namibia's transition to independence.⁶

On 21 March 1990, after enduring a protracted struggle, Namibia officially declared independence.⁷ This historical narrative underscores the complex colonial and post-colonial dynamics that shaped Namibia's path to self-governance.

1.1 Geography and climatic conditions

Namibia shares borders with Angola to the north, Zambia, and Zimbabwe to the north-east, Botswana to the east, South Africa to the south, and the Atlantic Ocean to the west. According to the 2024 census, the population stands at 2,641,805, with a population density of three inhabitants per square kilometre.⁸ Approximately 60% of the

2 See Ruppel & Ruppel-Schlichting (2022) for various aspects of environmental protection in Namibia.

3 Mwakikagile (2015: 26).

4 Wallace (2014: 205).

5 Wiechers (2010: 81-82).

6 *Ibid.*: 84.

7 *Ibid.*: 90.

8 See <https://www.worldometers.info/world-population/namibia-population/>, accessed 26 May 2024.

population resides in urban areas, with Windhoek serving as the capital with a population of 494,000.⁹

Covering a vast surface area of 823,290 square kilometres, Namibia's land tenure is characterised by three main categories: commercial farmland with freehold tenure (approximately 44% of the country, primarily in the south and centre), communal areas (approximately 41%, mainly in the north), and state land, including conservation areas (about 15%).¹⁰

Namibia's landscape features two deserts, the Kalahari and the Namib, earning it the title "land of savannahs" as mentioned in its national anthem. Despite its diverse terrain, Namibia is one of the driest countries in sub-Saharan Africa, with a mean annual rainfall of 278 mm, with notable fluctuations across different regions.¹¹ In the northeast, rainfall averages around 650 mm annually, while in the southwest and along coastal areas, it dwindles to less than 50 mm.

Namibia's climate is marked by high temperatures and significant regional variation. Mean annual temperatures range from 14.3°C to 24.2°C, with coastal areas cooler due to the Benguela current. Seasonal temperature changes are pronounced, with peaks before or during the wet season and lowest temperatures during the dry season. Daily maximum temperatures often exceed 40°C, and average temperatures remain above freezing year-round.

Consequently, vegetation cover is generally low, with prevalent soil types including unconsolidated sand and shallow, weakly developed soils on bedrock, leading to low water-holding capacity. Nevertheless, Namibia boasts a wide variety of vegetation types, ranging from deserts to savannahs and dry woodlands, supporting a rich and diverse mammalian fauna.¹² However, the country faces environmental challenges common to many parts of Africa, including climate change, water stress, land degradation, soil erosion, and deforestation. Addressing these issues requires concerted efforts and sustainable practices to preserve Namibia's natural heritage for future generations.

9 See [https://www.macrotrends.net/global-metrics/cities/21925/windhoek/population#:~:text=The%20metro%20area%20population%20of%20Windhoek%20in%202022%20was%20461%2C000,a%203.48%25%20increase%20from%202020.](https://www.macrotrends.net/global-metrics/cities/21925/windhoek/population#:~:text=The%20metro%20area%20population%20of%20Windhoek%20in%202022%20was%20461%2C000,a%203.48%25%20increase%20from%202020.,), accessed 26 May 2024.

10 Ruppel & von Finckenstein (2016: 311); Chlouba & He (2021: 42).

11 See [https://climateknowledgeportal.worldbank.org/country/namibia/climate-data-historical#:~:text=Historically%2C%20rainfall%20in%20Namibia%20is,and%20along%20the%20coastal%20areas.](https://climateknowledgeportal.worldbank.org/country/namibia/climate-data-historical#:~:text=Historically%2C%20rainfall%20in%20Namibia%20is,and%20along%20the%20coastal%20areas.,), accessed 26 May 2024.

12 Ruppel & von Finckenstein (2016: 311).

1.2 Economy

At independence, Namibia's economy relied heavily on primary commodities including beef, fish, and minerals.¹³ To diversify, the government prioritised value addition, manufacturing, and modernisation. Resource wealth, political stability, and sound governance elevated Namibia to upper-middle-income status and reduced poverty.¹⁴

Mining remains dominant, significantly contributing to the gross domestic product (GDP), which reached USD 12.91 billion in 2022.¹⁵ The economy grew by 4.2% in 2023, driven by mining and oil exploration. Namibia is a leading producer of diamonds, uranium, zinc, and smaller quantities of gold and copper. Marine diamond mining is increasingly important as terrestrial deposits decline.¹⁶

Foreign direct investment (FDI) inflows rose to USD 945 million in 2022, up from USD 697 million in 2021, with total FDI stock reaching USD 7.8 billion (63.6% of GDP).¹⁷ Key sectors attracting FDI include mining, tourism, agriculture, and infrastructure. The gross national income (GNI) in 2022 was USD 12.54 billion, while external debt stood at 71.6% of GDP.¹⁸

Socio-economic disparities from apartheid persist, worsened by COVID-19.¹⁹ Structural barriers such as low productivity and limited job creation continue to hinder inclusive growth, requiring targeted solutions for sustained progress.

1.3 Society

Namibia is a diverse country with a rich tapestry of ethnic groups. The largest include the Oshivambo speaking communities.²⁰ There are also communities of mixed ancestry, as well as people of European descent, including German, Dutch, and Portuguese. Additionally, smaller communities of other African nationals, as well as Chinese and Indian communities, reside in Namibia.

13 Aikins (2024: 12).

14 See <https://www.worldbank.org/en/country/namibia/overview>, accessed 26 May 2024.

15 See <https://tradingeconomics.com/namibia/gdp>, accessed 26 May 2024.

16 Wesgro (2021).

17 See <https://www.lloydsbanktrade.com/en/market-potential/namibia/investment#:~:text=FDI%20in%20Figures,63.6%25%20of%20the%20country's%20GDP.>, accessed 26 May 2024.

18 See <https://databank.worldbank.org/metadataglossary/world-development-indicators/series/NY.GNP.MKTP.KD>, accessed 8 May 2024; <https://fred.stlouisfed.org/series/MKTGNINAA646NWDB>, accessed 26 May 2024; <https://www.focus-economics.com/country-indicator/namibia/external-debt/>, accessed 26 May 2024.

19 See <https://www.worldbank.org/en/country/namibia/overview>, accessed 26 May 2024.

20 See <https://namibian.org/namibia/people/>, accessed 26 May 2024.

Namibia has a low population density overall. In terms of religion, Christianity is predominant, with 80-90% of the population adhering to the faith, and the remaining population follows traditional beliefs.²¹

Namibia's literacy rate in 2021 was 92%.²² Namibia's education system has an official primary school entrance age of seven. The primary school cycle lasts for seven years, followed by lower secondary education for three years, and upper secondary education for two years. In 2018, Namibia had 665,000 pupils enrolled in primary and secondary education.²³ Among them, approximately 72% are enrolled in primary education. In Namibia, 19% of 15-24-year-olds have not completed primary education. The tertiary school enrolment rate, as a percentage of all eligible children, was 28.37% in 2020.²⁴

Due to stronger GDP growth in both 2022 and 2023, poverty in Namibia is estimated to have decreased, but it remains high at 17.8%, based on the USD 2.15 per day international poverty line.²⁵ About 28.7% of the population in Namibia lives below the poverty line, while 15% are classified as extremely poor.²⁶ Poverty rates are higher in rural areas, with 37% of rural residents living in poverty compared to 15% in urban areas. Additionally, poverty is more prevalent among women, with 32% living below the poverty line, compared to 26% of men.

1.4 Information on the organisational structure of Namibia

Namibia is a sovereign, democratic state with three branches of government: executive, legislative, and judiciary (Constitution of 1990, amended to 2014). The President elected every five years, heads both state and government, is supported by the Cabinet and advised by the Prime Minister. Ministers and Deputy Ministers oversee various ministries.

The country is divided into fourteen regions (Article 102), each governed by Regional Councils elected by the people. Governors, appointed by the President, act as links between central and regional governments. Local authorities, including villages,

21 See <https://www.commonwealthgovernance.org/countries/africa/namibia/society/>, accessed 26 May 2024.

22 See <https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=NA>, accessed 26 May 2024.

23 Namibia National Education Profile (2018).

24 See https://www.theglobaleconomy.com/Namibia/Tertiary_school_enrollment/#:~:text=Tertiary%20school%20enrollment%2C%20percent%20of%20all%20eligible%20children&text=For%20that%20indicator%2C%20we%20provide,from%202020%20is%2028.37%20percent., accessed 26 May 2024.

25 See <https://www.worldbank.org/en/country/namibia/overview>, accessed 26 May 2024.

26 National Planning Commission, *The Root Causes of Poverty* (2023: 4).

towns, and municipalities, manage services and regulations, led by mayors or chairpersons.²⁷

Traditional leaders, chosen by customary law and recognised by the President, preserve cultural heritage and allocate communal land rights, including grazing management to prevent overuse.²⁸

The judiciary, comprising the Supreme Court, High Court, and Lower Courts, operates independently under the Constitution. Namibia's multi-party system is led by the Southwest Africa People's Organisation (SWAPO), in power since independence in 1990.

1.4.1 Legal system and legal tradition

Namibia's legal system combines Roman-Dutch civil law, English common law, South African law, and customary law.²⁹ The Constitution, as the supreme law (Article 1(6)), mandates respect for fundamental rights by all entities (Article 5), enforceable by the courts.

The Supreme Court serves primarily as an appellate body under the Supreme Court Act 15 of 1990, handling constitutional and other appeals from the High Court. The High Court, governed by the Constitution and the High Court Act 16 of 1990, is a superior court of record. Lower courts, established under the Magistrates' Courts Act 32 of 1944, include 34 permanent and 32 periodical courts, divided into a Regional Division and five administrative districts. Regional courts handle criminal cases (excluding high treason) but not civil matters.

Community Courts, created under the Community Courts Act 10 of 2003, address customary law issues in collaboration with traditional authorities and the Ministry of Justice. While Namibia adheres to the doctrine of *stare decisis*, courts may deviate from precedent when warranted by societal or legal changes.³⁰

There are no specialised environmental courts; such disputes are resolved within the general judiciary system, including the Magistrate and High Courts. The Lands Tribunal, under the Agricultural (Commercial) Land Reform Act 6 of 1995 (ACLRA), handles specific land-related cases.

27 Amoo (2020: 30-31).

28 De Villiers et al. (2019: 18-19).

29 Ruppel & Ruppel-Schlichting (2011).

30 Parker (2019: 4-5); Art 81 of the Constitution.

1.4.2 Competence of legislation

The Legislature, responsible for making laws, operates through Parliament, comprising two chambers: the National Assembly (Chapter 7 of the Constitution) and the National Council (Chapter 8 of the Constitution). Article 63(1) of the Constitution establishes the National Assembly as the primary legislative body, granting it the authority, within constitutional bounds, to enact and rescind laws for peace, order, and good governance, prioritising the welfare of the Namibian people. The primary function of the National Council is to review legislation approved by the National Assembly (Article 74 of the Constitution). It consists of three members from each of Namibia's fourteen regions, totalling 42 members (Article 69 of the Constitution).

Bills, and proposals for laws, can be initiated by Ministers or members of Parliament. The process involves drafting, Cabinet approval, and finalisation by legal drafters to ensure alignment with the Constitution. After discussion and amendments in the National Assembly, bills are sent to the National Council for review. Presidential approval is then required for them to become law (Article 56 of the Constitution). After approval, laws are published in the Government Gazette, a vital step in ensuring accessibility to the public.

Namibia follows a unitary system where the central government holds most legislative powers. The regional and local governments serve administrative purposes.³¹ However, per Articles 101 and 102(3) of the Constitution, they may adopt by-laws and regulations on local governance matters.

1.4.3 Competence of law enforcement

The Namibian Police Force is the primary law enforcement agency responsible for maintaining public safety and enforcing the law.³² The Namibian Correctional Services is tasked with the custody, care, and rehabilitation of offenders sentenced by the courts.³³ The Office of the Ombudsman in Namibia (Chapter 10 of the Constitution) plays a crucial role in safeguarding and upholding the rights of individuals, promoting the rule of law, and advancing democracy and good governance. It serves as an independent and impartial entity tasked with investigating complaints of maladministration, abuse of power, violations of human rights, and other injustices committed by public authorities.³⁴

Namibia does have various government agencies and departments responsible for environmental protection and enforcement (discussed further below). The Namibia

31 Helao & Naidoo (2016: 247 & 251).

32 Police Act 19 of 1990.

33 Correctional Service Act 9 of 2012.

34 Ruppel-Schlichting (2008: 272-273).

Defence Force also plays a role in environmental protection through its participation in anti-poaching operations.³⁵

1.4.4 The Constitution, statutory, and customary law³⁶

The Constitution safeguards fundamental rights such as language (Article 3), equality (Article 10), culture (Article 19), and religious freedom (Article 21). Article 66(1) upholds the validity of customary and common law from independence, provided they align with the Constitution and statutory laws. Article 22 allows limiting rights only under non-discriminatory laws that specify the extent and constitutional basis of the limitation.

The Traditional Authorities Act 25 of 2000 (TAA) defines customary law as norms, rules, traditions, and usages within traditional communities, covering marriage, inheritance, and land tenure.³⁷ Historically marginalised during colonial rule, customary law remains vital, especially in dispute resolution and land management.

Traditional authorities gained formal recognition at independence, growing from 36 authorities in 1990 to 51 by 2017.³⁸ Leadership structures vary:³⁹ kingdoms with powerful kings (Ovambo), chieftainships led by chiefs (Kavango, Herero), and headmanships (Himba, Nama).⁴⁰ The Damara have chief-like leaders, while the San use consensus-based decision-making. Traditional authorities enforce customary law and promote sustainable development.⁴¹ Customary laws often address environmental issues, such as the Mashi laws regulating livestock to prevent overgrazing and erosion, reflecting a commitment to conservation.⁴²

2 Soil degradation

2.1 The state of the environment

Namibia faces significant climate challenges, with rising temperatures and increased rainfall variability projected by 2065.⁴³ These changes are expected to cause heat-

35 Ministry of Environment, Forestry, and Tourism, National Report: Wildlife Protection and Law Enforcement in Namibia (2022).

36 On customary law and the environment see Hinz (2022).

37 Ruppel & Ruppel-Schlichting (2011: 39).

38 Chlouba (2019: 6); Ruppel & Ruppel-Schlichting (2011: 40).

39 For detailed information see Hinz (2010, 2013 and 2015).

40 Hitchcock et al. (2021: 269).

41 Ruppel (2022a: 107).

42 Ruppel & von Finckenstein (2016: 334).

43 Ministry of Environment, Forestry, and Tourism, Second National Integrated State of the Environment Report for Namibia (2021: xxiv).

related stress, impacting health and surpassing thresholds seen in neighbouring countries. Limited surface water and heavy reliance on groundwater worsen water scarcity, especially during recurring droughts and increased demand. Although groundwater quality is generally good, contamination from untreated wastewater and nitrates from cattle farming poses risks in populated areas.

Extensive crop cultivation and livestock farming, covering over 70% of Namibia's land, heighten vulnerability to desertification and land degradation. Shifting land use patterns show reductions in forestland, grassland, and cropland, alongside increases in wooded areas and settlements, driven by population growth, bush encroachment, urbanisation, and agricultural challenges.⁴⁴ Notably, over 43% of Namibia's land is under conservation management, with around 17% formally protected.

However, biodiversity and ecosystems are declining primarily due to human activities. Habitat loss from offshore mining, land-based pollution, invasive species, and fluctuations in the Benguela upwelling system threaten aquatic life. Wildlife crimes involving high-value species are also on the rise, complicating conservation efforts.

On a positive note, aquaculture is growing, contributing to food security, poverty reduction, and job creation, though it poses environmental management challenges. Current data shows only 17% of monitored sites in Namibia are free from soil erosion, with long-term degradation costing families on communal lands around ND 80 million annually.⁴⁵ Declining rangeland carrying capacity could lead to an annual income loss of approximately ND 1.4 billion.⁴⁶

Land degradation results from factors such as rural poverty, population pressure, poor land management, unsustainable water use, limited collaboration, and climate change.⁴⁷ Vulnerable groups are particularly at risk, threatening food security and exacerbating deforestation, erosion, and bush encroachment, especially during ongoing droughts. Protecting soil is critical for agriculture, yet communal farmers often lack resources for conservation efforts, highlighting the need for nationwide initiatives.

2.2 Different types of soil and their vulnerability in terms of degradation

Namibia has eleven primary soil types influenced by parent material, landscape position, substance accumulation, and age.⁴⁸ Arenosols, prevalent in the Namib Sand Sea and Kalahari, are deep, sandy, quartz-rich soils with low water and nutrient retention.⁴⁹ Less common soils include Vertisols, which are nutrient- and water-rich due to

44 Ibid.: xxv.

45 Minister of Agriculture, Water, and Forestry, National Rangeland Management Policy (Part 1) & Strategy (Part 2) (2012: 8-10).

46 Ibid.

47 Ruppel & von Finckenstein (2016: 312-313).

48 Jarvis et al. (2022: 149).

49 Ibid.: 150.

swelling clays; Leptosols, shallow rocky soils prone to erosion and unsuitable for crops; Regosols, young, undeveloped soils prone to erosion; Fluvisols, layered sediments from periodic flooding in riverbeds and floodplains; and Gleysols, waterlogged soils found in rivers and coastal zones with distinct grey and yellow hues.⁵⁰ Other types include Calcisols, with calcium carbonate layers in arid areas; Cambisols, early-stage soils with minimal horizon development in arid climates; and Durisols and Gypsisols, forming hardened layers or gypsum accumulations in stable, arid landscapes.⁵¹ Saline soils such as Solonchaks and Solonchets occur in coastal areas and poorly drained inland zones.

Namibia's soils pose challenges for agriculture due to low fertility, arid conditions, and variable rainfall.⁵² Issues such as limited organic matter, erosion, salinity, and nutrient imbalances further degrade soil health, restricting plant and livestock productivity.⁵³ Improved soil depth and water retention could enhance agricultural yields, making understanding these soils essential for sustainable land use.

2.3 Main drivers of soil degradation

2.3.1 Agriculture⁵⁴

Namibia's land ownership trends (1902–2018) highlight shifts, with significant growth in freehold and communal land post-1964.⁵⁵ Freehold agricultural land spans 39.7 million hectares (48% of total land), communal land 28.7 million hectares (35%), and state land 13.9 million hectares (17%).⁵⁶ Parks and restricted areas cover 13.1 million hectares of state land, with the Namib Desert accounting for 67% and Etosha National Park making up the remainder. Communal land, vital for grazing, firewood, and water, supports many households but suffers from overstocking and resource mismanagement, leading to environmental degradation. Subsistence farming provides income for 19.8% of households, mostly in rural areas (41.6%).⁵⁷

Agriculture is crucial to Namibia's economy, supporting 70% of the population and contributing 4% to GDP (6.6% in 2019).⁵⁸ Livestock farming accounts for two-thirds of agricultural output, with crop farming and forestry comprising the rest.

50 Ibid.: 149.

51 Ibid.: 151.

52 Ibid.: 147.

53 Ibid.: 159.

54 On land, soil and agriculture see Ruppel & von Finckenstein (2022).

55 Ministry of Environment, Forestry, and Tourism, Second National Integrated State of the Environment Report for Namibia (2021: xxvii).

56 Ibid.: 59.

57 Ibid.: 121.

58 GIZ (2022: 1).

Namibia exports 77% of agricultural products while importing 23%, yet domestic production meets only 43% of food demand.⁵⁹ Overgrazing, overstocking, deforestation, and unsustainable resource harvesting drive land degradation, causing soil erosion, bush encroachment, salinisation, and reduced grasslands, particularly in rural, poverty-stricken areas.⁶⁰

2.3.2 Mining

Mining is Namibia's leading primary economic sector, employing 16,342 individuals and supporting 114,394 downstream jobs in 2019, representing 15.5% of the workforce.⁶¹ Minerals dominate exports, contributing over half of the ND 31.2 billion export value in 2019, mainly from diamonds, uranium, and metal ores. However, mining significantly impacts biodiversity, especially in areas with rare species and ecosystems.

The sector's high water usage—13.13 million cubic meters in 2018/2019 (9.9% of NamWater's demand)—and the presence of 157 registered and over 250 abandoned mine sites raise concerns about groundwater and soil contamination, dust pollution, and illegal sand mining, particularly in northern regions.⁶² Environmental impacts, particularly from uranium production (Namibia is the world's fourth-largest producer), have worsened.⁶³ Land-mined diamonds, gemstones, and growing offshore diamond mining add to these challenges, intensifying threats to soil and ecosystem health.⁶⁴

2.3.3 Deforestation⁶⁵

Between 2001 and 2023, Namibia lost 1.23 million kilo hectares of tree cover, resulting in 281 kilotons of CO₂ emissions.⁶⁶ In 2024, the Ministry of Environment, Forestry, and Tourism (MEFT) emphasised how deforestation and industrial emissions are harming wildlife habitats and intensifying climate change.⁶⁷ Economic development is

59 Ibid.: 2.

60 Ruppel & von Finckenstein (2022: 380); Ruppel-Schlichting (2016: 24).

61 Ministry of Environment, Forestry, and Tourism, Second National Integrated State of the Environment Report for Namibia (2021: xxvi).

62 Ibid.

63 See <https://www.trade.gov/country-commercial-guides/namibia-mining-and-minerals>, accessed 26 May 2024.

64 Weggro (2021).

65 On forestry see von Doderer et al. (2022).

66 See <https://www.globalforestwatch.org/dashboards/country/NAM/>, accessed 26 May 2024.

67 See [https://english.news.cn/africa/20240303/b6f0764739844b709c26dfad957ac3ae/c.html#:~:text=2%20\(Xinhua\)%20%2D%2D%20Namibia's%20Ministry,hindering%20efforts%20to%20sustainably%20manage](https://english.news.cn/africa/20240303/b6f0764739844b709c26dfad957ac3ae/c.html#:~:text=2%20(Xinhua)%20%2D%2D%20Namibia's%20Ministry,hindering%20efforts%20to%20sustainably%20manage), accessed 26 May 2024.

driving forest and woodland loss, threatening endangered species' habitats, while greenhouse gas emissions are increasing the frequency of droughts and floods, undermining sustainable resource management.

Namibia's forests face threats from agriculture, wood cutting, infrastructure projects, wildfires, logging, and habitat destruction by elephants.⁶⁸ These forests are vital for soil stability, biodiversity, and socio-economic resources including fuelwood and medicinal plants. However, population growth and unsustainable timber use exacerbate deforestation and land degradation.

Namibia's participation in the Africa Forest Landscape Restoration Initiative (AFRO 100) reflects its commitment to restoring degraded landscapes by 2030, supporting climate resilience, biodiversity, and sustainable development. This proactive effort aligns with global goals to combat climate change and strengthen ecosystem resilience.

2.3.4 Weather and climate factors⁶⁹

Namibia's vulnerability to climate change is a pressing concern due to its already arid conditions and the projected impacts of increasing temperatures, variable rainfall, and sea-level rise.⁷⁰ The country's reliance on agriculture and natural resources makes it particularly susceptible to these changes, with implications for water availability, food security, and livelihoods, especially for rural populations. Even without the additional stress of climate change, water demand is expected to outstrip supply, posing a significant challenge for water management.

2.3.5 Water scarcity⁷¹

Namibia's water scarcity is a significant challenge, driven by its arid climate and low precipitation rates.⁷² With most of the country classified as desert, arid, or semi-arid, water resources are inherently limited. The high rates of evaporation further exacerbate this scarcity, with only a small fraction of precipitation contributing to surface runoff or groundwater recharge.

The reliance on perennial rivers, ephemeral river storage, and groundwater aquifers highlights the importance of sustainable water management. However, population growth and industrial development pose significant threats to water availability and

68 Ruppel-Schlichting (2016: 25).

69 On Namibia's climate change situation see Mapaure (2022).

70 Ruppel-Schlichting (2022: 70-71).

71 On Namibia's water environment see Heyns & Bethune (2022).

72 Ibid.: 69-70.

quality. The statistics from the Ministry of Agriculture, Water, and Land Reform (MAWLR) paint a concerning picture, indicating a near doubling of water demand by 2025 and a projection to reach 772 million cubic meters per year by 2030.⁷³

Namibia's Cabinet has taken proactive steps to address the impending water crisis. However, severe water shortages are expected within the next four to seven years if a viable long-term solution is not promptly implemented.⁷⁴

2.3.6 Urbanisation and infrastructure development

Namibia's urbanisation rate has experienced significant growth, reaching 52.03% from just 28% in 1991.⁷⁵ This rapid urbanisation trend reflects a shift in population distribution towards urban areas, driven by various factors such as economic opportunities, access to services, and social amenities. Projections indicate that Namibia's population is expected to continue growing, with an estimated increase of 3.98 million people by 2050.⁷⁶

The phenomenon of informal settlements is a significant aspect of urbanisation in Namibia, characterised by uncontrolled growth in many urban areas.⁷⁷ This form of urbanisation occurs through two main mechanisms: the expansion of existing urban settlements and the establishment of new ones.

Rapid urbanisation, particularly in regions such as Khomas and Erongo, brings forth two major challenges: poverty and environmental degradation. With over 90% of the population residing in urban areas in these regions, the influx of people into cities exacerbates existing issues.⁷⁸ Urban growth leads to concentrated poverty in informal settlements lacking basic services and increases environmental pressures. Air and water pollution, inadequate waste management, and habitat loss become prominent, posing health hazards and threatening biodiversity.

The escalating demand for timber as fuel and for domestic use, alongside infrastructure development, strains Namibia's environment.⁷⁹ Walvis Bay serves as a pertinent case study of a small city experiencing rapid urbanisation, leading to strains on existing infrastructure.⁸⁰

73 See [https://english.news.cn/africa/20240301/42cae2ca368a43ba9fbd1fb2b3b5a2c0/c.html#:~:text=Namibia's%20geographical%20and%20climatic%20characteristics,the%20impacts%20of%20climate%20change.](https://english.news.cn/africa/20240301/42cae2ca368a43ba9fbd1fb2b3b5a2c0/c.html#:~:text=Namibia's%20geographical%20and%20climatic%20characteristics,the%20impacts%20of%20climate%20change.,), accessed 26 May 2024.

74 Ibid.

75 Venditto et al. (2022: 2).

76 Ibid.

77 Ministry of Environment, Forestry, and Tourism, Second National Integrated State of the Environment Report for Namibia (2021: 215-216).

78 Ibid.

79 Ibid.: 82.

80 Savela et al. (2020: 50).

2.3.7 Invasive alien species

Invasive species are organisms introduced deliberately or inadvertently from one part of the world to another, where they can outcompete, prey upon, or parasitise native species.⁸¹ Namibia faces a significant challenge with invasive alien plants, with 38 trees or large shrubs, 62 flowering plants (forbs), and several grasses considered invasive.⁸² Among these, fifteen species pose serious economic and ecological threats. Many invasive shrubs are cactus species that thrive in Namibia's arid environments, while aquatic weeds can obstruct the few permanent water sources in the country. Dry riverbeds and other disturbed areas are especially susceptible to invasion, leading to diminished groundwater resources.

2.3.8 Topographic constraints

Key factors influencing soil erosion include land use (43%), topography (24%), and vegetation cover (23%).⁸³ Namibia's rugged terrain, steep slopes, and arid conditions worsen erosion, especially during intense rainfall, while sparse vegetation offers little protection.⁸⁴ This leads to fertile topsoil loss, reduced agricultural productivity, and degraded land and water resources.

A 2016 study in Windhoek highlighted severe water erosion, with 56% of the urban area affected, particularly in informal and semi-formal settlements.⁸⁵ The city's hilly topography accelerates runoff, contributing to rill and gully formation. Windhoek, hosting over 50% of Namibia's manufacturing and 80% of its finance and business services, also faces social and environmental challenges.⁸⁶

Approximately 60% of Windhoek's population are migrants, with many residing in informal settlements on steep terrain.⁸⁷ These areas often clear vegetation for housing, hygiene, and firewood, further worsening soil erosion. Population pressure and unregulated land use create a cycle of environmental degradation.

81 Hinz & Ruppel (2022: 234).

82 See <https://conservationnamibia.com/articles/invasive-alien-species-2022.php>, accessed 26 May 2024.

83 Ibid.: 29.

84 Ibid.: 8.

85 Shikangalah (2016: 44).

86 Ibid.: 14.

87 Ibid.

2.3.9 Other causes or drivers of soil degradation

Land degradation, especially desertification, threatens Namibia's communal semi-arid rangelands, home to half the population, primarily reliant on livestock farming.⁸⁸ Contributing factors include poverty, poor infrastructure, overstocking, and cultural norms valuing cattle ownership for status. A 1997 risk map identified population pressure, livestock density, rainfall, and erosion as key indicators.⁸⁹ Namibia's National Action Programme to Combat Desertification (NAP3) cites rural poverty, unsustainable water use, and weak cross-sector collaboration as major drivers.⁹⁰

Overstocking and overgrazing are critical issues in communal areas such as Northern Namibia, the Okavango River region, and the Zambezi floodplains.⁹¹ In some areas, stocking density exceeds carrying capacity by over 40%, reducing productivity and increasing erosion risk, especially during droughts.⁹² Open land access and uneven watering point distribution worsen the problem. While commercial farmers often practice rotational grazing, communal farmers face resource and infrastructure constraints.⁹³

A four-year community-based rangeland management program in communal rangelands showed mixed outcomes.⁹⁴ Though improving social and behavioural indices, it had little or no negative effects on rangeland health, cattle productivity, and household economics. Uncontrolled grazing by non-participants and unresponsive rangelands hindered results, highlighting challenges in achieving sustainable socio-economic and environmental goals.

2.4 Key actors in soil degradation

Both commercial and communal farmers contribute to soil degradation through overgrazing, poor land management, and deforestation. Government bodies including MAWLR, MEFT, and local authorities oversee soil conservation policies and programs. NGOs support these efforts through education, capacity building, and projects.

The Sustainable Environmental Education for Development (SEED) Programme, launched in 2022 with support from the Namibian Chamber of Environment, targets 500 learners across ten schools in Kunene and Erongo to foster a connection with

88 Schwieger & Mbidzo (2020: 1-2).

89 Ministry of Environment and Tourism, Land Degradation Neutrality National Report (2015: 8).

90 Ministry of Environment and Tourism, Third National Action Programme for Namibia to Implement the United Nations Convention to Combat Desertification (2014-2024: 23-27).

91 *Ibid.*: 28.

92 *Ibid.*

93 Ruppel et al. (2021: 455).

94 Coppock et al. (2022).

nature.⁹⁵ About 9% of Namibians live in communal conservancies, which sustainably manage natural resources.⁹⁶ By 2021, 86 conservancies were established.⁹⁷ The Namibian Nature Foundation (NNF) supports sustainable agriculture in Kavango and Zambezi regions, collaborating with partners to enhance food security and habitat protection for subsistence farmers in Bwabwata National Park.⁹⁸

Academic institutions such as the Desert Research Foundation of Namibia (DRFN) and the Namibia University of Science and Technology (NUST) contribute research and expertise to inform soil conservation. International agencies including the UN Development Programme (UNDP), the Food and Agriculture Organization (FAO), and the Global Environment Facility (GEF) provide funding, technical support, and expertise to bolster Namibia's soil conservation initiatives.

2.5 Conclusion

Soil degradation poses significant challenges to Namibia's agricultural productivity, environmental sustainability, and socio-economic development. Factors such as overgrazing, deforestation, inadequate land management, and climate change contribute to soil erosion, desertification, and loss of soil fertility across the country. While various actors are involved in soil conservation efforts, addressing soil degradation requires holistic approaches that integrate sustainable land management practices, policy interventions, capacity building, and community engagement. By prioritising soil conservation and adopting proactive measures to mitigate soil degradation, Namibia can safeguard its valuable natural resources, enhance food security, and promote resilient and sustainable development for current and future generations.

3 General information on public soil legislation

3.1 Policy frameworks, government strategies, action plans, etc.

3.1.1 International policies relevant to soil protection

3.1.1.1 Revised World Soil Charter

The Revised World Soil Charter (2015) is a pivotal document outlining principles and guidelines for the sustainable management and conservation of soils worldwide.

95 See <https://conservationnamibia.com/articles/seed-programme.php>, accessed 26 May 2024.

96 Conservation and the Environment in Namibia (2023: 43).

97 Hitchcock et al. (2021: 271).

98 See <https://www.nnf.org.na/>, accessed 26 May 2024.

Rooted in soils' critical role in food security, ecosystem health, and climate regulation, it underscores the urgency of protecting, restoring, and sustainably managing soils for long-term productivity and resilience. While non-binding, Namibia's endorsement of this Charter as an FAO member holds significant symbolic and political weight, signalling a commitment to global soil conservation and sustainable development efforts.

3.1.1.2 Voluntary Guidelines to Support the Progressive Realisation of the Right to Food

The Voluntary Guidelines to support the Progressive Realisation of the Right to Food were endorsed by the Committee on World Food Security at its 30th Session and adopted by the FAO Council in November 2004.⁹⁹ The Guidelines were the outcome of two years of intergovernmental negotiations involving the participation of civil society. Although they are not legally binding, the Guidelines offer policy recommendations to states and other stakeholders on various issues related to ensuring access to adequate food, including access to natural resources, education, legislation, and markets.

3.1.1.3 The 2030 Agenda for Sustainable Development instituting the Sustainable Development Goals

The global 2030 Agenda for Sustainable Development, spearheaded by the UN General Assembly, lays out seventeen Sustainable Development Goals (SDGs) with 169 associated targets.¹⁰⁰ Goal 15 takes centre stage in safeguarding terrestrial ecosystems, promoting sustainable forest management, combating desertification, and halting land degradation and biodiversity loss. Target 15.3 stands out as it aims for a land degradation-neutral world by 2030, underscoring the paramount importance of soil protection in achieving this goal. The Land Degradation Neutrality National Report on Namibia (2015) was published considering this goal.¹⁰¹ The Report states that the NAP3 already incorporates elements related to Goal 15, aiming to achieve land degradation neutrality.¹⁰² Additionally, other SDGs, such as Goal 12 for sustainable consumption and production, Goal 13 for climate action, and Goal 17 for partnership and implementation support, are also pertinent to soil conservation efforts.

99 See <https://www.fao.org/right-to-food/guidelines/en/>, accessed 26 May 2024.

100 See <https://sdgs.un.org/goals>, accessed 8 May 2024.

101 Ruppel & von Finckenstein (2016: 319).

102 National Planning Commission, Namibia's Second Voluntary National Review Report on the Implementation of the Sustainable Development Goals Towards Agenda 2030 (2021).

3.1.1.4 The land degradation neutrality initiative

Decision 36/COP.11, adopted in 2013, integrated the Namib Declaration, highlighting Namibia's commitment to strengthening the UN Convention to Combat Desertification (UNCCD) for a land degradation-neutral world.¹⁰³ The declaration emphasises enhancing UNCCD leadership, prioritising drought mitigation, improving the science-policy interface, empowering local communities, engaging the private sector, and promoting women's roles in land management. These elements collectively guide global actions to combat desertification and land degradation.

Land Degradation Neutrality (LDN), defined during the UNCCD's 12th Conference of the Parties, seeks to maintain or enhance land resources for ecosystems and food security, focusing on protecting and enhancing natural land and soil services.¹⁰⁴ Sustainable land management practices, including prevention and restoration, are vital for LDN, which requires integrated land-use planning to prevent further loss of natural capital. Namibia participated in the LDN pilot project in 2014/2015, implementing the LDN target-setting approach.¹⁰⁵

Namibia has, for instance, secured USD 150,000 from the Global Environment Facility, in collaboration with the UN Development Programme, to implement the Great Green Wall Innovation Programme aimed at combating desertification and creating productive landscapes across Africa.¹⁰⁶ Additionally, the country received USD 20,000 from the UN Convention on Biological Diversity for a bio-bridge project in the Ohangwena and Kunene regions, highlighting its commitment to LDN through targeted knowledge management and conservation efforts to promote sustainable land use and biodiversity in arid and semi-arid areas.¹⁰⁷

103 Ministry of Environment and Tourism, Concise Strategy and Action Plan for Namibia's Presidency of the 11th Conference of the Parties to the United Nations Convention to Combat Desertification (2014).

104 See <https://www.unccd.int/land-and-life/land-degradation-neutrality/overview>, accessed 8 May 2024; UNCCD-SPI Technical Series No. 01, Scientific Conceptual Framework for Land Degradation Neutrality. A Report of the Science-Policy Interface (2017).

105 See <https://www.isric.org/projects/developing-baselines-land-degradation-neutrality-target-setting-namibia>, accessed 8 May 2024; Erlewein & Hecheltjen (2018).

106 See, e.g., <https://www.namibian.com.na/namibia-making-strides-in-global-environment-agreements/>, accessed 26 May 2024; <https://www.unccd.int/our-work/ggwi#:~:text=The%20GGW%20initiative's%20ambition%20is,precious%20natural%20assets%3A%20fertile%20land>, accessed 26 May 2024.

107 See <https://www.namibian.com.na/namibia-making-strides-in-global-environment-agreements/>, accessed 26 May 2024.

3.1.1.5 Global Soil Partnership

Established in 2011, the Global Soil Partnership (GSP), under the leadership of the FAO, is committed to addressing global soil challenges.¹⁰⁸ Through collaboration among countries, international organisations, academia, civil society, and the private sector, the GSP promotes sustainable soil management practices, data collection, and awareness-raising initiatives. One of its key efforts is the development and implementation of the Voluntary Guidelines for Sustainable Soil Management (VGSSM), offering structured guidance to policymakers and stakeholders to enhance soil health and productivity while strengthening ecosystem resilience.¹⁰⁹

3.1.1.6 International Code of Conduct for the Sustainable Use and Management of Fertilisers

The International Code of Conduct for the Sustainable Use and Management of Fertilisers (2019) plays a vital role in promoting responsible fertiliser use in agriculture. It focuses on sustainable soil management, addressing nutrient imbalances, and mitigating soil pollution. The Code underscores the importance of regulations governing fertiliser products' sale, distribution, and labelling, alongside capacity development and education programs for stakeholders across the fertiliser value chain. Endorsed by the 41st Session of the FAO Conference, this Code aligns with global initiatives for sustainable agriculture and environmental preservation, including efforts such as the VGSSM.

3.1.1.7 African Union Agenda 2063

Agenda 2063, also known as 'the Africa We Want', serves as a visionary roadmap within the African Union (AU), guiding the continent's development and transformation.¹¹⁰ Adopted in 2015, it reflects Africa's collective aspirations for achieving inclusive and sustainable growth, emphasising unity, self-determination, freedom, progress, and collective prosperity. Although soil protection may not be explicitly mentioned, it is inherently tied to key components, particularly within the aspiration for inclusive growth and sustainable development (Aspiration 1).

108 See <https://www.fao.org/global-soil-partnership/en/>, accessed 8 May 2024.

109 For more information see <https://www.fao.org/policy-support/tools-and-publications/resources-details/en/c/1027927/>, accessed 8 May 2024.

110 See also the Comprehensive African Agricultural Development Programme (CAADP), which is an Agenda 2063 continental initiative designed to promote agricultural development and food security across Africa. It was established by the AU in 2003 as part of the New Partnership for Africa's Development (NEPAD) and is endorsed by African heads of state and government.

This aspiration underscores the importance of valuing and protecting Africa's natural environment and ecosystems. Additionally, the Agenda commits to ensuring effective territorial planning and land tenure, use, and management systems. It promotes techniques such as agroforestry, conservation agriculture, and land-use planning.¹¹¹

3.1.1.8 The Regional Implementation Plan for the African Soil Partnership

The African Soil Partnership (AfSP), established in 2015, aims to unlock the potential of African soils for sustainable development, with a primary focus on food security and agricultural productivity.¹¹² Representing member nations from Sub-Saharan Africa, the AfSP recognises the diversity of African soils and seeks to promote sustainable land management practices to achieve broader development goals.

The Regional Implementation Plan for the AfSP (2016) underscores the pivotal role of soil for rural communities in Sub-Saharan Africa, particularly given the projected significant population increase by 2030. To address these challenges, the implementation plan prioritises enhancing food production and security, restoring land, and bolstering agricultural resilience to climate change. It delineates specific activities, budgets, and timelines for achieving sustainable soil management, calling for collaborative efforts from national governments and entities involved in natural resource management.

3.1.1.9 Framework and Guidelines on Land Policy in Africa

The Framework and Guidelines on Land Policy in Africa, established in 2010 through collaboration between the AU, the UN Economic Commission for Africa, and the African Development Bank (AfDB), are designed to advance Africa's socio-economic development by addressing land policy challenges comprehensively. This Framework offers a thorough examination of the historical, political, economic, and social dimensions of land in Africa, underlining its significance for economic growth and poverty alleviation.

While not explicitly centred on soil management, the Framework and Guidelines indirectly promote soil conservation and sustainable land use practices. By advocating for secure land tenure, it creates an enabling environment for soil management and conservation endeavours.

111 See Sheppard et al. (2020).

112 See <https://www.fao.org/global-soil-partnership/regional-partnerships/africa/en/>, accessed 8 May 2024.

3.1.1.10 Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods

The Malabo Declaration, ratified by the AU in 2014, represents a significant policy initiative delineating agricultural objectives to be achieved by 2025. It highlights the central importance of agriculture in driving economic growth, reducing poverty, and ensuring food security throughout Africa. With a focus on sustainable agricultural practices, the Declaration seeks to enhance productivity, increase food accessibility, and elevate livelihoods across the continent.

3.1.1.11 Sirte Declaration on the Challenges of Implementing Integrated and Sustainable Development on Agriculture and Water in Africa

The Sirte Declaration on the Challenges of Implementing Integrated and Sustainable Development of Agriculture and Water in Africa, originating from the 2004 AU Summit in Libya, stands as a seminal policy document. It underscores the critical interdependence of agriculture and water for ensuring food security, driving economic growth, and maintaining environmental sustainability. Advocating for holistic approaches, the Declaration emphasises the need to leverage scientific research in agricultural planning to address challenges such as desertification, soil and water conservation, and environmental preservation.

3.1.1.12 African Union Climate Change and Resilient Development Strategy and Action Plan

The AU Climate Change and Resilient Development Strategy and Action Plan (2022-2032) stands as a pivotal framework to address climate change challenges and promote sustainable development throughout Africa. Centred on bolstering the resilience of African communities, ecosystems, and economies, the Strategy supports regional adaptation efforts. It delineates key strategic intervention axes, including strengthening governance and policy, adopting transformative climate-resilient development pathways, enhancing means of implementation, and leveraging regional flagship initiatives. One proposed action entail promoting soil biodiversity and managing soil organic carbon, essential for maintaining land productivity, water storage, erosion control, stability during extreme weather events, and carbon mitigation.

3.1.1.13 Soil Initiative for Africa

In 2020, during the Alliance for a Green Revolution in Africa Forum (AGRF), the AU proposed the establishment of the Soil Initiative for Africa (SIA), aiming to systematically enhance the health and productivity of Africa's soils over the long term.¹¹³ The initiative entails implementing policies, programs, and institutional structures to establish an effective soil management system across the continent. Both the SIA Framework Document, which outlines the long-term vision, and the Africa Fertiliser and Soil Health Action Plan, covering a ten-year horizon, are set to be officially endorsed and launched at the Africa Fertiliser and Soil Health Summit in 2024.¹¹⁴

3.1.1.14 Africa Fertiliser and Soil Health Summit

During the Africa Fertiliser and Soil Health Summit in Nairobi, Kenya, on 9 May 2024, AU heads of state and government tackled crucial issues concerning fertiliser use and soil health. The Summit concluded with the Nairobi Declaration, committing African leaders to enhance agricultural sustainability, improve smallholder farmer livelihoods, and boost local fertiliser production across the continent. The Summit's theme, "Listen to the Land", emphasised the importance of combating soil degradation to increase agricultural productivity and ensure food security. The ten-year Action Plan, detailing specific steps for leaders and stakeholders over the next decade, is a key aspect to monitor.

3.1.1.15 Other regional and sub-regional commitments of South Africa relevant to sustainable soil management

The Southern African Development Community (SADC) has crafted Vision 2050 as a strategic roadmap to realise a peaceful, inclusive, competitive, and industrially developed region by 2050. Under the pillar of Industrial Development and Market Integration, the aim is to cultivate a revitalised agricultural sector that prioritises sustainable management of the environment and its natural resources. Within the pillar of Social and Human Capital Development, a central objective is to bolster food and nutrition security to advance socio-economic prosperity across the region. Moreover, there is a dedicated focus on mitigating and adapting to the impacts of climate change.

The SADC Climate Change Strategy and Action Plan (2020-2030) serves as a comprehensive framework designed to tackle climate change challenges within the

113 See <https://faraafrica.org/soil-initiative-for-africa/>, accessed 8 May 2024.

114 See <https://au.int/en/AFSH-2024>, accessed 8 May 2024.

region.¹¹⁵ Emphasising the significance of collective action, capacity-building, and innovative strategies, the strategy aims to effectively address climate change impacts and build resilience across SADC member states.

The SADC Protocol on Forestry, initiated in 2002, functions as a regional policy framework aimed at enhancing collaboration in forestry activities across the region. Through the promotion of sustainable forestry practices, the protocol indirectly contributes to soil health. Healthy forests serve as vital components in preserving soil integrity and fertility by mitigating erosion, maintaining soil structure, and facilitating nutrient cycling.

The Regional Agricultural Policy of SADC ratified in 2014, acts as a strategic blueprint to standardise and improve agricultural methods throughout the region. In combating soil degradation, the policy suggests several interventions. These include advocating for integrated soil fertility management programs customised to diverse soil conditions, encouraging collaboration between the private and public sectors to optimise fertiliser production and distribution, and aligning regulations for the responsible use and disposal of fertilisers and agrochemicals.

3.1.2 National policies relevant to soil protection

3.1.2.1 Third National Action Programme for Namibia

The Namibian Program to Combat Desertification (NAPCOD) was implemented from 1994 to 2005 with a strategic focus on fostering collaboration across sectors, particularly between the environment and agriculture sectors.¹¹⁶ It aimed to raise awareness about the causes and effects of land degradation at national and local levels. NAPCOD also enhanced information on the location and rate of land degradation through a national indicator-based monitoring system. At the local level, NAPCOD activities included establishing Forums for Integrated Resource Management (FIRMs) and implementing the Local Level Monitoring (LLM) tool. These participatory approaches were designed for use by local resource managers.

Following NAPCOD, the Country Pilot Partnership (CPP) Programme was launched in 2007 as a comprehensive initiative to reverse land degradation in Namibia. The CPP aimed to address the root causes of land degradation through integrated cross-sectoral approaches.

The NAP3 is the framework for implementing the UNCCD between 2014 and 2024. Focused on sustainable land management, NAP3 addresses key challenges exacerbated by Namibia's arid climate. Identified issues include overgrazing,

115 See <https://www.sadc.int/pillars/environment-climate-change>, accessed 8 May 2024.

116 Ministry of Environment and Tourism, Third National Action Programme for Namibia to Implement the United Nations Convention to Combat Desertification (2014-2024).

overstocking of land, and water and soil degradation. NAP3 outlines practical steps to tackle these challenges, including awareness-raising and education initiatives, ensuring the availability of reliable data to inform policymaking, and establishing an effective monitoring system.

3.1.2.2 National Agricultural Policy

In 1995, Namibia's first National Agricultural Policy was introduced to guide the agricultural sector's development. It aimed to boost food production by smallholder farmers, enhancing employment, incomes, food security, and nutrition. While avoiding long-term subsidies, the policy allowed targeted subsidies for short-term goals.¹¹⁷ It emphasised the need to address land degradation, limited water resources, and the environmental impacts of agriculture, encouraging Environmental Impact Assessments (EIA) and reviewing agrochemical legislation.

In 2015, following a review and consultation process, a new National Agricultural Policy was launched. It encompasses various aspects, including land use, natural resource management, and sustainable farming practices. The Policy emphasises the importance of promoting agricultural productivity while ensuring environmental sustainability and resilience to climate change. Additionally, the Policy stipulates that the government will support research on technologies for enhancing soil fertility and enforce soil conservation through the implementation of relevant legislation.

3.1.2.3 National Drought Policy and Strategy

The National Drought Policy and Strategy of 1997 includes provisions to reduce long-term vulnerability to drought by improving soil fertility and moisture retention, necessitating sustainable farming methods. Similarly, the Regional Planning and Development Policy of 1997 promotes strategies such as controlled grazing cycles to mitigate soil degradation. However, some measures outlined in the Drought Policy, such as subsidies on fodder, have been found to contradict this objective.¹¹⁸

The National Drought Policy and Strategy shifts the responsibility for drought management from government-aided relief to empowering farmers with appropriate farming techniques to better cope with droughts. However, responses to crop failures in the north and northeast have reverted to relief programs.¹¹⁹ Drought preparedness is a crucial aspect of sustainable resource use, and conservancies throughout the country strongly advocate it.

117 Ruppel & von Finckenstein (2016: 324).

118 Ruppel & von Finckenstein (2022: 394).

119 Ibid.: 389.

The successful implementation of the Dry Land Crop Production Programme by the MAWF has contributed to increased food production and security in Namibia.¹²⁰ The Dry Land Crop Production Programme (DCPP) aims to enhance crop production, bolster food security, generate employment, and alleviate poverty and income disparities.

3.1.2.4 National Biodiversity Strategy and Action Plan

Namibia's Second National Biodiversity Strategy and Action Plan 2013-2022 (NBSAP) is a comprehensive framework aimed at conserving and sustainably managing the country's rich biodiversity. The Plan outlines strategies and actions to address key biodiversity challenges and promote the sustainable use of natural resources. Intact and healthy ecosystems, with their diverse array of plant and animal species, provide a wide range of essential benefits that support human well-being and the functioning of the planet. Clean air, clean water, and fertile soils are just a few of the critical ecosystem services that biodiversity helps to provide.

3.1.2.5 National Climate Change Policy

Namibia's National Policy on Climate Change, launched in 2011, provides a coherent, transparent, and inclusive framework for climate risk management. It aligns with Namibia's national development agenda and legal framework, acknowledging environmental constraints and vulnerabilities.¹²¹ The Policy aims to support sustainable development in line with Vision 2030 by enhancing national capacities to reduce climate change risks and build resilience. It also guides the government in developing climate-specific legislation for policy implementation.

The National Climate Change Strategy and Action Plan 2013-2020 (NCCSAP) of Namibia is a comprehensive framework designed to address the challenges posed by climate change. The NCCSAP outlines strategic interventions and actions to enhance Namibia's resilience to climate change impacts, mitigate GHG emissions, and promote sustainable development. The NCCSAP also provides an overview of the various regions in the country and their unique soil status.

120 See <https://afriagrimgazine.com/namibia-implements-dry-land-crop-production-program/>, accessed 26 May 2024.

121 Ruppel & von Finckenstein (2016: 325-326).

3.1.2.6 Forestry Strategic Plan

The Forestry Strategic Plan of Namibia 1996 is a crucial document outlining the country's forestry development goals at that time.¹²² The Forest Policy 2001 prioritises both conservation and sustainable utilisation of forests to improve the economic well-being of rural communities, contributing to the national poverty reduction plan. This is achieved through the Forest Act 12 of 2001.

Key elements of the Policy include effective property rights, a supportive regulatory framework, extension services, community forestry, and education.¹²³ In 2005, the Community Forestry Guidelines were introduced to help stakeholders establish and manage community forests, detailing legal procedures, organisational arrangements, and the roles of government officials and communities.

3.1.2.7 Wildlife Management, Utilisation, and Tourism in Communal Areas Policy

The Wildlife Management, Utilisation, and Tourism in Communal Areas Policy was approved by the Namibian Cabinet in 1995. This Policy aimed to grant rights over wildlife and tourism to residents of communal land. It facilitated the formation of common property resource management institutions known as conservancies. The Promotion of Community-Based Tourism Policy (1995) aimed to involve local communities, provide conservation incentives, address historical inequities, and promote sustainable utilisation.

3.1.2.8 National Policy on Community-Based Natural Resource Management

Namibia's Community-Based Natural Resource Management Programme (1996) is a combination of policy and legal reforms. It includes granting resource rights to local members of communal conservancies. These reforms empower communities to manage wildlife and benefit from tourism on communal land, fostering sustainable conservation and economic opportunities.

The 2013 version aims to provide a framework for the sustainable use of Namibia's natural resources. It promotes integrated land and natural resource planning and decision-making, considering land capability, economic return, and environmental, and human needs.¹²⁴ The Policy seeks to incentivise and provide economic benefits to rural communities for sustainable resource management. Key objectives include conserving

122 See <https://www.fao.org/4/AC917E/AC917E05.htm>, accessed 26 May 2024; Ministry of Agriculture, Water, and Forestry, Strategic Plan (2017/2018-2021/2022).

123 Ruppel (2022a: 89).

124 Ibid.: 86-87.

biodiversity using traditional knowledge, protecting communities' intellectual property rights related to natural resource management and commercialisation, and supporting rural communities in sustainable resource management.

3.1.2.9 National Policy on Sub-Division and Consolidation of Agricultural Land

The National Policy on Subdivision and Consolidation of Agricultural Land in Namibia aims to prevent land subdivision, promote land consolidation for agricultural entrepreneurs, and provide a harmonised legal framework. Issued in 2018, this Policy manages the use and distribution of agricultural land to balance agricultural productivity with sustainable land management practices, ensuring optimal use of agricultural resources for national development goals.

3.1.2.10 Land-use planning: Towards sustainable development

In 1994, a policy document was drafted outlining five physiographic landforms: communal state land, privately-owned commercial farmland, proclaimed state land, urban areas, and wetland systems, along with their catchment areas. The Policy emphasises sustainability, preserving natural resources, biodiversity, and essential ecological processes.

The Regional Planning and Development Policy, drafted in 1997, acknowledges the increasing degradation of pastures, rangelands, and woodlands. It emphasises soil, water, and forest management as critical development tools, promoting strategies such as soil conservation and controlled grazing cycles.

3.1.2.11 Environmental Assessment Policy

The Environmental Assessment Policy (1995) aims to achieve sustainable development and environmental conservation. It recognises the importance of economic development, poverty alleviation, and addressing historical inequities while safeguarding ecosystems and natural resources.

3.1.2.12 National Land Policy

The National Land Policy, formulated in 1998, aligns with constitutional principles and addresses historical social and economic injustices stemming from Namibia's colonial era. Central to this Policy is the establishment and proclamation of urban areas

as townships and municipalities, aiming to foster decentralisation and community involvement. It advocates for financial and tax incentives to encourage protecting and rehabilitating natural environments, including initiatives such as planting indigenous trees and adopting alternative energy sources to curb deforestation and pollution. One aim of this Policy is to establish a Land Use and Environmental Board (LUEB) to promote environmental protection and support coordinated planning and management at national and regional levels.¹²⁵ The LUEB will ensure that environmental protection is upheld to guarantee environmental, social, and economic sustainability.

The National Land Use Planning Policy was drafted in 2002. It provides a framework for implementing regionally integrated land use plans.¹²⁶

3.1.2.13 National Resettlement Policy

The National Resettlement Policy (2001) allows for the subdivision of large-scale commercial farms into smaller portions (1,500 to 3,000 hectares) to enhance productivity for resettled individuals, who are often better suited to manage small-scale farms.¹²⁷ The program, overseen by the MAWLR, seeks to resettle poor and landless Namibians on state-acquired commercial land, addressing unequal land distribution alongside the Resettlement Policy.¹²⁸

The Revised National Resettlement Policy (2023-2033), implemented in 2024, aims to support previously disadvantaged Namibians without sufficient agricultural land, focusing on those impacted by past discriminatory practices.¹²⁹ It classifies beneficiaries into three groups—commercial farmers on leased land, communal farmers, and non-farming individuals—and establishes three resettlement models based on economic value. The policy also grants freehold rights to beneficiaries meeting lease conditions and provides tailored support to promote agricultural productivity and sustainable land management. Successful implementation will depend on regional resettlement committees and community involvement, supported by an educational campaign.

Lawmakers highlighted challenges faced by farmers, including limited access to capital and training, water scarcity, and difficulties securing loans.¹³⁰ In response, the Deputy Minister of Agriculture, Water, and Land Reform mentioned a ND 30 million revolving fund since 2009 that offers no-collateral loans of ND 200,000, although 48%

125 Ruppel & von Finckenstein (2016: 323).

126 Ruppel (2022a: 85).

127 Shigwedha (2004).

128 Haimbili (2024: 36-37).

129 See <https://economist.com/na/86459/community-and-culture/updated-national-resettlement-policy-to-be-implemented-from-april/>, accessed 3 August 2024.

130 See <https://namibianfarming.com/resettlement-boost-government-mulls-bumping-up-loans-for-farmers/>, accessed 3 August 2024.

remain unpaid.¹³¹ Discussions are underway to potentially double the loan amount to ND 500,000 to enhance support for resettled farmers.¹³²

3.1.2.14 National Land Tenure Policy

The National Land Tenure Policy encompasses all land tenure systems in urban, communal, commercial (freehold), and resettlement areas, aiming to guide land tenure rights across Namibia.¹³³ It promotes the sustainable use of land and resources, regulates different land tenure systems, provides secure tenure for informal urban settlers, farm workers, and occupiers (those employed less than ten years on a single farm without secure tenure elsewhere), and outlines compensation guidelines for occupiers of expropriated land.

3.1.2.15 Green Scheme Policy

The Green Scheme Policy (2003) provisions several irrigation projects in Namibia. Conducted by the MAWF, the Green Scheme aims to boost irrigation-based agronomic production, thereby, increasing agriculture's contribution to Namibia's GDP. The initiative seeks to promote social development and uplift communities in suitable irrigation areas, enhance human resource and skills development within the irrigation sub-sector, and encourage cross-border investment and resource exchange with neighbouring countries.

However, the Policy's implementation has been inconsistent, facing several challenges.¹³⁴ A major concern is the potential biodiversity loss if the project expands as planned.¹³⁵ Additionally, the GSP has been criticised for overly focusing on irrigation schemes as the main driver of agricultural production, despite Namibia's status as one of the driest countries.

3.1.2.16 National Rangeland Management Policy and Strategy

The National Rangeland Management Policy and Strategy, established in 2012, aims to address the degradation of Namibia's rangelands. It focuses on sustainable

131 Ibid.

132 Ibid.

133 Ruppel & von Finckenstein (2016: 323).

134 Mughongora (2018); Subasubani (2012).

135 Ministry of Environment and Tourism, Policy Review on Issues Pertinent to the Improvement of Land Management and Biodiversity Conservation (2005: 11-12).

management practices to improve rangeland health and productivity. Key strategies include implementing controlled grazing cycles, enhancing soil conservation efforts, and promoting water management practices. The policy seeks to ensure the long-term viability of rangeland ecosystems, supporting both environmental sustainability and the livelihoods of those dependent on these resources.

3.1.2.17 Country Strategic Plan

The Namibia Country Strategic Plan (CSP), from 2017 to 2024, focuses on enabling vulnerable populations to meet their food and nutrition needs and informing policy through evidence and knowledge. The CSP acknowledges that food and livestock production in communal areas has remained significantly low, due to limited access to modern farming technologies and practices, poor soil fertility, overgrazing, and prolonged dry spells.

3.1.2.18 Vision 2030

Namibia's Vision 2030, launched in June 2004, aims to guide the country's development up to 2030 through sequential five-year National Development Plans (NDPs). Addressing challenges such as low land capability, water scarcity, variable grazing availability, and low livestock carrying capacity, Vision 2030 aims to ensure equitable access to land and natural resources for all Namibians, promoting sustainable and efficient use while maximising the country's comparative advantages.

The NDP5, from 2017 to 2022, serves as Namibia's five-year development framework. It aims to achieve inclusive, sustainable, and equitable economic growth, build capable and healthy human resources, ensure a sustainable environment, and promote good governance through effective institutions. NDP5 also states that the overall production scale of smallholder farmers is lower due to limited access to inputs and poor soils, restricted access to land, frequent natural disasters such as droughts and floods, and limited access to sustained technological progress. NDP5 was recently extended for two years beyond its original end date.

3.1.2.19 Green Plan

Namibia's Green Plan, introduced at the Rio Conference in 1992, is a cornerstone of the country's environmental strategy. Developed through collaboration between governmental and non-governmental organisations, it outlines policies, legislation, and strategies for sustainable management of wildlife, tourism, and fisheries, as well as

environmental education.¹³⁶ One of its significant outcomes is the Environmental Management Act 7 of 2007 (EMA), which enables environmental protection through assessments and strategic planning. Additionally, the Green Plan has led to the establishment of Integrated Regional Land Use Plans, Community-based Natural Resource Management initiatives, a thriving nature-based tourism sector, and various water management and renewable energy projects. The Plan also facilitated the creation of the Environmental Investment Fund of Namibia,¹³⁷ highlighting the country's commitment to environmental conservation and sustainable development.

3.2 Relevant international law for the protection of soils

Article 144 of the Namibian Constitution incorporates the general rules of public international law and binding international agreements into Namibian law unless specified otherwise by the Constitution or Act of Parliament. Namibian national authorities and the judiciary can, thus, apply international law directly at the national level, reducing the need to resort to regional or international judicial bodies. International agreements automatically become Namibian law upon their entry into force, regulated by Articles 32(3)(e), 40(i), and 63(2)(e) of the Constitution. Importantly, the Constitution does not mandate the promulgation of an international agreement for it to be legally binding within Namibia.¹³⁸

While international conventions recognise the importance of soil conservation, there is currently no overarching, global, and binding framework specifically dedicated to soil conservation. Despite this absence, Namibia's incorporation of international law into its legal system underscores its commitment to addressing global challenges, including soil conservation, within its national context.

3.2.1 Relevant international soft law commitments

While not legally binding, soft law instruments often serve as influential precursors to binding international agreements. Namibia has signed several pertinent international soft law instruments related to soil protection, including the Universal Declaration of Human Rights (1948),¹³⁹ the Stockholm Declaration (1972),¹⁴⁰ the Rio Declaration on

136 Ruppel & von Finckenstein (2022: 77-79).

137 See <https://www.eif.org.na/>, accessed 26 May 2024.

138 Ruppel & von Finckenstein (2016: 381).

139 UNGA, Universal Declaration of Human Rights, 10 December 1948, Resolution 217 A (III).

140 UNEP, Declaration of the UN Conference on the Human Environment. Report, Stockholm, 5-16 June 1972, A/CONF.48/14/Rev.1.

Environment and Development (1992),¹⁴¹ Agenda 21,¹⁴² the Future We Want outcome document of the UN Conference on Sustainable Development (Rio+20 Conference) (2012),¹⁴³ the 2030 Agenda for Sustainable Development, instituting the SDGs (2015),¹⁴⁴ and the Johannesburg Declaration on Sustainable Development (2002).¹⁴⁵

These soft law instruments offer guiding principles and frameworks for promoting sustainable development and environmental conservation, indirectly contributing to soil protection efforts.

3.2.2 Relevant international hard law instruments¹⁴⁶

Namibia is a signatory to various international hard law instruments related to protecting soil, including:

- The UN Convention to Combat Desertification, 1994 (ratified in 1994).
- The Convention on Biological Diversity, 1992 (ratified 1992).
- The UN Framework Convention on Climate Change, 1992 (ratified in 1992).
- The Kyoto Protocol to the UN Framework Convention on Climate Change, 1997 (acceded to in 2003).
- The Paris Climate Change Agreement, 2015 (ratified in 2016).
- The Rotterdam Convention on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 1998 (acceded to in 2005).
- The Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal, 1989 (acceded to in 1995).
- The Stockholm Convention on Persistent Organic Pollutants, 2001 (ratified in 2005).
- The African Convention on the Conservation of Nature and Natural Resources, 1968 (revised by the Maputo Convention in 2003) (signed in 2003).
- The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and their Destruction, Geneva, 1993 (ratified in 1993).

141 UNCED, Rio Declaration on Environment and Development. Report, Rio de Janeiro, 3-14 June 1992, A/CONF.151/26 (Vol. I).

142 UN, Agenda 21: Programme of Action for Sustainable Development. A/CONF.151/26 (Vol. I). New York: United Nations, 1993.

143 UN, The Future We Want: Outcome of the UN Conference on Sustainable Development (Rio+20). Rio de Janeiro, Brazil, 20-22 June 2012.

144 UN, Transforming Our World: The 2030 Agenda for Sustainable Development. A/RES/70/1, 2015.

145 UN, Johannesburg Declaration on Sustainable Development. Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 2-4 September 2002, A/CONF.199/20.

146 See Ruppel (2022b).

- The Ramsar Convention on Wetlands of International Importance, especially as Waterfowl Habitat, 1971 (accessed to in 1995).
- The Cartagena Protocol on Biosafety to the Convention on Biological Diversity, Montreal, 2000 (signed in 2000).
- The Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region, 1981 (accessed to in 2016).
- The Protocol Concerning Co-operation in Combating Pollution in Cases of Emergency, 1981 (ratified in 1993).
- The International Plant Protection Convention, 1951 (accessed to in 2007).
- The International Covenant on Economic, Social, and Cultural Rights, 1966 (ratified in 1994).
- Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa, 2003 (ratified 2004).
- The African Charter on Human and Peoples' Rights, Banjul, 1981 (ratified in 1995).

These international agreements provide a framework for cooperation and action to address various aspects of environmental conservation on a global scale.

3.3 Relevant national legal provisions for the protection of soil

3.3.1 Constitution

Article 100 of the Constitution vests all natural resources in the state, unless otherwise legally owned. Thus, unless legal ownership in a specific locality is proven, such natural resources are owned by the state. This provision implies that natural resources can be legally owned as private property.¹⁴⁷

Additionally, Article 95(l) obliges Namibia to protect its environment and promote the sustainable use of its natural resources. This provision compels state organs to be guided by the environmental principle of state policy.

147 Ruppel & von Finckenstein (2022: 392).

3.3.2 Legislation on land tenure (land ownership, access, and users' rights), as an anchor point for soil protection

3.3.2.1 Historical overview of landownership

Before Namibia's independence, land management in communal areas was shaped by traditional authorities and colonial rulers, creating a skewed land tenure system that still influences the country today.¹⁴⁸ In pre-colonial times, land use was organised communally, with pastoralists in southern Namibia practising high mobility and northern agro-pastoralists having permanent household landholdings alongside shared pastures.¹⁴⁹

Land appropriation began in the 1880s with German colonisation, peaking during the German-Nama and German-Herero wars (1904-1908).¹⁵⁰ After 1919, Namibia came under South African administration, leading to further displacement of indigenous peoples. The mid-1890s saw the establishment of a "veterinary border" to contain rinderpest, which evolved into the "Red Line," creating significant socio-political and economic divisions in Namibia.¹⁵¹ Most areas south of this border became the Police Zone, aimed at developing a settler farm economy under strict police control.

Two land allocation systems emerged: within the Police Zone, land was allocated authoritatively under colonial regulations, while outside, traditional leaders maintained some influence.¹⁵² Colonial proclamations further entrenched racial segregation in land ownership.¹⁵³ The Odendaal Commission in the 1960s established "homelands" for various ethnic groups, yet land ownership remained ambiguous, with land vested in the state.¹⁵⁴

Upon independence, communal lands were recognised but remained state-owned. Today, Namibia's land tenure comprises freehold in urban areas and commercial farms, alongside customary tenure in rural communal land.¹⁵⁵ Freehold land is primarily privately owned. At independence, 40.8% of Namibia's land was allocated to

148 Werner (2021: 6-8).

149 Nghitevelekwa (2022: 156).

150 Mundia & Haimbili (2023: 2-4).

151 Lenggenhager et al. (2021: 1).

152 Werner (2021: 6-8); Native Reserves Regulations, Government Notice 68 of 1924.

153 Treaty of Peace and South West Africa Mandate Act 49 of 1919; Crown Lands Disposal Proclamation 13 of 1920; Reservation of State Land for Natives Ordinance 35 of 1967; Native Administration Proclamation 11 of 1922; Native Administration Proclamation 15 of 1928; Native Reserve Regulation 68 of 1924; Development Trust and Land Act 18 of 1936.

154 Werner (2021); Development of Self-Government for Native Nations Act 54 of 1968, Section 2 of the Act specifically listed Damaraland, Hereroland, Kaokoland, Okavangoland, Eastern Caprivi, and Ovamboland as native areas. The Representative Authorities Proclamation, AG. 8 of 1980 established second-tier representative authorities for eleven "population groups". These authorities were granted legislative powers over communal land matters, including acquisition, alienation, and occupation, as well as powers to appoint traditional leaders.

155 Mendelsohn et al. (2012: 3).

indigenous homelands, 43% to predominantly white commercial farmers, 14% for conservation, and a small portion unallocated.¹⁵⁶ Rights on communal land include customary land rights, leasehold rights, and occupation rights.¹⁵⁷

3.3.2.2 Modern landownership

Until 1990, the Native Administration Proclamations of 1922 and 1928 continued to regulate the allocation and management of land.¹⁵⁸ However, significant changes occurred with the repeal of the former by the Local Authorities Act 23 of 1992.

In 1991, the Namibian government organised a National Conference on Land Reform and the Land Question, adopting a policy of national reconciliation. This marked the beginning of legal and land reform policies based on principles such as sovereignty and the right to property derived from international law. A second National Land Conference was convened in 2018 to review and deliberate on land-related matters. It aimed to accelerate land reform and propose contemporary reforms in various aspects of land governance.

Article 16(1) of the Constitution protects the right of all persons to acquire, own, and dispose of immovable and movable property in any part of Namibia, either individually or in association with others. It also allows individuals to bequeath their property to anyone they wish after death. However, this property right is constrained by Article 16(2), which grants the state the authority to expropriate private property in the public interest, if compensation is paid.¹⁵⁹ Article 21(1)(h) states that every person has the right to reside and settle in any part of Namibia. However, Article 21(2) allows the state to enact laws that impose reasonable restrictions on this right. Article 23 of the Constitution provides Parliament with the authority to create legislation aimed at improving the conditions of individuals who have been disadvantaged due to past discriminatory laws or practices.

156 Jones (1999: 1).

157 Lenggenhager et al. (2021: 2).

158 Werner (2021: 13).

159 See *Namibia Grape Growers and Exporters Association v Ministry of Mines and Energy* 2004 NASC 6 (25 November 2004); *Ongwediva Town Council v Jonas* 2018 NAHCNLD 22 (12 March 2018).

3.3.2.3 Acquiring land under statutory law

3.3.2.3.1 Acquiring land from the state¹⁶⁰

The Minister of Finance is empowered under Section 64 of the Public Procurement Act 15 of 2015 to prescribe methods for the disposal of state property, which may include various contracting methods such as open bidding, public auctions, restricted bidding, or direct negotiations.

Initiated in 1990, the Land Reform Programme comprises four main components: redistributive land reform (including the Resettlement Scheme), tenure reform, development of unutilised communal land, and the Affirmative Action Loan Scheme (AALS).¹⁶¹

The Agricultural Commercial Land Reform Act (ACLRA) was the initial legislation aimed at addressing the unequal distribution of agricultural land.¹⁶² It provides a framework for the Resettlement Scheme and AALS. The National Resettlement Programme (NRP) allows the state to purchase large-scale commercial farms on a “willing seller-willing buyer” basis.¹⁶³ Section 17(1) gives the state a preferential right to acquire agricultural land offered for sale. Once purchased, these farms are subdivided and allocated to small-scale farmers or previously disadvantaged Namibians, who lease the land for 99 years (Section 42(2)). Between 1990 and May 2019, 6,100 farms covering 19.7 million hectares were offered for sale, with usage regulated by legislation.¹⁶⁴

The AALS, established in 1992, aims to support full-time indigenous farmers with access to subsidised loans through AgriBank to purchase land, subject to certain conditions, including ownership of livestock and capital requirements.¹⁶⁵ Unlike NRP beneficiaries, AALS participants secure ownership of their farms.

Leasehold rights granted under the ACLRA are rarely registered, which often leads to instances where the same parcel of land is allocated to multiple parties.¹⁶⁶ A notable example of such double allocation occurred in the case of *Kandombo v The Minister of Land Reform*.¹⁶⁷

Customary tenure on communal land is regulated by the (Agricultural) Communal Land Reform Act 5 of 2000 (CLRA), which was enacted to address the allocation of

¹⁶⁰ On land-use planning see Owoses (2022).

¹⁶¹ Haimbili (2024: 26-30).

¹⁶² Mundia & Haimbili (2023: 9-10).

¹⁶³ Werner & Kruger (2007: 12).

¹⁶⁴ Lendelvo et al. (2020: 39).

¹⁶⁵ Haimbili (2024: 38); The program was introduced through the Agricultural Bank Amendment Act 27 of 1991 and the Agricultural Bank Matters Amendment Act 15 of 1992.

¹⁶⁶ De Villiers et al. (2020: 25).

¹⁶⁷ 2016 NAHCMD 3 (18 January 2016).

land rights in communal areas and curb the power of traditional leaders.¹⁶⁸ The CLRA establishes Communal Land Boards (CLBs) and defines two primary categories of land rights (Section 19): customary land rights for farming and residential use, and leasehold rights for business and commercial agriculture.¹⁶⁹

Leasehold rights replace the Permission to Occupy (PTO) system established before independence, granting rights for a maximum of 99 years, with longer leases requiring Ministerial approval.¹⁷⁰ A PTO conveys no ownership rights but includes an option for the holder to obtain secure title to the land if such title becomes available during the currency of the PTO.¹⁷¹ While the Deeds Registries Act 47 of 1937 governs the registration of land titles, the CLRA recognises existing rights under the PTO system and allows for their conversion to leasehold rights.¹⁷²

Under the CLRA, customary land rights are protected but cannot be mortgaged or transferred, whereas leasehold rights can be.¹⁷³ Thus, despite the state's view that customary land rights offer similar security to freehold ownership, they cannot be used as collateral, which limits their value compared to freehold rights.¹⁷⁴

Group tenure on communal land allows for commonage grazing and wildlife management, although these rights may conflict with leasehold arrangements, leading to resource management challenges.¹⁷⁵

The Flexible Land Tenure Act 4 of 2012 aims to provide security of tenure for informal settlement residents. It establishes a system offering starter and land-hold title schemes. Starter titles grant rights to occupy and build but cannot be mortgaged, while land-hold titles confer full ownership rights, including the ability to mortgage the land. This system facilitates the transition from informal settlements to legally recognised communities. While the Flexible Land Tenure Act allows residents with land hold titles to use them as collateral for loans (Section 10(5)(b)), most residents in low-income urban areas are effectively excluded from securing bank loans with their property due to unstable income.¹⁷⁶ Consequently, a vibrant informal land market persists in some informal settlement areas.

168 De Villiers et al. (2020: 25); Haimbili (2024: 39).

169 Nghitevelekwa (2022: 157-158).

170 Amoo (2023: 25)

171 Ibid.: 27.

172 The Deeds Registries Act 47 of 1937 governed the registration of land titles for the entire country except for Rehoboth, for which there was the Registration of Deeds in Rehoboth Act 93 of 1976. The Deeds Registries Act 14 of 2015, which came into force in 2021, replaced and consolidated both the previous Deeds Registries and the Rehoboth Acts.

173 De Villiers et al. (2020: 26-27).

174 Ibid.: 37-38.

175 Werner (2021: 33); NAHCMD 250 (A 276/2013), *The N#jagna Conservancy Committee v The Minister of Lands and Resettlement*, 13 September 2016.

176 Ibid.: 37.

3.3.2.3.2 Acquiring the private land of an individual

Acquiring private land in Namibia involves several legal steps. The buyer and seller must agree on terms, including the price and conditions, formalised in a signed agreement. The buyer should investigate the property, checking the Title Deed at the Deeds Registry for ownership and encumbrances such as unpaid taxes or disputes.

Under Section 58(1)(a) of the ACLRA, foreign nationals need written MAWLR consent to acquire agricultural land.¹⁷⁷ For such land, the state has a preferential right, thus, it must be offered to the state before private sale.

A conveyancer handles the transfer process, preparing documents including the Deed of Transfer and ensuring sale conditions are met. Buyers must pay transfer duty, which depends on property value. The conveyancer registers the property at the Deeds Registry, officially transferring ownership and issuing a new Title Deed. The purchase price is typically held in a trust account until registration is complete.

3.3.2.4 Traditional law

Before the introduction of the CLRA, traditional leaders in communal areas primarily held an informal role in land management.¹⁷⁸ The introduction of the CLRA aimed to address longstanding land issues such as conflicts over land rights, illegal fencing off communal land for private use, arbitrary decisions by traditional leaders, and the sale of communal land by traditional leaders. By centralising control over communal land and establishing accountability mechanisms, the CLRA sought to mitigate these challenges and ensure more equitable and transparent land management practices.

The CLRA recognises the role of traditional authorities in communal land administration by granting traditional authorities the power to allocate customary land rights, under the supervision of CLBs (Section 20). This does not threaten traditional leaders' rights under Article 102(5) of the Constitution, which establishes a Council of Traditional Leaders to advise the President on communal land control and utilisation.¹⁷⁹

The TAA establishes the framework for recognising and appointing traditional leaders in Namibia. It defines communal areas as territories habitually inhabited by specific traditional communities, excluding local authority areas (Section 1). Each community can form a traditional authority consisting of its chief or head and senior councillors (Section 2). These authorities have jurisdiction over their communities and are tasked with promoting peace, preserving culture, and advising on traditional matters (Section 3). According to Section 3(2)(c), a member of a traditional authority must ensure that the members of their traditional community use natural resources

177 Confirmed in *Wohlfart v Bergh* 2019 NAHCMD 264 (28 May 2021).

178 Behr et al. (2015: 456).

179 Amoo (2023: 263).

sustainably, conserving the environment and maintaining ecosystems for the benefit of all persons in Namibia. Traditional authorities must align with government policies and refrain from actions that undermine governmental institutions (Section 16).

3.3.2.5 Conflicts and means of conflict resolution

In communal land administration, challenges arise when only recognised traditional leaders can perform CLRA functions, leaving areas without such leaders unable to implement procedures.¹⁸⁰ Overlapping jurisdictions among traditional authorities complicate land governance, especially in the Omaheke and Otjozondjupa Regions, where multiple authorities claim the same areas, hindering CLB approval processes and excluding communities such as the Ovaherero from land allocation.¹⁸¹ Investigations in the Kunene Region revealed disputes over land parcels allocated by different authorities, highlighting the need to amend the TAA to clarify territorial jurisdiction and empower CLBs.¹⁸²

Ambiguity regarding the roles of traditional authorities complicates efforts to enforce equity and gender equality in land allocations.¹⁸³ Traditional authorities administer customary laws while adhering to constitutional principles of equality, yet neither the CLRA nor the TAA provides clear guidelines for reconciling customs with statutory requirements.¹⁸⁴ This leaves vulnerable groups, particularly widows, at risk of eviction and land grabbing justified by customary practices.

In regions such as Tsumkwe West and Kavango East and West, traditional authorities have sold land with customary rights to investors, displacing residents.¹⁸⁵ Instances of granting land rights in exchange for favours or money, as seen in N̄a Jaqna, have also occurred.¹⁸⁶ The CLRA lacks timelines for processing applications and does not require accountability from traditional authorities or CLBs regarding land allocations, resulting in undisclosed agreements between investors and traditional authorities.¹⁸⁷

To address these issues, clear guidelines for transparent and accountable land allocation processes that align customary laws with constitutional principles are necessary.¹⁸⁸ Legislative amendments, clarification of jurisdictional issues, and legal training for dispute resolution are essential.

180 Werner (2021: 19-20).

181 *Ibid.*: 23; Hinz (2008: 81).

182 Werner (2020: 261).

183 Werner (2021: 20).

184 *Ibid.*: 22.

185 Mendelsohn & Nghitevelekwa (2017: 16).

186 Hitchcock et al. (2021: 279).

187 Chiari (2004: 9); Thiem & Muduva (2015: 23).

188 Werner (2021: 22).

Dispute resolution management varies by land tenure system but follows consistent principles. Initially, disputes are resolved by the authority that allocated or registered the rights, such as traditional authorities or CLBs. Appeals are handled by an arbitrator or the Lands Tribunal for communal land rights, with unresolved matters overseen by Namibia's civil courts.

Effective conflict management relies on accessible dispute resolution mechanisms. Legislation such as the Flexible Land Tenure Act and CLRA facilitates access, while informal internal dispute resolution offers cost-effective alternatives. However, without specific legislative mechanisms, disputes often end up in the civil court system, which may be inaccessible to vulnerable groups including farm workers and informal settlers. For example, in 2013, many people were unaware of the Lands Tribunal, indicating ineffective land reform and a disconnect between the state and landowners.¹⁸⁹ As of 2024, little is known about the Tribunal's status, raising questions about its effectiveness in adjudicating land disputes.

3.3.3 Public environmental law

3.3.3.1 Environmental law, relevant provisions concerning soils

The EMA is vital for environmental protection in Namibia, promoting sustainable resource use and enforcing constitutional principles. It aims for integrated environmental management and mandates Environmental Impact Assessments (EIAs) for projects affecting the environment.¹⁹⁰ While the EMA encompasses land and materials, it does not specifically address soil protection. However, it requires environmental clearance certificates (ECCs) for land use activities, which are essential for soil management.¹⁹¹

The EMA empowers the Minister to introduce regulations aligned with international agreements, but as of 2024, no specific soil-related regulations have been enacted.¹⁹² Public access to environmental information is limited; while the EMA allows state organs to access environmental data (Section 47), it does not mandate full transparency in information sharing. The Access to Information Act 8 of 2022 requires public entities to disclose certain environmental information (Section 33(1)(h)), but this only applies to information produced by government bodies.

189 Ibid.

190 Environmental Impact Assessment Regulations are contained in GN 30/2012 (GG 4878).

191 A list of activities that may not be undertaken without an ECC is contained in GN 29/2012 (GG 4878) and GN 34/2016 (GG 5962); notice listing waste disposal sites is contained in GN 282/2018 (GG 6753); declaration of waste disposal sites is contained in GN 324/2023 (GG 8223).

192 Ruppel & von Finckenstein (2022: 399).

Namibia has an Environmental Information Service (EIS), a platform for accessing environmental data, which supports public access to information.¹⁹³ However, public participation in the EIA process has been scrutinised due to incidents such as ReconAfrica's oil exploration and illegal mining allegations, leading to community distrust in the EIA's effectiveness.¹⁹⁴

To address transparency issues, the Namibian Environment and Wildlife Society (NEWS) and the Namibian Chamber of Environment (NCE) launched the EIA Tracker in 2023, improving access to project information.¹⁹⁵ Despite this progress, challenges remain, such as potential gaps in tracking smaller projects, limited internet access in rural areas, and the overwhelming nature of technical data. Meaningful community engagement requires more than just data access; it necessitates opportunities for active participation in decision-making processes.

3.3.3.2 Nature conservation

3.3.3.2.1 Soil

The Soil Conservation Act 76 of 1969, still applicable in Namibia, grants extensive powers to the Minister, including issuing directives on land cultivation, water management, and soil protection (Section 3(1)). The Act includes provisions for preventing and controlling soil erosion, as well as for protecting, improving, and conserving soil, vegetation, and water supply sources and resources.¹⁹⁶

Originally limited to commercial land, the Act now applies to communal areas, following the CLRA (Section 45(1)(i)). The Minister has discretion over soil conservation works, with costs shared by the state or landowners (Part II and Section 7(2)). The Act allows for soil conservation research or demonstrations with landowner consent (Section 8). Soil Conservation Committees, outlined in Part III, are advisory bodies to the Minister (Sections 9(1) and 10), although none are currently active.¹⁹⁷ The Act grants the Minister wide expropriation powers for soil erosion prevention and land stabilisation, along with drift sand prevention and catchment area protection (Section

193 See <http://the-eis.com/>, accessed 29 July 2024.

194 See <https://news.mongabay.com/2021/03/growing-concern-over-okavango-oil-exploration-as-community-alleges-shutout/>, accessed 29 July 2024; [https://www.namibian.com.na/govt-ac-cuses-xinfeng-of-illegal-drilling-on-resettlement-farms/#:~:text=The%20company%20also%20started%20mining,its%20activities%20were%20above%20board.](https://www.namibian.com.na/govt-ac-cuses-xinfeng-of-illegal-drilling-on-resettlement-farms/#:~:text=The%20company%20also%20started%20mining,its%20activities%20were%20above%20board.,), accessed 29 July 2024; <https://www.un-igrac.org/stories/plans-uranium-situ-leach-mining-namibias-largest-trans-boundary-aquifer>, accessed 29 July 2024; <https://conservationnamibia.com/blog/eia-tracker.php>, accessed 29 July 2024.

195 See <https://eia-tracker.org.na/>, accessed 29 July 2024.

196 Ruppel & von Finckenstein (2022: 401).

197 Ruppel & von Finckenstein (2016: 330).

18). Penalties for non-compliance are detailed in Section 21, criminalising offences with fines or imprisonment.

However, effective soil conservation is impeded by fragmented responsibilities among directorates and ministries, with Conservation Committees inactive and duties delegated inconsistently.¹⁹⁸

3.3.3.2.2 Water

The Water Resources Management Act 11 of 2013, effective since 29 August 2023, repeals both the 2004 and 1956 water laws and aims to ensure equitable access to safe water, protect water quality, and support sustainable development.¹⁹⁹ The Act declares the state as a trustee of Namibia's water resources, requiring it to manage them for public benefit (Section 4).

The Act establishes a Water Advisory Council to advise the Minister, a Water Regulator to set tariffs and oversee providers, and Basin Management Committees to promote integrated management. The Minister has broad authority over water resource planning, domestic supply, and international negotiations. Certain powers can be delegated for efficient management, and the Minister can make regulations on various water issues (Section 129).

Licensing is required for water abstraction (Section 44), except for domestic use or private wells, and effluent discharge (Sections 38-39). The Act also addresses groundwater protection and pollution control, applying the precautionary principle. Water Protection Areas may be designated to protect resources at risk from degradation (Section 85).

The Act outlines offences (Section 127) for unlicensed water use and pollution, with a Water Tribunal established to handle appeals on licensing and Ministerial decisions (Section 120).

3.3.3.2.3 Forests

The Forest Act regulates tree harvesting to combat deforestation and reduce natural risks, emphasising sustainable forest management (Section 10).²⁰⁰ It promotes tree planting, soil and water conservation, and biodiversity preservation, supporting forests' environmental roles. The Act allows for protected areas (Section 21) and regulations for soil protection (Section 48) to safeguard natural resources.

198 Ibid.: 331.

199 Regulations in GN 269/2023 (GG 8187).

200 Regulations in GN 170/2015 (GG 5801).

While natural fires can benefit ecosystems, uncontrolled fires harm soil health, causing erosion and fertility loss. In 2021, fires destroyed 2.5 million hectares in Namibia.²⁰¹ The Act permits fire management areas around forests (Section 36), implementing plans for controlled burning and fire prevention. Temporary fire hazard declarations (Section 39) aim to protect Namibia's vegetation and promote sustainable forest management.

3.3.3.2.4 Air

The Atmospheric Pollution Prevention Ordinance 11 of 1976 aims to prevent air pollution with a focus on public health, covering noxious gases, smoke, dust, and vehicle emissions. However, it has had limited practical impact.²⁰²

The EMA, emphasising pollution control, mandates choosing options that minimise environmental harm (Section 3). The polluter-pays principle ensures those causing damage to bear the costs of rehabilitation. Activities requiring an ECC, published by the Ministry, include energy, waste management, mining, agriculture, and hazardous substances.²⁰³

Efforts to finalise the Pollution Control and Waste Management Bill, initiated in 1999, remain stalled.²⁰⁴ With amendments to the EMA, the adoption of the National Solid Waste Management Strategy (2017), and the enactment of the Public and Environmental Health Act 1 of 2015 in 2020, the Bill may potentially become obsolete.²⁰⁵

3.3.3.2.5 Biodiversity

The Nature Conservation Ordinance 4 of 1975 is Namibia's main legislation on wildlife conservation and protected areas. It consolidates laws to establish game parks, and nature reserves, and manage problem animals. A key 1996 amendment introduced communal conservancies, allowing rural communities to form conservancies and gain use rights over wildlife.²⁰⁶ These conservancies enable communal and commercial landholders to manage resources collectively and share conservation benefits.²⁰⁷

201 See <https://www.farmersweekly.co.za/agri-news/africa/over-two-million-hectares-destroyed-by-wildfires-in-namibia/>, accessed 26 July 2024.

202 Ruppel-Schlichting (2022: 217).

203 GN 29/2012 (GG 4878).

204 Ruppel-Schlichting (2022: 220-221).

205 Ibid.

206 Hinz & Ruppel (2022: 241).

207 Sec 1(b) of the Amendment Act defines a conservancy to mean any area declared a conservancy in terms of Sec 24A.

The Nature Conservation Amendment Act 3 of 2017 updated the Ordinance, establishing a framework for tourism concessions on protected and state lands, regulating the import/export of live animals, and increasing penalties for violations. The Ordinance's chapters cover topics from the Nature Conservation Board (Chapter I) to hunting regulations (Chapter III), problem animals (Chapter IV), indigenous plant protection (Chapter VI), and general procedural matters including permits and penalties (Chapter VII).

3.3.4 Environmental monitoring

The EMA establishes key bodies for environmental governance, including the Sustainable Development Advisory Council (Sections 6-15), which coordinates with state agencies, NGOs, community groups, the private sector, and funding bodies on sustainable development. Established in 2013, the Council advises the Minister on policies for environmental management, biodiversity conservation, and sustainable resource use, and prepares an annual report on its activities.²⁰⁸ The Environmental Commissioner (appointed in 2012, per Section 16), whose responsibilities include advising on environmental plans, overseeing ECC applications, and whose decisions may be appealed to the Minister and, subsequently, the High Court.²⁰⁹ Environmental Officers (Section 18) support the Commissioner by enforcing the EMA through inspections, investigations, and compliance orders.

Namibia's EIA system has supported sound decision-making and environmental protection but faces challenges such as limited funding, awareness, expertise, and monitoring.²¹⁰ Additionally, the Sustainable Development Advisory Council faces constraints such as resource limitations, narrow focus, weak partnerships, and insufficient advocacy capacity.²¹¹

3.3.5 Access to environmental justice²¹²

Article 5 of the Namibian Constitution enforces the protection of fundamental rights, while Article 25(2) allows individuals to seek court protection if they believe their rights are threatened. Article 18 ensures individuals aggrieved by administrative acts can seek redress, while Article 12 guarantees a fair, public hearing by an impartial

208 Ruppel-Schlichting (2022: 196).

209 GN 30/2012 (GG 4878).

210 Junias & Nakwaya-Jacobus (2024: 46).

211 Sustainable Development Advisory Council Annual Report (2020/2021).

212 See Ruppel (2022c); on investigating the options for an environmental court see Shakalela (2022).

court for civil and criminal matters alike. Article 10 emphasises equality before the law, and Article 80(2) grants the High Court authority over civil disputes, including constitutional matters. Article 24(3) prohibits derogation from rights and access to courts, even in emergencies.

However, Namibia's standing laws are restrictive, requiring plaintiffs to show direct interest, and limiting environmental litigation to individual cases or environmental organisations acting on their own behalf.²¹³ Legislative reform for broader standing, including public interest and class action options, would enhance access to justice. Specialised environmental courts could support justice in this area, offering expertise and innovative procedures and ensuring consistent rulings.²¹⁴ Local environmental tribunals, similar to Community Courts, could improve access for affected communities and address cases efficiently.²¹⁵ Establishing these courts would strengthen enforcement of environmental laws and enhance protection against issues relating to soil degradation.

3.3.6 Cross-cutting issues: Green hydrogen

Namibia is attracting multibillion-dollar investments in its oil, gas, mining, and green hydrogen sectors, with plans for infrastructure development, including ports, roads, railways, and pipelines for water and hydrogen.²¹⁶ The Ministry of Mines and Energy (MME) highlights that Namibia's solar and wind resources make it ideal for low-cost green hydrogen production.

Green hydrogen, produced by electrolysis powered by renewable energy, is seen as an eco-friendly alternative to fossil fuels.²¹⁷ Namibia's green hydrogen plan involves using solar power from the Namib Desert to split water into hydrogen and oxygen, then converting hydrogen into green ammonia for export to Europe.²¹⁸ This industry could boost Namibia's economy, create jobs, and reduce carbon emissions, supported by evolving legal frameworks and partnerships with the EU and other stakeholders.²¹⁹

However, green hydrogen production poses potential risks to soil health. Large renewable installations may lead to land clearing, soil erosion, contamination, and

213 Hinson & Hubbard (2012: 10-11); Clarified in *Tsumib v Government of Republic of Namibia* 2022 NASC 6 (16 March 2022); Ruppel (2022c: 664); Legal Assistance Centre (2023).

214 Shakalela (2022: 686-687).

215 Ibid.: 681.

216 See <https://www.energize.co.za/article/namibia-develop-new-infrastructure-bolster-energy-sector#:~:text=The%20envisioned%20infrastructure%20developments%20necessary,outlined%20by%20the%20Namibian%20Presidency.,> accessed 26 May 2024.

217 Ruppel & Katoole (2023: 3-4).

218 Aikins (2024: 13).

219 Ruppel & Katoole (2023: 1); See <https://www.climatechangenews.com/2023/11/15/green-hydrogen-namibia-europe-japan-tax-biodiversity-impacts/>, accessed 29 July 2024.

biodiversity loss.²²⁰ Increased hydrogen levels from potential leaks could also disrupt soil's natural hydrogen uptake process.²²¹ Addressing these concerns through careful planning and research is crucial to ensure that green hydrogen's benefits do not come at the cost of soil health.

3.4 Relevant ministries and state institutions and their responsibilities

3.4.1 Ministry of Agriculture, Water, and Land Reform

The MAWLR is tasked with promoting, developing, managing, and sustainably utilising agriculture, water, and land resources. While MAWLR holds the primary responsibility for soil management in Namibia, it is essential to acknowledge the complex and fragmented legal and policy framework surrounding soil conservation issues. Due to this complexity, various government bodies may also become involved in soil conservation efforts, leading to potential overlaps in terms of authority and competence.

3.4.2 Ministry of Environment, Forestry, and Tourism

The MEFT is responsible for overseeing environmental protection, conservation, and sustainable development in Namibia. It indirectly contributes to soil protection by safeguarding ecosystems and natural habitats.

3.4.3 Ministry of Mines and Energy

The MME plays a crucial role in managing and regulating the country's mineral, geological, and energy resources. It is responsible for resource extraction practices, which can impact soil quality.

3.4.4 Ministry of Industrialisation and Trade

The Ministry of Industrialisation and Trade (MIT) focuses on promoting economic growth, reducing income inequality, and increasing employment. Responsible industries minimise soil pollution and degradation.

220 Chigbu & Nweke-Eze (2023).

221 Buzzard et al. (2022); Oeko & Hamburg (2022); See <https://cmi.princeton.edu/annual-meetings/annual-reports/year-2020/the-key-role-of-soils-in-the-future-of-atmospheric-hydrogen/#research-highlight>, accessed 29 July 2024.

3.4.5 Ministry of Urban and Rural Development

The Ministry of Urban and Rural Development (MURD) is responsible for regional governance through Regional Councils and local governance through Local Authorities. Proper land management practices can prevent soil erosion and degradation.

3.4.6 Ministry of Education, Arts, and Culture

The Ministry of Education, Arts, and Culture (MEAC) plays a pivotal role in providing quality inclusive education and training for national development.

3.4.7 Directorate of Agricultural Research and Training

The Directorate of Agricultural Research and Training (DART) is a department within the MAWLR. It plays a critical role in the development of the agricultural sector in Namibia. The Directorate is comprised of two divisions: The Agricultural Research Division focuses on researching crops, livestock, and natural resources. The Agricultural Training Division provides training and extension services to farmers throughout Namibia.

3.4.8 Namibia Agronomic Board

The Namibia Agronomic Board (NAB) is a statutory body governed by the Agronomic Industry Act 20 of 1992 to regulate and promote the country's agronomic and horticultural industry. This involves encouraging investment and facilitating the production, processing, storage, and marketing of controlled products. Their mission is to promote both the agronomic and horticultural sectors through market regulations and facilitation measures.

3.4.9 Non-government organisations

The Desert Research Foundation of Namibia (DRFN), founded in 1990, focuses on sustainable land management, climate change, water, renewable energy, and livelihood support, working with local communities, government, and private sectors. Currently, DRFN is developing a Bio-Cultural Protocol for the San communities in Omaheke and Otjozondjupa to preserve their heritage and promote sustainable practices.

aims to acquire agricultural land for land reform purposes and allocate it to Namibian citizens who lack adequate agricultural land, particularly those disadvantaged by past discriminatory laws. It grants the state preferential rights to purchase agricultural land and allows compulsory acquisition for land reform purposes. Additionally, the Act regulates the acquisition of agricultural land by foreign nationals and establishes a Lands Tribunal to resolve land disputes. While crucial for land distribution, the Act primarily addresses land use and distribution rather than soil protection.²²⁶

4.1.1.2 Communal Land Reform Act 5 of 2002

While commercial farming, particularly cattle farming, contributes to Namibia's GDP, communal farming practices significantly impact soil quality and resources. To foster sustainable farming, it is essential to adequately address communal methods and promote educational programs on sustainable techniques. Ongoing support for emerging commercial farmers benefiting from land redistribution is also crucial.

The CLRA governs communal land allocation and administration, requiring the establishment of CLBs to manage customary land rights and maintain a land rights registry. Communal areas, declared by the President, are held in trust by the state for traditional communities to foster economic and social development, especially for the landless. Customary land rights are allocated for limited periods and specific purposes recognised by customary law.

The CLRA aids biodiversity conservation by addressing land degradation. It permits the cancellation of land rights not used according to customary law and empowers traditional authorities to regulate sustainable grazing (Section 27). The Minister is also authorised to enforce regulations on soil erosion, pastoral resource protection, and grazing control (Section 45(1)(i)).

Under current regulations, residents can graze a maximum of 300 large stock units on communal land.²²⁷ Regulation 10 prohibits non-residents from bringing livestock onto commonages without permission from local authorities. Despite established procedures, disputes over double allocations, illegal fencing, and unauthorised land extensions continue in communal areas.²²⁸

226 Ruppel & von Finckenstein (2016: 328).

227 General Regulations GN 37/2003 (GG 2926).

228 De Villiers et al. (2019: 18-19).

4.1.1.3 A Single Land Act?

In 2007, Namibia began a comprehensive review to merge the ACLRA and the CLRA into a single Land Act.²²⁹ This process, completed with stakeholder collaboration, led to the presentation of the Land Bill by the MAWLR to the National Assembly in 2016. The Bill aims to consolidate and revise existing land reform acts but faces challenges in reconciling statutory and customary land rights. After being withdrawn to address resolutions from the 2018 National Land Conference, a revised version was circulated in September 2020 and is expected to be tabled in Parliament during the 2024/2025 financial year.²³⁰

A contentious issue is the proposal allowing foreigners to lease communal lands.²³¹ The current ACLRA prohibits foreign acquisition of agricultural land without ministerial consent. The 2022 Bill suggested permitting such leases, raising concerns about potential land loss versus the benefits of foreign investment. The latest draft of the Bill has not yet been made public.

4.1.1.4 Agricultural Pests Act 3 of 1973

The Agricultural Pests Act 3 of 1973 addresses agricultural pest management by regulating nurseries, controlling plants, insects, and diseases, and managing exotic animals and plants infected by pests or diseases. Inspectors are empowered to enforce the Act's provisions, aimed at preventing the introduction and spread of harmful agents. Section 9 covers the destruction of exotic animals and infected plants, while Sections 11 and 12 regulate the importation of plants, insects, and biological control agents.

Considering evolving challenges, amendments to the Act may be necessary to address a broader range of invasive species and enhance inspection and enforcement mechanisms.²³² The Plant Quarantine Act 7 of 2008 has replaced this legislation, although existing permits under Section 11(1) will remain valid until their expiry.

4.1.1.5 Plant Quarantine Act 7 of 2008

The Plant Quarantine Act aims to prevent, monitor, control, and eradicate plant pests while regulating the movement of plants, plant products, and other articles within, into, and out of Namibia. Effective in 2012, the Act includes provisions related to soil,

229 Ruppel & von Finckenstein (2022: 402).

230 See <https://www.namibian.com.na/over-7-000-customary-land-rights-issued-last-year/>, accessed 29 July 2024.

231 Legal Assistance Centre (2020).

232 Ruppel & von Finckenstein (2016: 333).

defining it as material from the earth's upper crust capable of supporting plant life, excluding sterile mediums (Section 1).

Importing soil requires a specific permit or exemption (Section 4). Plant quarantine officers may inspect any land or premises related to plants, examine soil, and remove samples for testing. They can also inspect vehicles suspected of transporting regulated materials (Section 14(1)).

Individuals who grow, possess, sell, or distribute soil imported in violation of the Act commit an offence (Section 21(1)(a)). The Minister is empowered to establish regulations for the inspection of soil and other articles intended for export and the issuance of phytosanitary certificates (Section 22(1)(h)).

4.1.1.6 Fertilisers, Farm Feeds, and Agricultural Remedies Act 36 of 1947

In Namibia, the use of agrochemicals is governed by the Fertilisers, Farm Feeds, and Agricultural Remedies Act 36 of 1947. The Registrar, appointed by the MAWLR, oversees the registration of all agricultural remedies used in Namibia, excluding those regulated by the Medicines and Related Substances Control Act of 1965 or the Hazardous Substances Act of 1973. The Namibian Medicines Regulatory Council handles the registration of veterinary pharmaceuticals used in agriculture.

It is illegal to import unregistered agrochemicals, possess unlabelled agrochemicals, misuse agrochemicals, or sell products without a Namibian registration number.²³³ Fertilisers, crucial for crop production, enhance plant growth and replenish depleted soil nutrients.²³⁴ However, high production costs and reliance on imported fertilisers pose significant challenges for Namibian farmers.

This dependence can lead to nutrient deficiencies, soil degradation, and imbalances in soil chemistry as farmers may resort to cheaper, less effective fertilisers. Over-reliance on organic alternatives can also cause soil issues such as acidification or salinisation.

The country has abundant resources to improve soil fertility, such as organic fertilisers from animal manure and compost, as well as inorganic fertilisers from local quarries or seawater.²³⁵ Locally sourced materials could be processed for soil application, and fertiliser labels should include nutrient breakdowns to help farmers optimise application rates based on soil tests.

233 Regulations in GN 112/2007 (GG 3863).

234 Namibian Agronomic Board (2022: 1).

235 Zimmermann et al. (2017: 7).

4.1.2 Enforcement issues

Namibia's first Agriculture Joint Sector Review (JSR) validation meeting in Windhoek in 2023 noted improvements in sector assessments but revealed significant gaps. The review pointed out deficiencies in data and information, highlighting a need for more resources and time to address these issues.²³⁶ It also identified weak coordination among ministries, the private sector, and development agencies, which has hampered effective agricultural policy implementation.

Research by Mwilima indicates that while the MAWLR excels at policy formulation, it struggles with implementation and monitoring.²³⁷ The National Drought Policy of 1997, for example, lacks clear institutional responsibilities, resulting in ineffective execution.²³⁸ Despite the significant impacts of climate change over the past decade, the policy has not been updated to address current challenges. Although it included a provision for a drought fund, this was never established, and no follow-ups occurred. In 2024, Namibia finally approved the Drought Relief Program for the 2024/2025 financial year to tackle the imminent drought and its effects on livelihoods and food security.²³⁹

4.1.3 Monitoring

According to the Agricultural Policy (2015), the MAWLR is tasked with developing a five-year Sectoral Execution Plan (SEP) based on priority areas from the National Development Plans (NDPs). Annual Sectoral Execution Plans (ASEPs) break down yearly implementation, including programs, projects, and budgets. The SEP serves as a tool for executing and evaluating the Agriculture Policy, requiring bi-annual progress reports to the Cabinet that assess execution rates and their impact on sectoral targets and national development goals. Monitoring and evaluation occur every six months, with a comprehensive review every five years.

Despite these frameworks, Namibia's agriculture sector faces several challenges, including limited human and institutional capacity, weak policy implementation, and poor inter-agency coordination on food security.²⁴⁰ Access to agricultural data is limited, leading to low crop productivity and constraints in managing water, land, forests,

236 See <https://aims.sadc.int/namibia-agriculture-joint-sector-review-unveils-growth-and-collaboration-opportunities>, accessed 26 May 2024.

237 Mwilima (2016).

238 *Ibid.*: 80-81.

239 See [https://english.news.cn/20240426/26a3a616894648cd91360c7c5dde9c50/c.html#:~:text=Namibia%20approves%20drought%20relief%20program%20to%20tackle%20food%20insecurity,-Source%3A%20Xinhua&text=WINDHOEK%2C%20April%2025%20\(Xinhua\),on%20livelihoods%20and%20food%20security.](https://english.news.cn/20240426/26a3a616894648cd91360c7c5dde9c50/c.html#:~:text=Namibia%20approves%20drought%20relief%20program%20to%20tackle%20food%20insecurity,-Source%3A%20Xinhua&text=WINDHOEK%2C%20April%2025%20(Xinhua),on%20livelihoods%20and%20food%20security.), accessed 29 July 2024.

240 Kaupa et al. (2022: 2).

and rangelands. The sector also suffers from inadequate land use management, weak processing and marketing capabilities, and vulnerability to droughts, floods, and trans-boundary pests. Additionally, gender inequality remains a pressing issue. A 2018 assessment indicated that Namibia had only two soil scientists in the Ministry working on soil classification and mapping.²⁴¹

4.1.4 What is more?

The Future Okavango Project (TFO)²⁴² examined the impact of small-scale farming in Namibia's Kavangos region, focusing on Mashare as a case study.²⁴³ Despite CLRA regulations to reduce deforestation and protect arable land, enforcement is weak.²⁴⁴ Unsustainable practices including slash-and-burn agriculture, deforestation, and over-grazing harm soil quality.²⁴⁵ Many farmers lack resources such as oxen, delaying field maintenance and exacerbating soil degradation on converted forest lands.²⁴⁶

Challenges such as poverty, limited education, and erratic rainfall hinder soil conservation adoption, compounded by the region's sandy, nutrient-poor soils.²⁴⁷ National soil policies are slow to implement, leaving communities without the knowledge of sustainable practices.

Bush encroachment affects over 45 million hectares, driven by poor livestock management and fire suppression, reducing agricultural productivity and impacting wildlife and tourism.²⁴⁸ While de-bushing shows potential as a business, it requires permits under the Forestry Act and EMA, overseen by the MAWLR. The National Strategy on Sustainable Bush Management (2022-2027) highlights the role of bush encroachment in land degradation and climate challenges. Sustainable thinning can boost biodiversity, and productivity, and create economic gains of ND 76 billion over 25 years for rehabilitating 15.8 million hectares. However, communal land management faces barriers including insufficient resource rights and a lack of formal plans. Community-based organisations could address these issues, promoting sustainable practices, equitable benefits, and employment through selective harvesting and land restoration.

241 Rozanov & Wiese (2018: 33).

242 See Hinz & Ruppel (2010).

243 See <https://www.future-okavango.org/>, accessed 26 March 2024.

244 Pröpper et al. (2015: 80).

245 Ruppel & von Finckenstein (2016: 339).

246 Pröpper et al. (2015: 43); Ruppel & von Finckenstein (2016: 339).

247 Pröpper et al. (2015: 80, 95 & 102); Ruppel & von Finckenstein (2016: 340).

248 Corry (2022: 8); Shikangalah & Mapani (2020: 2).

4.2 Mining

4.2.1 Relevant legal provisions

In Namibia, mineral rights generally belong to the state unless privately owned, as confirmed in *Namibia Grape Growers and Exporters Associations v Ministry of Mines and Energy*.²⁴⁹ The Minerals (Prospecting and Mining) Act 33 of 1992 governs the sector, requiring licenses for activities such as prospecting and mining. Environmental safeguards include pollution control (Section 41), EIAs before mining (Section 50), and EMPs as prerequisites for mining licenses (Section 48). The Act mandates adherence to good mining practices for environmental protection and resource conservation, requiring licence holders to notify the Minister upon ceasing activities and take measures to prevent environmental damage (Section 54).

Although these provisions exist, the framework lacks comprehensive mine closure regulations, adequate financial assurances, and routine assessment requirements, with low penalties discouraging proper site rehabilitation.²⁵⁰ The Minister has the authority to restrict mining on environmental grounds and require damage remediation at the expense of license holders (Sections 122 and 130). Larger operations often require guarantees to ensure compliance.²⁵¹

Environmental safeguards are also mandated under the EMA, where an ECC is required for listed activities, including mining (Sections 29 and 31).²⁵² Applications involve a Scoping Report and EMP, with the Environmental Commissioner deciding if an EIA is needed.

Petroleum activities are regulated under the Petroleum (Exploration and Production) Act 2 of 1991, with environmental emphasis (Section 71), and the Diamond Act 13 of 1999 controls diamond mining, requiring permits for resource removal (Section 55).

4.2.2 Monitoring

According to the IGF Mining Policy Framework Assessment for Namibia (2018), EMA and its regulations, including requirements for EIAs, environmental management plans, and the ECC process, are robust. However, several key pieces of

249 2004 NASC 6 (25 November 2004) para 209.

250 Lipinge et al. (2021: 11).

251 Ruppel & von Finckenstein (2016: 336).

252 See *Confederation of Namibian Fishing Associations v Environmental Commissioner Teofilus Nghitila* 2021 (3) NR 817 (HC).

legislation and policy on water and waste management are outdated, and its enforcement is poorly resourced, *ad hoc*, and uncoordinated.²⁵³

Geological data derived from exploration companies is seen as incomplete and poorly archived, representing a lost resource for Namibia.²⁵⁴ The permitting process should be timely, unambiguous, and consistent, but in practice, it can experience significant delays and lack transparency.

There are no requirements for capacity-building programs to help communities understand the potential environmental and socio-economic impacts identified during the EIA process.²⁵⁵ The Environmental Commissioner has limited ability to enforce fines or penalties for non-compliance with the law, with cases requiring legal enforcement being handed over to the police.

Finally, there is a general lack of coordination among government ministries regarding support services for the mining sector. There is also a limited understanding among miners of mining legislation, including environmental management and occupational health and safety. Despite efforts to enforce environmental regulations, enforcement agencies still face significant capacity challenges.²⁵⁶ These challenges are further complicated by overlapping roles and responsibilities in administering various environmental-related acts, which fall under different line ministries.

These issues highlight the need for comprehensive legislative updates, improved coordination among government agencies, enhanced transparency, and stronger regulatory enforcement to ensure sustainable and responsible mining practices in Namibia.

While many policies address the environmental impacts of mining, they focus on water and air protection rather than soil. Most soil-related policies aim to prevent contamination and rehabilitate mined areas post-activity, often emphasising water resource protection more than soil.²⁵⁷ It is recommended that both new and existing policies be updated to prioritise soil protection and management. Despite its lower visibility, soil is a critical environmental resource, and its contamination can have severe, long-term effects on biodiversity and food security.

4.2.3 The role of foreign investors

Namibia ranks 104th in the ease of doing business index and holds significant untapped reserves of lithium, copper, and uranium, positioning it as a key player in the transition

253 Crawford et al. (2018: vi).

254 Ibid.: vii.

255 Ibid.: ix.

256 Musiyarira et al. (2017: 107).

257 Ruppel & von Finckenstein (2016: 335).

to a net-zero carbon world.²⁵⁸ This, combined with consistent power availability and progressive policies, creates an attractive investment climate in the mining sector.

The Sandpiper Project, focused on marine phosphate extraction, highlights foreign investment's potential to boost Namibia's economy through job creation and advanced mining technologies.²⁵⁹ However, it has faced opposition, particularly from the fishing industry concerned about environmental impacts.²⁶⁰ The project was paused in 2012 for further environmental assessments and has undergone revisions to address concerns.²⁶¹

Similarly, Namibia's green hydrogen sector presents growth opportunities, aiming to position the country as a leader in sustainable energy.²⁶² Despite its potential, this sector faces challenges such as environmental impacts, water scarcity, and pressure on land and resources for mining the necessary materials for renewable infrastructure.²⁶³

In 2019, Namibia approved a Chinese-invested tobacco project on communal land, but it was cancelled after the investor refused conditions such as local partnerships and tobacco processing.²⁶⁴ Additionally, Asian companies have been involved in illegal logging, causing environmental damage while providing limited benefits to local communities.²⁶⁵

These examples underscore the importance of balancing economic growth with environmental protection and social equity. The Investment Promotion Act (2016) requires foreign investors to consider environmental impact and ensure local community benefits. All investors, foreign or local, must comply with Namibia's environmental laws.

4.2.4 And what is more?

Per Section 1(1) of the Prospecting and Mining Act, the term "mineral" refers to any substance occurring naturally in, on, or under land, formed by geological processes. It

258 See <https://archive.doingbusiness.org/en/rankings>, accessed 26 May 2024;

<https://www.crown.co.za/africa-updates/28193-riding-the-green-wave-the-future-of-mining-in-namibia>, accessed 29 July 2024.

259 See <https://www.miningweekly.com/article/marine-phosphate-project-being-progressed-in-line-with-court-ruling-2022-02-08>, accessed 29 July 2024.

260 See <https://neweralive.na/posts/marine-phosphate-project-moves-full-steam-ahead>, accessed 29 July 2024.

261 See <https://nbcnews.na/index.php/node/103206>, accessed 29 July 2024.

262 See <https://www.engineeringnews.co.za/article/namibias-audacious-plan-to-become-a-global-green-hydrogen-hub-2024-06-06#:~:text=The%20European%20Investment%20Bank%20has,%241%20billion%20Namibian%20hydrogen%20fund.,> accessed 29 July 2024.

263 Chigbu & Nweke-Eze (2023).

264 Nghitevelekwa (2022: 160); See <https://www.namibian.com.na/chinese-tobacco-investor-rejects-cabinet-conditions/>, accessed 3 August 2024.

265 Nghitevelekwa (2022: 160-161).

excludes certain materials such as soil, sand, clay, gravel, or stone (unless specified otherwise) if they are legitimately needed for specific purposes such as agriculture, construction, or infrastructure development. However, if these excluded materials are extracted for profit or business purposes, the Minister can declare them as minerals through a Gazette notice (Subsection (2)). Under EMA quarrying is considered a listed activity that requires an EIA and subsequent ECC. However, there is no specific licensing procedure in place for sand, aggregate, and gravel mining in Namibia.²⁶⁶ Instead, proponents must obtain various permits, including permission from the landowner (such as a local authority or private owner) and approvals from authorities such as the MEFT (for ECC), MME (for mining licences), and MAWLR (for mining approvals related to watercourses). In Windhoek, aggregate quarrying within municipal boundaries is regulated under the City of Windhoek's Policy Towards Sustainable Sand Mining (2017).

Abandoned mine sites in Namibia, such as Berg Aukas, pose significant environmental and socio-economic challenges due to soil contamination from historic mining activities.²⁶⁷ The legal framework for mine rehabilitation in Namibia is fragmented and inadequate, failing to provide sufficient environmental protection from mining impacts.²⁶⁸ Key legislation governing mineral exploration lacks provisions for mine closure, financial assurance, and systematic oversight of closure plans.²⁶⁹ Limited resources, skills, and cooperation further hinder effective rehabilitation efforts.²⁷⁰

A significant challenge is that some organisations responsible for these abandoned mines no longer exist and are unknown to current government regulators.²⁷¹ Consequently, there is limited information about the environmental and physical hazards posed by these abandoned mine sites. Additionally, the impact on ecological and biological hazards for nearby communities remains unknown.

Namibia's Minerals Policy, established in 2002, aims to foster sustainable mining practices but is considered outdated. Similarly, the Policy for Prospecting and Mining in Protected Areas and National Monuments (1999) stresses responsible mining within these sensitive zones but lacks robust enforcement mechanisms.

The Chamber of Mines in Namibia has introduced the Namibian Mine Closure Framework (2010), setting standards for medium to large-scale mines. However, this framework lacks statutory authority and independent auditing, limiting its effectiveness.

Addressing these challenges requires a comprehensive approach, integrating mining and environmental laws, enhancing expertise in mine rehabilitation, implementing

266 Ministry of Mines and Energy, Best Practice Guide: Environmental Principles for Mining in Namibia (2019: 34).

267 Ruppel & von Finckenstein (2016: 336-338).

268 Salom & Kivinen (2019).

269 Lipinge et al. (2021: 11).

270 Salom & Kivinen (2019).

271 Lipinge et al. (2021: 12-13).

long-term monitoring of mining impacts, and establishing binding financial mechanisms for rehabilitation efforts.²⁷²

4.3 Deforestation

According to MAWLR's Strategic Plan (2017/2018-2021/2022), Namibia's forestry sector faces challenges, including illegal harvesting and wildfires, which accelerate deforestation. Key legal instruments include the Forest Policy (1992), the Development Forestry Policy (2001), and the Forest Act, which governs forest management and conservation. The Forest Act categorises protected areas and outlines regulations for tree planting, vegetation clearing, and forest produce removal. Activities such as deforestation require approval and EIAs.

The Act also mandates licensing for forest produce use, with restrictions in classified forests, and allows limited harvesting without a license for personal use. The EMA requires environmental clearance for activities such as timber harvesting,²⁷³ and the Forest Regulations of 2015 list protected species and define permit requirements.²⁷⁴

The Community Forestry Guidelines (2005) promote sustainable practices and empower local communities in forest management. Customary laws also influence forest protection, such as prohibiting the cutting of fruit-bearing trees.²⁷⁵

However, the Forest Act has limitations, including vague harvesting definitions, unclear permit issuance guidelines, weak monitoring, and enforcement, and limited community revenues.²⁷⁶ There is a lack of integration between conservancies and community forests, highlighting the need for improved regulations and management.

4.4 Invasive alien species

Over 300 alien plant species have been introduced to Namibia, creating significant environmental challenges.²⁷⁷ According to a Review of Legislation on Invasive Alien Species by the Namibian Invasive Alien Species Working Group (2024), there is a clear need for a comprehensive and proactive legal framework in Namibia. The review extensively analysed Namibia's legislative approach to invasive alien species and found that while Namibia has numerous laws, bylaws, and regulations addressing invasive species, the current legal landscape is characterised by fragmentation. This

272 Salom & Kivinen (2019).

273 Activity No. 4 in Regulations GN 29/2012 (GG 4878).

274 GN 170/2015 (GG 5801).

275 von Doderer et al. (2022: 438-439).

276 Busch (2021: 21-23).

277 See <https://botsoc.org.na/alien-plants#:~:text=Over%20300%20alien%20plants%20have,do%20not%20cause%20any%20problems.,> accessed 29 July 2024.

fragmentation, although well-intentioned, leads to regulatory gaps, overlaps, and inconsistencies. As a result, the effectiveness of the legislative regime in combating invasive alien species is diminished.

4.5 Industrial development

Namibia's Industrial Policy (2012) supports Vision 2030 by promoting industrialisation, small business development, and environmentally responsible practices. It aims to protect soil health by addressing the impact of waste, emissions, and land use in industrial activities.

The EMA promotes waste reduction and reuse (Section 3(2)(i)) and requires waste disposal at designated sites (Section 5). It also mandates ECCs for activities that may harm the environment (Section 27).

The Public and Environmental Health Act ensures water and food safety and mandates local authorities to manage waste collection, disposal, and recycling (Sections 51-55). It also empowers the Minister to regulate waste management and public health (Sections 68 and 77).

The Hazardous Substances Ordinance (1974) controls toxic substances, supporting pollution control efforts. The National Solid Waste Management Strategy (2018-2028) aims to improve waste management standards, address illegal dumping, and strengthen the legal framework for waste disposal.²⁷⁸

Local and regional authorities are responsible for waste management, with urban areas showing improvements, though rural areas still face challenges due to limited resources. Tailored solutions are needed to ensure environmental sustainability and public health.

4.6 Demographic growth, urban sprawl, and land-planning regulatory frameworks

Namibia is experiencing rapid urbanisation, with 75% of the population expected to live in urban areas by 2050.²⁷⁹ Much of this growth is informal, leading to challenges such as environmental degradation, increased pollution, and soil erosion. Currently, 40% of Namibia's population lives in 228,000 informal shacks, with projections showing this will become the dominant housing form by 2025.²⁸⁰

278 Ruppel-Schlichting (2022: 221).

279 See <https://www.bmz.de/en/countries/namibia/core-area-climate-and-energy-just-transition-162628#:~:text=Namibia%20is%20currently%20undergoing%20a,living%20in%20cities%20by%202050.>, accessed 29 July 2024.

280 Van der Merwe & Simha (2023).

Informal settlements contribute to deforestation, waste management issues, and pollution.²⁸¹ The courts have ruled that developments must align with town planning schemes, highlighting the need for integrated urban planning.²⁸² Namibia's spatial development framework faces a gap between design and practice, with rural planning receiving less attention than urban areas.²⁸³

The National Land Policy, though weak, assigns responsibilities for land use to various bodies, but they often lack effectiveness. The Town Planning Ordinance 18 of 1954 and the Township Ordinance 11 of 1963 guided town planning and township establishment. These were replaced by the Urban and Regional Planning Act 5 of 2018, which established a new Planning Board and updated spatial planning regulations. The Act aims to improve spatial planning through stakeholder participation, but its implementation remains fragmented and inconsistent.²⁸⁴ The effectiveness of planning tools such as Integrated Regional Land Use Plans (IRLUPs) and Town Planning Schemes (TPSs) is limited, often not aligning with socio-economic realities.²⁸⁵

There is a call for a centralised hub or national database to streamline land-use management, improve coordination, and promote sustainable development across all governance levels.²⁸⁶

4.7 Climate change law and soil degradation

Climate change is expected to worsen water scarcity and agricultural challenges in Namibia, amplifying issues such as land degradation, soil erosion, bush encroachment, and deforestation.²⁸⁷ Extreme weather events, especially droughts and floods, will intensify soil erosion and crop destruction, underscoring the need for proactive climate adaptation measures.

Conservation agriculture offers a solution, promoting minimal soil disturbance, crop rotation, and soil cover.²⁸⁸ Namibia's Comprehensive Conservation Agriculture Programme, launched in 2015, aims to combat land degradation and improve food

281 Ministry of Justice, Responses to the Questionnaire on Informal Settlements and Human Rights (2018), <https://www.ohchr.org/sites/default/files/Documents/Issues/Housing/InformalSettlements/Namibia.pdf>, accessed 20 August 2024.

282 *Auas Valley Residents Association v Minister of Environment and Tourism* 2022 (3) NR 758 (SC).

283 De Villiers et al. (2020: 44-49).

284 Owoses (2022: 420).

285 De Villiers et al. (2020: 51).

286 Owoses (2022: 420).

287 Ruppel & von Finckenstein (2016: 341).

288 For further information see <https://www.giz.de/en/worldwide/34175.html>, accessed 29 July 2024.

security.²⁸⁹ Additionally, Community-Based Natural Resource Management (CBNRM) supports indigenous land rights while addressing climate impacts.²⁹⁰

Namibia's Intended Nationally Determined Contribution (INDC) stresses the need for proactive adaptation strategies, including drought-resistant crops and livestock, but calls for stronger legal and policy frameworks for soil conservation to enhance resilience.²⁹¹

The Disaster Risk Management Act 10 of 2012 addresses climate change risks, emphasising prevention, mitigation, and recovery. The 2011 National Policy on Climate Change, although aligned with national development goals, needs updates to meet the ambitious NDC targets, including green hydrogen, and attract private sector investments for climate action.²⁹²

4.8 Land tenure insecurity

At independence, Namibia inherited a highly unequal land distribution.²⁹³ The government initiated a land reform program, acquiring farms between 2001 and 2010, but environmental factors were not fully considered, leading to unsustainable farming practices, overgrazing, and poor land management. The lack of secure land tenure in communal areas also hinders sustainable land management.

The removal of apartheid laws allowed indigenous people to settle anywhere, sparking migration to urban areas, where many settled on unplanned land, creating informal settlements. Local authorities struggled with inadequate land supply systems, and most low- and middle-income individuals cannot afford to buy or register land.²⁹⁴

Challenges in land tenure persist. By 2019, only 14% of beneficiaries had finalised lease agreements, hindered by unclear terms, poor coordination, and financial constraints.²⁹⁵ Many leaseholders fail to register their land, leading to unpaid fees and under-utilisation of farms.²⁹⁶ Approximately 60%-70% of farms are unprofitable and burdened by debt.²⁹⁷ The “willing seller, willing buyer” policy also limits land acquisition for resettlement.

The Namibian Communal Land Administration System (NCLAS) integrates freehold and non-freehold registration but faces challenges with up-to-date information,

289 Ruppel & von Finckenstein (2016: 341).

290 Dieckmann et al. (2013).

291 Ruppel & von Finckenstein (2016: 342).

292 Ruppel (2022a: 90); Green Climate Fund (2022: 4).

293 Ministry of Environment and Tourism, Third National Action Programme for Namibia to Implement the United Nations Convention to Combat Desertification (2014-2024: 25).

294 De Villiers et al. (2020: 65).

295 Lendelvo et al. (2020: 41).

296 Ibid.: 42; Odendaal (2005: 7).

297 Amoo (2023: 246).

especially in remote areas.²⁹⁸ In urban areas, freehold titles are available, but rapid population growth has led to more informal settlements.²⁹⁹ The Local Authorities Act formalises urban areas but struggles with weak management, inadequate funding, and outdated regulations, preventing low-income settlers from securing formal land tenure.³⁰⁰

4.8.1 Traditional law

With the promulgation of the Namibian Constitution, customary law was formally recognised as one of the sources of law in Namibia.³⁰¹ Section 17 of the CLRA upholds the stance that communal lands are held by the state in trust for the benefit of traditional communities living in those areas. The CLRA reaffirms customary usufruct rights (Section 21) for communal land occupiers, giving statutory recognition to this tenure system without extending beyond usufruct rights.³⁰² It specifies the duration of customary land rights (Section 26) and provides for their registration (Section 25) and upgrading to the status of leaseholds to encourage and promote the development of communal lands. However, registration only serves as publicity or proof of title and does not grant additional powers, such as using the title as collateral.

Section 22 of the CLRA specifies that an application for a customary land right on communal land must be submitted in writing using the prescribed form to the chief of the traditional community where the land is located. Applicants must provide the requested information and submit the required documents for the chief or traditional authority's consideration. When reviewing applications, the chief or traditional authority may conduct investigations, consult relevant individuals, and hold hearings if objections arise. They can approve or reject the application, with the option to allocate the right on the specific land applied for or another agreed-upon portion.

The power to grant leasehold rights is vested in the CLBs (Section 30(1)), not the MAWLR. While the CLBs can grant leasehold over designated communal land, they must obtain the consent of the relevant traditional authority to maintain harmonious relationships (Section 30(4)). The powers and functions of traditional authorities, particularly concerning the grant of leasehold rights, are prescribed by the CLRA, specifically Section 30. In the case of *Chaune v Ditshabue*, it was emphasised that the exercise of these powers is neither private nor personal.³⁰³ Instead, these powers are given

298 Amoo (2020: 29).

299 Ibid.: 18.

300 Amoo (2023: 28-29); De Villiers et al. (2020: 67).

301 Ruppel (2022a: 107).

302 Amoo (2020: 23).

303 2013 NAHCMD 111.

to traditional authorities to ensure the proper conduct of traditional community affairs.³⁰⁴

4.8.2 Conflicts and means of resolution

Local authorities, in collaboration with the central government, play a key role in developing settlement areas within communal lands governed by traditional chiefs. Settlement areas are declared through Gazette notices under Section 31(1) of the Regional Councils Act 22 of 1992 and upgraded to local authority status, allowing for land transfer and service provision. However, fiscal constraints and tensions with traditional authorities limit the autonomy of these settlements, as budgets must pass through the regional council.³⁰⁵

Residents face challenges with tenure rights, which are restricted to leasehold titles, limiting investment and development. Legislative amendments are needed to grant settlement areas access to land alienation and disposal provisions similar to those of local authorities. Proclaiming settlement areas to village councils promptly would allow residents to secure ownership rights, boosting investment prospects.³⁰⁶ The Supreme Court clarified that land within communal areas does not become urban when designated for local authorities, highlighting the need for clarity on communal land tenure in urban development.³⁰⁷

A 1990-1991 socio-economic survey found strong support for tribal authorities allocating land, though opinions varied by region.³⁰⁸ Conflicts arise when traditional authorities allocate land in urban areas, creating jurisdictional overlaps with local authorities.³⁰⁹ This issue is further complicated by unclear land allocation processes and overlapping responsibilities.

Despite the registration of 119,227 customary land rights—representing about 49% of existing rights, many landholders in regions such as Kavango lack statutory recognition.³¹⁰ Women and marginalised groups face additional challenges, and land disputes often hinder the registration process. Informal land markets and inadequate governance of communal land exacerbate these issues.³¹¹ For example, farmers in the Uukwangali region were forced to pay high fees for access to communal land, with some facing expulsion for refusal to pay.

304 Amoo (2023: 263).

305 Ibid.: 284.

306 Amoo (2020: 31-33).

307 *Agnes Kahimbi Kashela v Katima Mulilo Town Council* 2018 NASC 409 (16 November 2018); Amoo (2020: 25-26).

308 Werner (2021: 14).

309 De Villiers et al. (2020: 19-20).

310 Ibid.: 69-70.

311 Werner (2021: 31).

4.8.3 Land tenure legislation and associated land-grabbing

Illegal grazing and fencing in Namibia are major contributors to land conflicts and tenure insecurity.³¹² Illegal grazing occurs when livestock graze on communal land without permits, while illegal fencing restricts access to communal resources, often benefiting those with economic power. Communal rangelands lack formal grazing regulations, leading to the overuse of resources.³¹³ In areas such as Aminuis, privatisation of common land and water resources has caused conflicts, breaking down community cooperation.³¹⁴

Namibia's land accumulation is shaped by two paths: open-access communal lands and leasehold-managed areas. Leasehold areas often operate as *de facto* private property, with some lands acquired through illegal means, creating tension between communities and elites.³¹⁵ The CLRA's restrictions on land allocations (initially 20 hectares, later increased to 50 hectares) have caused confusion and insecurity, especially in livestock-dependent regions.³¹⁶

Despite laws governing grazing and fencing, illegal practices persist, as seen in areas including N̄a Jaqna and Nyae Nyae.³¹⁷ These issues are compounded by external invasions, jurisdictional overlaps between traditional authorities and land boards, and weak enforcement.³¹⁸ The decentralisation of governance has resulted in fragmented authority, complicating conflict resolution.³¹⁹ Legal reforms, strengthened enforcement, and dialogue on equitable land governance are crucial to resolving these challenges and protecting communal land for marginalised groups.

4.8.4 Relationship between landownership and environmental responsibility

Land ownership in Namibia plays a critical role in shaping environmental responsibility, as balancing economic development, community needs, and environmental protection remains a complex challenge. On freehold land, owners are accountable for sustainable management; however, issues such as overgrazing and resource depletion persist. In communal areas, traditional knowledge fosters sustainability, but population growth and increasing resource competition place significant strain on the system. Resettled farmers, in particular, require targeted support to adopt sustainable practices and prevent land degradation. To address these challenges, the government must

312 Hebinck (2021: 358).

313 Kahumba & Tefera (2023: 2).

314 Tjiharuka (2023: 70).

315 Hebinck (2021: 358).

316 Werner (2021: 29-30).

317 Van der Wulp & Hebinck (2021: 418); Hitchcock et al. (2021: 280-281).

318 Hebinck (2021: 360-361).

319 Ibid.: 357.

implement and enforce effective regulations, enhance education on sustainable land use, and promote inclusive dialogue among stakeholders to ensure responsible land management.

Traditional laws, such as Mbunza customary law, promote resource conservation by emphasising sustainable land use. However, growing land pressure in the Kavango Region threatens long-term sustainability.³²⁰ While the Mbunza uphold principles of responsible land management, limited access to education on modern best practices presents challenges to effective implementation.

The 2019 National Environmental Education and Education for Sustainable Development Policy (NEEESDP) aims to strengthen environmental education and integrate sustainable development principles.³²¹ However, without secure property rights, communities have little incentive to invest in conservation efforts. Secure tenure fosters a sense of ownership and responsibility, encouraging sustainable land management and ensuring long-term environmental and socio-economic benefits.

4.9 Conclusion

The legislative frameworks addressing the main drivers of soil degradation in Namibia reveal both strengths and weaknesses across various sectors. In agriculture, while relevant legal provisions exist to regulate practices, enforcement remains a significant challenge, often compounded by inadequate monitoring mechanisms. Mining operations are governed by robust legal provisions, yet issues persist with monitoring and the role of foreign investors in environmental stewardship. Deforestation, invasive alien species, and industrial development are similarly governed by laws that struggle with effective enforcement and monitoring; risking continued environmental degradation.

The complexities of demographic growth and urban sprawl further strain land-planning regulatory frameworks, highlighting the need for more cohesive and proactive legislation. In addressing the challenge of climate change, Namibia faces significant gaps in its legislative framework and outdated policy measures.

Land tenure insecurity remains a critical issue, exacerbated by traditional and statutory laws that often conflict, impeding effective resolution of disputes and contributing to land grabbing. Illegal fencing on communal land poses significant challenges, particularly for smaller farmers and marginalised communities.³²² Illegal fencing restricts access not only to grazing land but also to essential resources such as firewood, building materials, and water. The process to remove illegal fences is often slow and complex, leading to delays in justice.

320 Koita (2008: 68-74).

321 Ruppel (2022a: 91).

322 De Villiers et al. (2020: 70).

Addressing these challenges demands not only stronger legal frameworks but also enhanced enforcement, robust monitoring systems, and greater integration of environmental responsibility into land ownership practices.

5 Lessons learnt and recommendations

Namibia's legislative framework for soil management and protection is extensive, encompassing broad cross-sectoral laws and specific sectoral legislation.³²³ The EMA addresses overarching environmental concerns, including contamination and pollution control. In contrast, laws such as the Soil Conservation Act focus directly on preserving soil health. The ACLRA and the CLRA influence soil management practices across different land ownership types. Additionally, sector-specific laws such as the Minerals (Prospecting and Mining) Act, Forest Act, Fertilisers Act, Agricultural Pests Act, and Plant Quarantine Act address issues such as mining impacts, forest conservation, pest control, and plant quarantine measures, all significantly impacting soil quality and ecosystem health.

Major drivers of land degradation in Namibia—such as rural poverty, population pressure, and unsustainable land practices—highlight significant challenges. Inadequate water management, limited cross-sectoral collaboration, and insufficient resources exacerbate these issues, compounded by climate change. Fragmented responsibilities for soil-related matters pose a critical obstacle to effective conservation efforts, lacking a cohesive policy framework to optimise existing laws and regulations and, thereby, reducing overall impact.

Addressing these challenges necessitates integrated approaches to bridging policy gaps, enhancing sector collaboration, and mobilising resources effectively. A comprehensive policy framework could streamline efforts, improve monitoring, enforce sustainability practices, and promote soil management practices across Namibia, safeguarding vital natural resources for future generations.

Namibia currently lacks specific climate laws or regulatory frameworks concerning green hydrogen and its potential soil impacts. This gap underscores the need for regulations assessing and mitigating adverse effects from hydrogen production, managing water use sustainably, and properly handling by-products. Integrating soil protection into emerging technologies such as green hydrogen is crucial for meeting global sustainable development goals across economic sectors.

Effective soil maintenance and protection in Namibia require robust legislation, policy frameworks, and effective enforcement measures. Incentives and deterrents for sustainable land use practices, such as subsidies and regulations, align private land use with societal and environmental objectives. Cross-sectoral involvement—from

323 Ruppel & von Finckenstein (2022: 403)

environment and climate change to land rights, gender equality, traditional affairs, health, economy, and trade—is crucial for sustainable agriculture, rural development, and community empowerment.

Namibia does have dedicated soil legislation, but one of the biggest obstacles to effective soil conservation is the fragmentation of responsibilities. There is no cohesive policy to coordinate the effectiveness of existing laws and regulations regarding soil protection. This lack of coordination hampers the overall impact of soil conservation efforts. To improve soil conservation in Namibia, several key steps can be taken: Establish a central authority to oversee and coordinate all soil conservation activities, ensuring all efforts are aligned and effective. Create a unified policy framework that harmonises existing laws and regulations, reducing overlap and confusion. Foster better collaboration and communication among different agencies and institutions involved in soil management to streamline efforts and share resources.

The land question in Namibia remains unresolved, with ongoing challenges and complexities.³²⁴ Although agricultural land reform is a key political priority, the financial resources allocated are insufficient relative to the scale of the rural land challenges. Progressing land tenure rights is essential for soil protection and mitigating tenure impacts on soil health.³²⁵ Namibia implemented various post-independence land tenure systems to ensure security for all citizens. However, customary laws still prevail in some areas.³²⁶ Although communal land rights were formalised through the CLRA, challenges persist, including reports of illegal land fencing and administrative overlaps.³²⁷ Addressing these issues requires harmonising and formalising land tenure practices across diverse regions, improving transparency, and combating corruption in land allocation processes. Offering incentives to prevent overgrazing on communal lands in Namibia could be an effective strategy to promote sustainable land management and improve environmental outcomes. Providing subsidies or financial rewards to communal farmers who implement sustainable grazing practices, such as rotational grazing, resting periods for pastures, or fencing off sensitive areas.

In Namibia and throughout Africa, integrating customary law and indigenous knowledge into soil policies is essential for improving their effectiveness.³²⁸ Educating legal professionals in soil law is also crucial to ensure adherence to protection measures. Additionally, legislation on foreign land investment must prioritise national interests, social responsibilities, and environmental standards to sustainably manage soil resources. This is particularly important given the growing global interest in land investments, such as those in green hydrogen projects.

324 De Villiers et al. (2020: 71).

325 Ruppel & von Finckenstein (2022: 403).

326 Mazambani & Chigbu (2023: 2); Nakanyete et al. (2020).

327 *Ibid.*: 9.

328 Ruppel & von Finckenstein (2022: 404-405).

Namibia faces a pressing need to urgently address access to justice for environmental cases. With environmental degradation increasingly impacting communities and ecosystems, specialised environmental courts or tribunals can play a pivotal role in ensuring fair and timely adjudication of these complex issues. These institutions would not only enhance legal standing and procedural fairness but also foster expertise among judges, leading to more consistent application of environmental law, and in turn, the protection of soil resources. Also, ultimately, effective community participation is about empowering communities to influence decisions that affect their lives and environments. It requires commitment from government agencies, developers, civil society, and communities themselves to foster an environment where participation is meaningful, informed, and equitable.

Enhancing soil governance demands coordinated efforts domestically and internationally across sectors and institutions. Soil protection is pivotal for achieving climate and food security objectives, reflecting the public trust doctrine that emphasises our shared interest in critical resources such as soil.

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