PART VI:

LAND, SOIL AND FORESTRY

Chapter 15: Land, Soil and Agriculture from a Namibian and International Law Perspective

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1 Introduction

This chapter addresses soil protection from a Namibian and international law perspective. Especially in Africa we know that scarce land is more than a source of food security, income and shelter. It is also subject to distributive inequalities, often related to cultural identity. It is thus often a source of political and economic competition, tribal and social tension as well as historical, feudal, imperial, missionary or colonial injustices.[1]

Indeed, the most significant natural capital asset is productive land and fertile soils. For those communities that rely heavily on land as their main source, especially the rural poor, human well-being and sustainable livelihoods are completely dependent upon and intricately linked to the health and productivity of the land. "Land is territory, property, a resource, our heritage, and much more. Land has economic, social and environmental value and, even when privately owned, it provides many benefits to society."[2]

Soils are essential ecosystems that deliver valuable services such as the provision of food and carbon sequestration, among others. Therefore, soil is crucial for fighting climate change, protecting human health, safeguarding biodiversity and ecosystems and ensuring food security.[3] In this regard it is important to note that 'soil' is not synonymous with 'land'. Of course, soil is a constituent of land but, while soil is movable, land is not. Moreover, soil protection is closely related to and even overlaps with land use and land management.

Land degradation is one of the major environmental concerns in Namibia as land is the basis for survival. Land degradation threatens environmental quality and has a negative economic impact. In Namibia, farming has deep cultural and social meaning. About 70% of the Namibian population depends on agricultural activities for a livelihood.[4] Thus, the conservation of land by legal means is of critical importance for the country.[5]

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1 FAO (2020a).
2 Larbodière *et al*. (2020:8).
3 European Commission (2020).
4 GRN (2007b:1).
5 This Chapter is partially based on Ruppel / Bethune (2007) and Hinz / Ruppel (2008b).

Land degradation in Namibia, like elsewhere in the world occurs in different forms and the effects and causes of land degradation are manifold.[6] It is, inter alia, caused by climatic variations, especially the high variability of rainfall patterns, and human activities. The major driving forces of land degradation in Namibia include poverty in rural areas; population pressure; land management policies; unsustainable use of water; limited capacity and cross-sectoral collaborations to effectively prevent land degradation; limited financial and technical resources; and climate change.[7]

According to the 2015/2016 Namibia Household Income and Expenditure Survey,[8] 10.6% of all households in Namibia reported subsistence farming as their main source of income. This figure has changed from 23% in 2009/2010, 29% in 2003/2004 and 38% in 1993/1994.[9] However, many Namibians depend – directly or indirectly – more on farming than on any other economic activity.[10] Despite the fact that the whole agriculture, forestry and fisheries sector only made up 9 % of GDP in 2020,[11] almost half of Namibia's land area (47.1%) was used for agricultural purposes in 2018.[12]

Overstocking and overgrazing are considered to be the main causes for land degradation in Namibia. Especially in rural areas, poverty forces people into unsustainable environmental management practices such as overstocking and overgrazing in order to ensure food supply. More often than not, the densities of livestock exceed the carrying capacity of the land, which places strain on the environment. Further negative effects on land are caused by the unsustainable harvesting of forest resources, wild plants and game, and the clearing of land for farming or housing purposes.[13]

Land degradation not only has negative economic consequences in that it reduces the country's resources, it also poses a serious threat to food security and rural livelihoods, which particularly affects the most vulnerable groups in Namibia's poor and densely populated areas. The most alarming effects of land degradation are deforestation, decreased availability of palatable grass species, soil erosion, bush encroachment and soil salinisation.[14]

In light of this environmental background, the importance of soil conservation becomes apparent. After all, Namibia is one of the driest countries in the world with two of the largest deserts, namely the Kalahari Desert and the Namib Coastal Desert. This

6 Klintenberg / Seely (2004); see also Ruppel / Ginzky (2021).
7 GRN (2014d).
8 NSA (2016:13).
9 NSA (2012:56).
10 Iyambo, N, then Minister of Agriculture, Water and Forestry in his foreword to Mendelsohn (2006).
11 See https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=NA, accessed 15 July 2021.
12 See https://data.worldbank.org/indicator/AG.LND.AGRI.ZS, accessed 15 July 2021.
13 Hengari (2018:11); MET (2006:1ff.).
14 Hengari (2018:9); Klintenberg / Seely (2004:7).

makes its soil particularly vulnerable. However, both nationally and internationally this area of the environment has not yet received the attention it deserves.

2 Soil Protection in the International Legal Framework

Article 144 of the Namibian Constitution incorporates international law explicitly as the law of the land. International law is thus integrated into domestic law.[15] Where possible national authorities and the judiciary, in particular, can therefore apply international law directly on the national level, before cases are taken to regional or international judicial or quasi-judicial bodies. International agreements become Namibian law when they come into force for Namibia. The conclusion of or accession to an international agreement is governed by Articles 32(3)(e), 40(i) and 63(2)(e) of the Namibian Constitution. It is important to mention that the Constitution does not require the promulgation of an international agreement for it to become part of the law of the land.[16]

Even though some international conventions recognise the importance of soil conservation, no overarching framework exists as yet. One of the reasons advanced by opponents of an overarching, global and binding framework is that soil is non-moving and has *locally unique* problems, which should be dealt with locally.[17]

The European Soil Charter of 1972 is held to have been the first international document relating to soil.[18] The World Soil Charter and the World Soils Policy were negotiated by the United Nations Environment Programme (UNEP) in coordination with the United Nations Food and Agriculture Organization (FAO) and were adopted in 1981. Both instruments contain non-binding guidelines and principles relating to soil conservation[19] and were intended to aid states in formulating domestic policies. However, in light of modern environmental practices, these instruments are considered to be outdated.[20]

Yet, 2015 was the International Year of Soils, which has resulted in a wealth of awareness activities across the globe, in addition to putting soils back on the international policy agenda.[21] This has also led to a new international dialogue concerning the protection and rehabilitation of soils and sustainable farming practices in general.[22]

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15 Article 144 reads as follows: "Unless otherwise provided by this Constitution or Act of Parliament, the general rules of public international law and international agreements binding upon Namibia under this Constitution shall form part of the law of Namibia."
16 Ruppel (2016b:55ff).
17 Montanarella (2015).
18 Alori / Nwapi (2015:105).
19 Ibid.
20 Ibid:106.
21 See http://www.fao.org/soils-2015/news/news-detail/en/c/353737/, accessed 20 January 2021.
22 Ibid.

The Global Soil Partnership (GSP) is a body established prior to the International Year of Soils and aided in the implementation and coordination of the roll-out of the year-long activities.[23] The GSP further encourages research, plans conferences and establishes local and regional partnerships.[24] However, criticism has been voiced relating to the felt absence of tangible results and calls for specific actions are mounting.[25]

New scientific knowledge has been gained over the past three decades, "especially with respect to new issues that emerged or were exacerbated during the last decades, like soil pollution and its consequences for the environment, climate change adaptation and mitigation and urban sprawl impacts on soil availability and functions".[26] In this respect, the World Soil Charter has been revised and was unanimously endorsed in June 2015, during the course of the International Year of Soils, by the member states of the FAO during the 39th Session of the FAO Conference.[27] The revised guidelines intend to ensure that "soils are managed sustainably and that degraded soils are rehabilitated or restored".[28] The actions are targeted at individuals and the organised private sector, governments and international organisations, which triggered an international dialogue concerning the protection and rehabilitation of soils and sustainable farming practices.[29] While tools such as FAOLEX and ECOLEX already compile national legislation and policies, and include some legislation on soil protection and soil degradation prevention, the newly established working group on soil legislation will in the time to come contribute to reviewing and updating the SoiLEX database containing all soil-related legal instruments adopted in each country.

While the World Charter on Nature[30] and Agenda 21[31] have been criticised to be inappropriate to aid in soil conservation, as their wording is too broad to establish clear norms,[32] other international law instruments have proved to be more relevant. Particularly for Africa, the United Nations Convention to Combat Desertification (UNCCD) is the main international legal document to combat desertification and mitigate the effects of drought in affected countries through effective action at all levels supported by international cooperation. This instrument is the only international treaty

23 See http://www.fao.org/globalsoilpartnership/iys-2015/en/, accessed 20 January 2021.
24 Montanarella (2015).
25 Ibid.
26 See the revised World Soils Charter at http://www.fao.org/fileadmin/user_upload/GSP/docs/ITPS_Pillars/annexVII_WSC.pdf, accessed 16 January 2021.
27 The revised World Soil Charter is organised into a Preamble, nine principles, and guidelines for action.
28 See Section 3 of the Revised World Soil Charter.
29 See http://www.fao.org/soils-2015/news/news-detail/en/c/353737/, accessed 20 January 2021.
30 See http://www.un.org/documents/ga/res/37/a37r007.htm, accessed 16 January 2021.
31 United Nations Conference on the Environment and Development, Agenda 21, UN Doc a/CONE151/4 (1992).
32 Alori / Nwapi (2015:106).

specifically addressing land-related issues, while the definition of desertification therein clearly relates to soil conservation.[33]

> The UNCCD laid the groundwork for developing and establishing the concept of LDN. After adoption of the SDGs, the CCD claimed leadership for implementation of target 15.3 on LDN. It decided to integrate LDN in its work and has engaged in various activities. Besides a target setting programme this includes elaborating guidance material. In particular, the CCD published a Scientific Conceptual Framework that is intended to apply to all land and guide all parties in implementing LDN. Although the legal and political constraints make the UNCCD's potential difficult to assess, it could continue to pursue a leading role in implementing the LDN target and serve as forum for discussing soil-related issues between developing and developed countries.[34]

So far, however, the tangible effect of the UNCCD remains limited, as the focus is primarily placed on capacity-building, as opposed to creating binding obligations *per se*.[35]

The Namibian Program to Combat Desertification (NAPCOD) was established subsequently to the UNCCD.[36] Relating specifically to soil erosion, the NAPCOD focusses on education and awareness surrounding this issue.[37] This is done by means of the Regional Awareness Programme, which aims to enhance the understanding of desertification, soil erosion, deforestation and related issues with local and traditional decision makers. The dissemination of information to communities and the creation of engagement were identified as crucial obstacles in raising awareness. The main educational activities were generally centred at the Gobabeb Training and Research Centre, and included programmes to educate teachers in order to allow for them to subsequently undertake environmental education. Furthermore, media awareness workshops are also undertaken by NAPCOD, aimed at raising awareness of the widespread implications arising from desertification.[38] NAPCOD also engages in a range of other programmes related to not only educational, but also practical implementation of efforts to combat desertification.[39]

Namibia has drafted its Third National Action Programme (2014-2024) to implement the Convention to Combat Desertification.[40] NAP3 aims to set forth a framework to allow for the implementation of the UNCCD, for the time period of 2014 to 2024. It first focuses on illustrating the current obstacles which Namibia faces in regard to the environment, desertification, land degradation and drought processes, and

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33 Land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors including climatic variations and human activities.
34 See with further references, Bodle *et al*. (2020:14).
35 Alori & Nwapi (2015:107).
36 Seely / Montgomery (2009).
37 Ibid:viii.
38 Ibid:100.
39 These include workshops for farmers and farm managers relating to the prevention of soil erosion and sustainable farming practices, community projects allowing for an increased food and social security standard and general institution and capacity building.
40 See GRN (2014d).

how these pose threats to Namibia's land-based agricultural sector.[41] The document further names poverty and population growth, in addition to unsustainable resource usage and severe impact of climate change. This document also highlights the inadequate institutional and individual capacity and weak mechanisms of cross-sector collaboration for sustainable land management.[42] The inadequate application of technology is another related obstacle. The objectives set out in NAP3 aim to address these impediments, by setting six specific outcome targets and proposing tangible and pragmatic solutions, in order to achieve the overall objective to "prevent and reverse desertification and land degradation in affected areas and to mitigate the effects of draught in Namibia in support of poverty reduction and environmental sustainability".[43] Emphasis is placed on improving cross-sectoral collaboration between Government agencies *inter se*,[44] as well as between relevant actors and research institutes. This is intended to allow for research and subsequent data to be used more effectively when developing and implementing policies and programs.[45] Additionally, the NAP3 discusses policies and programs currently in place and proposes improvements where deemed necessary.[46]

The 2003 Maputo Convention, which entered into force in 2016 has one article dedicated to land degradation and soil conservation, overlapping with those contained in the UNCCD. Herein, agricultural activities have been identified as one important driver for land degradation in Africa, pointing out conflicts around land tenure that require parties to develop and implement land tenure policies that are able to facilitate the measures to prevent land degradation and to conserve and improve the soil.[47]

It has been stated in recent studies that there is an overlap and potential competition and conflict between the UNCCD and the FAO, which also claims leadership regarding international soil. Both regimes are major international actors with high participation and political legitimacy in this field. Moreover, there seems to be an overlap with the Convention on Biological Diversity (CBD) in terms of legal scope and mandate regarding soil biodiversity. Here the CBD is probably the more relevant international instrument, as the diversity within species and ecosystems is closely linked and reliant upon the conservation of soils and ecosystems. It aims at conserving biological diversity, promoting the sustainable use of its components, and encouraging equitable sharing of the benefits arising out of the utilisation of genetic resources.[48]

41 Ibid:3.
42 This specifically refers to overlapping and contradictory capacity of Ministries and Departments with opposing goals.
43 GRN (2014d:13).
44 Ibid:44.
45 Ibid:46ff.
46 Ibid:31ff.
47 See with further references, Bodle *et al*. (2020:19).
48 Ibid:53.

3 Soil, SDGs and the Right to Food

The Sustainable Development Goals (SDGs) were formulated as a successor to the Millennium Development Goals at the United Nations Conference on Sustainable Development. The SDGs were adopted in 2015 and Goal 15.3 therein pertains to achieving the "[p]rotection and promotion of sustainable use of terrestrial ecosystems, halt desertification, land degradation and biodiversity loss" and further aims to "achieve a LDN world". Although not legally binding, the SDGs, and in particular the Land Degradation Neutrality (LDN) target in SDG 15.3, have at least established a political consensus for continued dialogue that guides national policies and governmental action for national land and soil policies.[49]

From the aforementioned it becomes clear, that the international soil governance framework remains highly fragmented, while the displayed international law instruments cover different aspects of soil protection in a relatively unconcerted manner.[50]

Soils are essential in ensuring food security and thus also the right to food.[51] Strategies in support of the progressive realisation of the right to food seem to be very much in line with the recommendations of the Committee on Economic, Social and Cultural Rights in its general comment No. 12 on the right to adequate food (para. 21).[52]

According to Article 25(1) of the Universal Declaration of Human Rights (UDHR), everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, while Article 11 of International Covenant on Economic, Social and Cultural Rights (ICESCR) recognises the right of everyone to an adequate standard of living for himself and his family, including adequate food; as a fundamental right of everyone to be free from hunger.

Article 11(2) ICESCR in recognising the fundamental right of everyone to be free from hunger, compels Parties to take measures to (a) improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilisation of natural resources; (b) taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need.

Similarly, Article 24(2)(c) of the Convention on the Rights of the Child (CRC) obliges Parties to take appropriate measures to combat disease and malnutrition, including within the framework of primary health care, through, inter alia, the provision of

49 Ibid:11.
50 Ruppel *et al*. (2021); Ruppel (2021b).
51 European Commission (2020).
52 Cf. with further references De Schutter (2014:para. 40).

adequate nutritious foods, taking into consideration the dangers and risks of environmental pollution.

In addition to the international human rights framework, regional human rights treaties have been developed, such as the African Charter for Human and People's Rights (Banjul Charter). It has been ratified by most African states and is considered to provide implicit recognition to the right to food in its Articles 4 (right to life), 16 (right to health) and 22 (right to economic and social development), as interpreted by the African Commission on Human and People's Rights Principles and Guidelines on the implementation of Economic, Social and Cultural rights in the African Charter on Human and People's Rights and in the case law of the African Commission. The right to food is further expressly recognised in relation to women in Article 15 of the Protocol to the Banjul Charter on the Rights of Women in Africa. The vast majority of African countries have ratified these regional and relevant international human rights treaties.[53]

While states have the obligation to respect, protect and fulfill the human right to food, this obligation is complemented by the following principal non-legally binding instruments relating to the right to adequate food, namely the 1974 Universal Declaration on the Eradication of Hunger and Malnutrition; the 1996 Rome Declaration on World Food Security; and the 2004 Voluntary Guidelines to support the progressive realisation of the right to adequate food in the context of national food security.

In addition, the SDGs provide a universally accepted framework to foster global collaboration with a strong emphasis on the rule of law and human rights. While Agenda 2030 is aimed at fostering and renewing multilateralism and international cooperation on the global but common challenges, the SDGs include economic and social development goals that potentially involve trade-offs with environmental sustainability. One of society's most urgent challenges is to satisfy the rights of people to a 'good life', including adequate food and nutrition, while remaining within the planetary boundaries. In other words, we need to reconcile agriculture and the environment to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture" (Zero Hunger, SDG 2) and also "protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss" (Life on Land, SDG 15).[54]

In terms of the right to food, the SDGs call for more sustainable production and consumption patterns and agricultural and food systems that protect natural resources (i.e. soil). Possible supply chain approaches, for example, intervene at the point of end consumption of such products, the production of which in distant, politically sovereign states causes sustainability risks.

The 2014 Malabo Declaration of the African Union on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods is

53 FAO (2018a).
54 Larbodière *et al*. (2020:8).

another set of goals for a targeted approach to achieve the agricultural vision for the continent which is shared prosperity and improved livelihoods. In the Declaration the signatories inter alia commit themselves in the pursuit of agriculture-led growth as a main strategy to achieve targets on food and nutrition security and shared prosperity; and especially to ending hunger in Africa and to halving poverty by the year 2025, through inclusive agricultural growth and transformation and by means of enhancing resilience of livelihoods and production systems to climate variability.[55]

4 Soil and Global Climate Governance

The 1992 the United Nations Framework Convention on Climate Change (UNFCCC) was adopted to regulate levels of greenhouse gas concentration in the atmosphere, so as to, inter alia, avoid the occurrence of climate change on a level that would compromise initiatives in food production. Article 2 of the UNFCCC defines the parties' ultimate objective as the stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

So far, international climate policy has mostly focused on emission sources and thus on the avoidance of greenhouse gas emissions, for example from the electricity sector, the production industry, transport, and land-use changes. This will, however, be increasingly complemented by the preservation and enhancement of emission sinks to remove carbon dioxide from the atmosphere. To achieve the global climate targets adopted by the UNFCCC, alternative mitigation methods, as for example through programmes for re- or afforestation and the restoration of ecosystems, become more and more relevant. Despite the fact that the combination of bioenergy and carbon capture and storage, increased carbon sequestration in soils,[56] and the direct capture of CO_2 from ambient air need to be further researched and are not yet at the stage of market maturity, the carbon removal approach has considerable potential, while soils are the world's second largest carbon sink after the oceans.[57]

> The most potentially devastating impacts of industrial modes of agricultural production stem from their contribution to increased greenhouse gas emissions. Together, field-level practices

55 Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods Malabo, Equatorial Guinea, 26 June 2014, at https://au.int/sites/default/files/documents/31247-doc-malabo_declaration_2014_11_26.pdf, accessed 25 November 2020.

56 Soil carbon sequestration is the process of capturing atmospheric CO2 through changing land management practices to increase soil carbon content. Various land management practices promote soil carbon sequestration.

57 Geden / Schenuit (2020:5).

> represent approximately 15 per cent of total human-made greenhouse gas emissions, inter alia from the loss of soil organic carbon in croplands.[58]

The 2015 Paris Agreement, as part of the UNFCCC regime, in its Preamble includes the explicit acknowledgement "that climate change is a common concern of humankind" and that "Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights". As such the agreement binds its parties regarding activities on their respective territories and under their control.

The Paris Agreement supplements the UNFCCC and the Kyoto Protocol of 1997 by incorporating existing elements of this regime. Both the UNFCCC and Kyoto Protocol adopted rules on reporting and accounting for emissions from land use, land use change and forestry (LULUCF). These rules determine how parties have to report LULUCF in their regular emission inventories, which under the Kyoto Protocol is also relevant for accounting whether parties meet their emission reduction targets.[59]

According to Article 2, the Paris Agreement's overarching objective is to keep the increase in global temperature well below 2°C, or even 1.5°C. Parties are required to prepare and present individual climate plans (Nationally Determined Contributions - NDCs) every five years that set out how the party intends to contribute to the collective objectives. Under the Paris Agreement, the Principle of Common but Differentiated Responsibilities (CBDR) is an obligation for all parties when formulating their NDCs. This is the result of protracted negotiations about the role and impact of historic and present, and of relative and absolute, GHG producers. Although the Paris Agreement does not specify how to take the CBDR principle into account, principles of justice and equity help to improve the understanding of the normative implications of climate law under the Paris Agreement. While equity as a normative concept has a sense of fairness, justice plays an important role in legal-political decisions in relation to climate policy in particular and through differentiation in obligations.[60] GHG emissions have global, not merely national, effects, which on the basis of the need to contain the potential proliferation of trade distortions due to climate policies in terms of equity, may justify sanctioning the inaction by large GHG emitters, which can have a serious impact on local food production affected by global warming.[61]

Through the sustainable development mechanism in Article 6, the Paris Agreement allows the space to harness the lowest cost mitigation options worldwide. This may incentivise policymakers to enhance mitigation ambition by speeding up climate action.[62] This implies that global climate policy development and the future of the carbon market also relate to mechanisms which support and encourage sustainable climate

58 De Schutter (2014:para. 7).
59 Bodle *et al*. (2020:17).
60 Lawrence / Reder (2019).
61 Häberli (2018:34).
62 Tänzler *et al*. (2019).

policies in host countries as production-based accounting does not necessarily reflect a country's contribution to global emissions because globalisation and consumption can prompt emissions beyond borders.

By signing the Paris Agreement (and in particular Article 14 therein), parties agreed on long-term goals backed by national plans that are collectively reviewed in the global stocktake, which is key to increasing ambition. While the first planned stocktake is scheduled for 2023, it has already become apparent today that the improved accuracy of carbon stock estimates would allow for more targeted interventions and better monitoring of the NDCs – which has equal significance for the protection of soil in the context of agricultural production.[63] Whereas the UNFCCC does not explicitly provide for specific trade measures, the Kyoto Protocol contains more detailed obligations related to the reduction of greenhouse gases and provides for trade-affecting techniques such as tax impositions on carbon dioxide emissions and the elimination of subsidies adversely affecting the objective of the UNFCCC.[64] In addition, the parties to the Paris Agreement explicitly recognise

> the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change;

while Article 2(1)(b) of the Paris Agreement provides for

> [in]creasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production.

Notwithstanding the legally neutral wording of Article 2(1) when read in isolation, achieving its purpose[65]

> is mandatory not for any one state or group of states, of course; it is mandatory for the state parties collectively. This straightforward logical implication of the Paris Agreement does not seem to have been noticed before, despite its potentially profound consequences.

The Paris Agreement further requires parties to engage in adaptation planning and implementation that takes into account "vulnerable people, places and ecosystems" and builds "the resilience of socio-economic and ecological systems, including through economic diversification and sustainable management of natural resources". Of course, soil as well as land use, land degradation and sustainable land management are closely linked to climate change in terms of carbon capture and storage and the emissions from deforestation and agriculture. This is underlined by Article 4 of the Paris Agreement, which explicitly includes the target "to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second

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63 Interestingly, in its NDCs, the Republic of South Africa, states that policy instruments under development include regulatory standards and controls for specifically identified GHG pollutants and emitters; see https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf, accessed 12 February 2021.

64 Ruppel (2018).

65 Zahar (2020).

half of this century", although the Paris Agreement fails to explicitly mention 'soil', 'land' or 'agriculture'. As such, the Paris Agreement only indirectly addresses soil protection in the general context of climate change. And despite the importance of land use and soil management for climate change, the UNFCCC, the Kyoto Protocol and the Paris Agreement have not established a comprehensive regime with regard to land-related climate change measures.[66] Article 5(1) of the Paris Agreement obliges parties to take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases as referred to in Article 4(1)(d) of the Convention. Yet, in fact, agriculture first appeared in the ongoing climate negotiations under the Koronivia joint work on agriculture programme at COP 23 in 2017:[67]

> The decision officially acknowledges the significance of the agriculture sectors in adapting to and mitigating climate change. Countries agreed to work together to make sure that agricultural development ensures both increased food security in the face of climate change and a reduction in emissions. The joint work is expected to address six topics related to soils, nutrient use, water, livestock, methods for assessing adaptation, and the socio-economic and food security dimensions of climate change across the agricultural sectors.

In order to achieve the aforementioned, countries should take all appropriate measures according to their capabilities to progressively achieve the protection of the interests of all concerned. And when speaking of 'all concerned' in the context of global food security, this phrase is by no means an exaggeration. Much of the work to translate the Paris Agreement and the NDCs into concrete climate interventions in agriculture is in progress.

> Food systems are responsible for 21-37% of global greenhouse gas emissions and a major driver of deforestation and land degradation, yet there is still widespread food insecurity and malnutrition. Managing the land sector (agriculture, forestry, wetlands, bioenergy) sustainably and holistically could contribute up to 30% of the global climate mitigation effort.[68]

In 2018, the Paris Agreement adopted a transparency framework which, inter alia, included rules for reporting on and accounting for land use and land-use change, which is expected to eventually replace the existing UNFCCC framework. This may open opportunities also to shape new rules complementing the UNFCCC's Koronivia joint work on agriculture.

A wide range of policy instruments is needed to strengthen the mutually supportive role of the Paris Agreement and other international agreements when it comes to the protection of soil. The AFOLU (agriculture, forestry, and other land use) sector plays an important role in the 1.5°C pathways and is, inter alia, responsible for food production. Changes in the AFOLU sector are driven by demand changes, efficiency of production, and policy assumptions. While demand for agricultural products and other land-based commodities is influenced by consumption patterns, including dietary

66 Bodle *et al*. (2020:53).
67 See http://www.fao.org/climate-change/our-work/what-we-do/koronivia/en/, accessed 12 February 2021.
68 Palahí *et al*. (2020).

preferences and food waste (affecting demand for food), policy assumptions relate to the level of land protection, the treatment of food waste, policy choices about the timing of mitigation action, the choice and preference of land-based mitigation options, and interactions with other sectors and trade.[69]

In the soil-land-climate interface, effective policy responses must include carbon pricing, emissions trading schemes (including net CO_2 emissions from agriculture), carbon taxes,[70] regulations limiting GHG emissions and air pollution, forest conservation (mix of land-sharing and land-sparing) through participation, incentives for ecosystem services and secure tenure, protecting the environment, microfinance, crop and livelihood insurance, agriculture extension services, agricultural production subsidies, low export tax and import tariff rates on agricultural goods, dietary awareness campaigns, taxes on and regulations to reduce food waste, improved shelf life, sugar/fat taxes, and instruments supporting sustainable land management (including payment for ecosystem services, land-use zoning, REDD+, standards and certification for sustainable biomass production practices, legal reforms on land ownership and access, legal aid, and legal education), as well as reframing these policies as entitlements for women and small agricultural producers.[71] Similarly, border carbon adjustments can help level the playing field and prevent emissions leakage,[72] which occurs when climate action in one region merely shifts emissions elsewhere.[73]

5 Soil Protection in the National Legal Framework

5.1 The Constitution and Land Tenure in Namibia

According to Article 1(6) of the Namibian Constitution of 1990, the Constitution is the law above all laws. Therefore, all legislation ought to be consistent with the provisions

69 Rogelj *et al*. (2018).

70 Such was for example the Carbon Tax Act 15 of 2019, a relatively new addition to South Africa's legislative record, aiming to provide for the imposition of a tax on the carbon dioxide (CO2) equivalent of greenhouse gas emissions; and to provide for matters connected therewith. This aim is expected to be achieved by the deployment of a range of measures to support the system of desired emissions reduction outcomes, including the appropriate pricing of carbon, the use of emissions offsets and economic incentives for rewarding the efficient use of energy to provide appropriate price signals to help nudge the economy towards a more sustainable growth path. Such tax phased in over time allows for learning, while the tax revenue can for example finance additional climate change mitigation efforts. Whether a carbon tax yields a better result, for global food security, than carbon sequestration, depends on many different factors. Taxation for climate change mitigation could be included under any broad (NDC) commitment to reduce emissions or in the promotion of green technologies.

71 Rogelj *et al*. (2018).

72 Peters *et al*. (2011).

73 Kasturi *et al*. (2019).

of the Constitution. The Constitution lays the foundation for all policies and legislation in Namibia and contains three key environmental clauses relevant to sustainable use of natural resources.[74]

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 proved, such natural resources are owned by the state. The provision thus implies that natural resources can be legally owned as private property. The land (and the soil on the land) belongs to the state in terms of Article 100 of the Constitution, if not otherwise lawfully owned. By means of Article 95(l), Namibia is obliged to protect its environment and to promote a sustainable use of its natural resources.[75] It compels state organs to be directed by the environmental principle of state policy.

The era of colonial reign over Namibia has skewed land ownership of the country in favour of a white minority. After Namibia acquired Independence, the Government promulgated several laws aimed to implement a comprehensive plan of land reform. Even though there have been shortcomings with regards to the overall success of land redistribution in Namibia, a framework for the reform of land tenure, acquisition and ownership was formulated.

Natural persons, the State and legal entities can hold land in Namibia. Overall, the State holds all communal land in trust for the indigenous tribes who reside on the land, in addition to owning all nature reserves, game parks, military bases and certain urban properties.[76] The types of land tenure are ownership/freehold tenure; communal tenure; conservancies and leaseholds. Regarding tenure in informal settlements, the practice incepted prior to 1990 of Permissions to Occupy (PTO) still applies but is in the process of being phased out and replaced by leaseholds under the Communal Land Act.[77]

Ownership and freehold tenure gives owners the rights to property as developed in common law. Most of the agricultural (commercial) land in Namibia, namely 86.2% is privately owned by individuals, companies, estates and trusts, churches, farmers associations and foundations. The remaining 13.8% is owned by government for resettlement farms, servitudes and research farms.[78] The Communal Land Reform Act, in addition to the common law, regulate leaseholds. The Communal Land Board can grant communal and commercial land leases for a period of 99 years.[79] Land held in such leasehold may be transferred, inherited, renewed and mortgaged.[80]

74 Ruppel (2016b:30).
75 Ibid.
76 Ibid:6.
77 No. 5 of 2000.
78 NSA (2018b).
79 Sections 2 and 3 of Act No. 5 of 2000.
80 Amoo (2014:234).

Communal tenure is held in trust by the Government, for the benefit of local communities. Traditional Authorities and Land Boards generally administer this land and all such land is registered with the Land Board.[81]

Conservancies – once established – become legal entities and for such purposes require identified boundaries, a constitution and defined membership in addition to demonstrating the ability to manage finances.[82] The Nature Conservation Ordinance No. 4 of 1975 and its Amendment in 1996 form the legal framework for this type of land tenure.

The occupancy in informal settlements is still in a period of major transition. As stated above, PTOs as issued during the previous administration are in the process of being phased out. However, these give the holder a right to apply for ownership or leasehold rights once these become available.[83] The new Flexible Land Tenure Act[84] is aimed to provide secure tenure to the large part of the population residing in informal settlements and envisages an alternative system to the formalisation of land rights in this context.

5.2 Policy, Legislative, and Institutional Framework Relating to Soil Protection: An Overview

With roughly 78% of the country being used for farming purposes and more than 1.2 million people living on such land,[85] the preservation of arable land in Namibia is imperative. Despite the fact that the whole agriculture and forestry sector, which includes hunting, and fishing, as well as cultivation of crops and livestock production, only made up 6.6% of GDP in 2019,[86] most of the land in Namibia is used for agricultural purposes[87] and in 2019, 21.9% of total employment in Namibia was in the agricultural sector.[88] Agriculture therefore plays a vital role for the livelyhoods in the country. It must be kept in mind that, farming practices utilised on communal land, impact the quality of soil and other resources. Thus, in order to fully develop sustainable farming practices, communal farming methods must also be addressed sufficiently.

81 The land is allocated by the traditional authority for residential or agricultural use, as well as other uses as recognised by the Minister.
82 Ibid.
83 Ibid.
84 No. 4 of 2012.
85 Mendelsohn (2006:10).
86 As per World Bank Indicator data available at https://databank.worldbank.org/source/world-development-indicators, accessed 25 March 2021.
87 Mendelsohn (2006:10).
88 World Bank Indicator data available at https://databank.worldbank.org/source/world-development-indicators, accessed 25 March 2021.

Furthermore, appropriate support must be given to 'emerging' commercial farmers, who have received land in the frame of land redistribution in Namibia.

The name of the Ministry of Agriculture, Water and Forestry changed to the Ministry of Agriculture, Water and Land Reform in 2020. It is responsible for soil management and the promotion and development of sustainable soil management practices in the agriculture, water and forestry sectors through appropriate policy and legal instruments. The directorate for Agriculture Research and Development aims to facilitate the development and management of human resources at all levels and in all disciplines, and to undertake well-balanced crop, livestock and natural resource research within the communal and commercial sectors, with the goal of contributing to increased productivity and sustainable utilisation of natural resources under arid, semi-arid and sub-humid conditions, and thereby improving the living standards of the Namibian population.[89] Several national policies are also aimed at making sustainable farming the norm in Namibia.

The Third National Action Programme for Namibia (NAP3), is the framework intended to aid in implementing the UNCCD between 2014 and 2024. This programme focuses largely on the importance of sustainable land management in Namibia, in light of its arid climate. The programme also names several problematic practices which need to be addressed in the context of sustainable land management and farming in Namibia. These include overgrazing and overstocking of land, in addition to water and soil degradation. NAP3 further illustrates pragmatic steps which can be taken to address these issues, such as raising awareness and education;[90] ensuring reliable data is available which can lay the foundation for new policies and implementation of existing ones and providing for a functional monitoring system.[91]

The National Agricultural Policy of 1995 promotes the sustainable use of Namibia's land and natural resources,[92] in addition to demanding the strict implementation of instruments pertaining to soil erosion, which is widely applicable in the context of sustainable farming.

The National Drought Policy and Strategy of 1997 includes provisions aimed at reducing the long term vulnerability to drought, by means of improving soil fertility and moisture retention, which is only attainable by means of sustainable farming methods. In this light, the Regional Planning and Development Policy of 1997 promotes strategies such as controlled grazing cycles.[93] However, some measures envisaged in the Drought Policy, such as the subsidy on fodder, have contradicted this objective.[94]

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89 See http://www.mawf.gov.na/directorate-research-and-development, accessed 12 July 2020.
90 Seely / Montgomery (2009:98ff.).
91 GRN (2014d:15).
92 GRN (1995c:para. 21).
93 GRN (1995c).
94 The fodder subsidy has been criticised for leading to unsustainable farming practices, since its inception. See Vigne / Whiteside (1997:51).

The successful implementation of the Dry Land Crop Production Programme by the MAWF has aided in increasing food production and security in Namibia.[95] Ongoing research into crops which are adapted to Namibia's climate are clear indications of active steps taken to promote sustainable farming practices.[96]

Various other national policies, strategies and action plans complement the most relevant pieces of legislation for the protection of soil in Namibia.[97] The environmental framework legislation of cross-sectoral nature such as the Environmental Management Act, No. 7 of 2007 is rather broad in scope, while sectoral legislation such as the Soil Conservation Act, No. 76 of 1969 and the Agricultural (Commercial) Land Reform Act, No. 6 of 1995 is more specific in nature. Apart from the aforementioned pieces of legislation, the Communal Land Reform Act, No. 5 of 2002, the Minerals (Prospecting and Mining) Act, No. 33 of 1992, the Forest Act, No. 12 of 2001, the Agricultural Pests Act, No. 3 of 1973, and the Plant Quarantine Act, No. 7 of 2008 will also be relevant to soil protection.

5.3 Land and Agricultural Policies

A number of policies impact on land and agriculture in general and they do have provisions dealing with environmental protection. These policies include the National Agricultural Policy, the National Drought Policy and Strategy, and the Namibia Forest Development Policy. To ensure environmental protection these policies promote Community-Based Natural Resources Management (CBNRM). This means that the role of the Government is limited to regulatory functions and the provision of technical support that will enable farmers to improve their capacity to manage resources more effectively. The Government provides the necessary fiscal and administrative support under these policies, while the farmers do the groundwork of managing their land and agricultural resources. However, issues such as bush encroachment require collaborative effort.

95 MAWF (2014a:18).

96 Ibid:41.

97 These include inter alia the Third National Action Programme for Namibia to Implement the United Nations Convention to Combat Desertification 2014-2024 (NAP3); the National Biodiversity Strategy and Action Plan (NBSAP) 2013-2022; the National Climate Change Strategy and Action Plan (2013-2020); the Forestry Strategic Plan 1996; the National Drought Policy and Strategy 1997; and the Strategic Action Plan for the Implementation of Renewable Energy Policy 2006.

5.3.1 Land-use Planning: Towards Sustainable Development

This policy document drafted by the Ministry of Environment and Tourism in 1994 defines five physiographic land forms: Communal state land; privately-owned commercial farmland; proclaimed state land; urban areas; and wetland systems, including their catchment areas. The policy emphasises sustainability of natural resources, biodiversity and essential ecological processes.

5.3.2 The National Land Policy

The National Land Policy drafted in 1998 is based on constitutional principles and on the national commitment to redress the social and economic injustices inherited from Namibia's colonial past. The policy calls for the establishment and proclamation of urban areas as townships and municipalities and strives to promote decentralisation and community involvement. This policy proposes financial and tax incentives for the protection and rehabilitation of natural environments (e.g. planting of indigenous trees and using alternative energy to reduce rates of deforestation and pollution). It states that, in accordance with Article 95(1) of the Constitution, the policy will promote environmentally sustainable land use, and goes further to state that failure to demonstrate environmental sustainability may be grounds for the denying or termination of a title.

One of the aims of this policy is to establish a Land Use and Environmental Board (LUEB) to promote environmental protection and contribute towards coordinated planning and management at national and regional levels. This LUEB shall ensure that environmental protection is promoted in order to guarantee environmental, social and economic sustainability.

5.3.3 The National Resettlement Policy

This policy provides for resettlement, which is institutionally, socially, economically and environmentally sustainable and will enable the beneficiaries to become self-supporting, in accordance with the basic objectives of Government.

5.3.4 The National Land Tenure Policy

The policy covers all land tenure systems in urban, communal, commercial (freehold) and resettlement areas and is intended to guide all land tenure rights in Namibia. The policy promotes sustainable utilisation of the nation's land and other resources, provides a way to regulate different land tenure right systems, provides secure tenure for

informal urban settlers, farm workers and occupiers (those who have been employed less than ten years on a single farm and do not have secure tenure elsewhere), and provides guidelines on compensation for occupiers of expropriated land. In keeping with the National Agricultural Policy (1995), the policy recognises the environmental limitations of a country as dry as Namibia.

5.3.5 The National Agriculture Policy

In 1995, Namibia's first National Agricultural Policy, which guided the development of the Namibian agricultural sector. It provided an enabling environment for increased food production by smallholder producers, as a means of improving employment opportunities, incomes, household food security and the nutritional status of all Namibians. The National Agricultural Policy aimed at avoiding long-term or continuing subsidies. However, the policy still allowed for the possibility that well-targeted subsidies can play an important part in achieving short-term agricultural and socio-economic objectives.[98] The 1995 National Agricultural Policy regards land degradation as a serious problem and recognises that water resources in Namibia are limited and that growth within the agricultural sector should not be at the expense of the natural environment. Furthermore, it encourages the use of Environmental Impact Assessments for agricultural projects and proposes a review of legislation related to the use of agrochemicals. The aims of the National Agricultural Policy are largely economic and focus on increasing agricultural productivity and real farm income as a contribution to national and household food security. It recognises the limitations imposed by the Namibian climate and soils and seeks to promote sustainable utilisation of the land and other natural resources within the context of a vulnerable ecosystem. Potential problems such as deforestation, soil erosion, bush encroachment and over-grazing are addressed.

Following a review of the 1995 Policy and a broad consultative process that took due account of the environmental and socio-economic changes that have taken place since 1995, the 2015 National Agriculture Policy was launched aiming at is aimed at contributing to increased agricultural production, agro-processing and marketing as well as to serve as an overarching policy in the agricultural sector.

The 2015 Agriculture Policy focuses on the policy and strategies for the agriculture sector with a focus on the agricultural value chain and its support systems. Main themes include production, agro-industry development, marketing and trade, research and development, international cooperation, training and capacity building, management information systems, agro-financing, co-operative development and extension services. Furthermore, the Policy outlines the role of stakeholders, policy

98 Groenewaldt (2008).

implementation and revision as well as monitoring and evaluation mechanisms. Within the set of strategies, the Policy states that Government aims to enforce soil conservation through implementation of the soil conservation legislation in order to implement the stated policies on crop production.[99]

5.3.6 The Green Scheme Policy

The Green Scheme Policy of 2003 (GSP)[100] makes provision for several irrigation projects to be commenced in Namibia:[101]

> The Green Scheme is an initiative conducted by the Ministry of Agriculture, Water and Rural Development to encourage the development of irrigation based agronomic production in Namibia with the aim of increasing the contribution of agriculture to the country's Gross Domestic Product and to simultaneously achieve the social development and upliftment of communities located within suitable irrigation areas, but to also promote the human resource and skills development within the irrigation sub-sector to possibly enhance cross-border investment and facilitate the exchange of relevant and limited resources with neighbouring countries in this regard.

The policy emphasises environmental impacts assessment requirements and water pricing methods. However, the implementation has been haphazard and marked by several obstacles. These are most markedly the potential loss of biodiversity if the project is expanded as planned. The GSP has further been criticised for over-emphasising the potential behind irrigation schemes to become the driving force behind agricultural production, in spite of the fact that Namibia is one of the driest countries south of the Sahara.[102]

5.3.7 The National Drought Policy and Strategy

The National Drought Policy and Strategy of 1997 shifts the onus of drought management from Government aided relief to appropriate farming techniques aimed at empowering farmers to better cope with droughts themselves. Although incentives such as the Forum for Integrated Resource Management (FIRM) promotes this actively in communal areas that participate in the National Programme to Combat Desertification (NAPCOD)[103] recent responses to crop failures in the north and north east have again reverted to relief programmes. Drought preparedness is one of the important aspects

99 GRN (2015d:9).
100 Text available at http://www.iwrm-namibia.info.na/downloads/green-scheme-policy---final1.pdf, accessed 16 November 2015.
101 Green Scheme Policy para. 1.1.5.
102 See GRN (2005b:12).
103 Bethune (2003).

of sustainable resource use and strongly advocated in activities of conservancies elsewhere in the country.

5.3.8 The Regional Planning and Development Policy

This policy drafted in 1997 under the supervision of the National Planning Commission acknowledges trends of increasing degradation of pastures, rangelands and woodland and gives attention to soil, water and forest management as development tools. It promotes strategies such as soil conservation and controlled grazing cycles.

5.4 Land and Agriculture Related Legislation

5.4.1 The Environmental Management Act No. 7 of 2007

Although the Environmental Management Act (EMA) does not include any provisions relating specifically to soil protection and management, the definition of environment in Section 1 does include references to "land" and "all organic and inorganic materials". Furthermore, in Part VII relating to Environmental Assessment, the listed activities which require an environmental clearance certificate to be issued before such activities can be undertaken, include land use and transformation; resource renewal; agricultural processes; waste and sewage disposal as well as any other which the Minister considers necessary for the purposes of listing. These activities can generally relate to soil management and protection and requiring environmental clearance certificates provides a valuable protection mechanism in this context.

Section 48 in Part IX further allows for the Minister to introduce legislation or make such regulations which give effect to international agreements to which Namibia is a party to. The provision goes on to list areas which can be covered by such legislation and regulations. To date, no regulations relating specifically to soil and related activities, or agreements have been promulgated.

5.4.2 The Communal Land Reform Act No. 5 of 2002

The Communal Land Reform Act provides for the allocation and administration of all communal land in the areas described in the first schedule to this Act or in any area declared to be communal land under Section 16(1)(a). The Minister is obliged to establish Communal Land Boards to perform the functions conferred on such a board by the Act within the area for which each board is established. The boards are to exercise control over the allocation and the cancellation of customary land rights by chiefs or

traditional authorities. They have to consider and decide on applications for the right of leasehold, establish and maintain a register and a system of registration of customary land rights and leasehold rights, and give advice to the Minister.

The Act makes provision for the prevention of land degradation and for mitigating the impacts of mining, prospecting, road works and water provision. It provides for certain rights to communal farmers and traditional authorities and representation on Communal Land Boards. Of note is the provision of Communal Land Boards, with representation of officials from the Ministry of Environment and Tourism and the Ministry of Agriculture, Water and Forestry as well as representatives from any of the conservancies.

The President of Namibia may declare non-alienated state land to be a communal area. Communal areas are vested in the state, in trust, for the benefit of the traditional communities residing in those areas and for the purpose of promoting the economic and social development of the people of Namibia, especially the landless and those with insufficient access to land. Customary land rights are to be allocated upon application for a limited period. Only specific customary land rights may be allocated in respect of communal land, and size limits are imposed.

The Act also provides for the recognition of existing customary land rights, and the granting of a right of leasehold for agricultural purposes or a right of grazing on communal land. The Act makes provision for the prevention of land degradation and, therefore, indirectly contributes to the preservation of biological diversity. Fundamental environmental provisions of the Act refer to the allocation of customary land rights. If a land right is being used predominantly for a purpose not recognised under customary law, customary land rights may be cancelled according to Section 27 of the Act. Furthermore, special provisions are made with regard to grazing rights. A chief or traditional authority is vested with the power to prescribe conditions relating to the kind and number of stock that may be grazed on communal land, as well as to the section or sections of the commonage where stock may be grazed, and the grazing in rotation on different sections. This provision, in particular, ensures the sustainable use of grasses and herbs.

Section 45 of the Act addresses issues pertinent to the conservation and sustainable management of certain natural resources. The Minister may make regulations in relation to watercourses, woods and the use of water (Section 45(g)) and to the combating and prevention of soil erosion, the protection of the pastoral resources and the limitation and control of the grazing of stock.

5.4.3 The Soil Conservation Act No. 76 of 1969

The Communal Land Reform Act 5 of 2002 specifically refers to the Soil Conservation Act (Soil Act), and as such makes it clear, that this Act remains applicable in Namibia.

The Soil Act gives wide ranging powers to the Minister. These include powers to issue directives relating to the cultivation of land,[104] the management of water and drainage,[105] in addition to the protection and stabilisation of soil surfaces.[106]

The Act makes provision for the prevention and control of soil erosion and the protection, improvement and conservation of soil, vegetation and water supply sources and resources. Although the jurisdiction of the original Act was limited to commercial land, the recent Communal Land Reform Act of 2002 specifically mentions it and requires compliance in terms of conservation and prevention of soil erosion (Clause 31), implying that these measures apply to communal land areas too.

The Act provides for the construction and maintenance of soil conservation works, at the discretion of the Minister.[107] The costs of such construction may be attributed to the state or to owners of such land.[108] Furthermore, the Act empowers the Minister to carry out soil conservation for the purposes of research or demonstrations,[109] subject to the land owner's consent. The Soil Conservation Committees as provided for in Part III of the Act are generally appointed for certain areas, and act in an advisory capacity to the Minister.[110] Even though this discretion exists, the Ministry does not seem to currently have such a committee in session. A wide power to expropriate land is given to the Minster in terms of Section 18. It is stated, that expropriation may be required for the prevention of soil erosion and stabilisation of land, as well as prevention of drift-sand and protection of catchment areas.[111] One of the enforcement mechanisms for compliance is set out in Section 21, which provides for penalties in the instance of non-compliance. This conduct is further criminalised as an offence which can be punishable by a fine or imprisonment.[112] One of the biggest obstacles which hinder effective soil conservation in Namibia is the fragmentation of responsibilities relating to soil. As yet, there is no cohesive policy to coordinate the effectiveness of existing laws and regulations with regard to soil protection in Namibia.

5.4.4 The Agricultural (Commercial) Land Reform Act No. 6 of 1995

Approximately 36.2 million hectares, representing 44 percent of the total land area or 52 percent of agriculturally utilisable land, continue to be held under freehold title. This land is commonly referred to as the commercial farming sector and it is regulated

104 Section 3(1)(a).
105 Section 3(1)(c), (d), (f).
106 Section 3(1)(e), (g) and (h).
107 Part II of the Act.
108 Section 7(2).
109 Section 8.
110 Section 9 (1) and Section 10.
111 Section 18(1).
112 Section 21(1).

mainly by the Agricultural (Commercial) Land Reform Act of 1995. This Act, as its Preamble states, was passed to provide for the acquisition of agricultural land by the state for the purposes of land reform and for the allocation of such land to Namibian citizens who do not own or otherwise have the use of any or of adequate agricultural land, and foremost to those Namibian citizens who have been socially, economically or educationally disadvantaged by past discriminatory laws or practices. The Act vests in the state a preferential right to purchase agricultural land and it empowers the state to compulsorily acquire certain agricultural land for the purposes of land reform. It also regulates the acquisition of agricultural land by foreign nationals and establishes a Lands Tribunal to adjudicate disputes that may arise in land matters.

5.4.5 A Land Act?

In 2007, a process of reviewing and amending the Agricultural (Commercial) Land Reform Act,[113] and the Communal Land Reform Act,[114] into one Land Act was started. This process had been finalised in cooperation with relevant stakeholders,[115] and in 2016, the Minister of Land Reform tabled the Land Bill for discussion in the National Assembly (Republic of Namibia, 2016). The aim of the Bill is, *inter alia*, to consolidate and amend the Agricultural (Commercial) Land Reform Act, No. 6 of 1995 and the Communal Land Reform Act, Act 5 of 2002. As such, the Bill introduces a number of positive changes to existing laws. Despite the fact, that the process of developing new land legislation and policy has been controversial, one of the laudable objectives of the Land Bill is to establish a unitary land system, where Namibians have equal rights, opportunities and security with regard to land, irrespective of where the land is situated. One major challenge of this objective is, however, to harmonise statutory and customary land rights.[116]

5.4.6 The Plant Quarantine Act No. 7 of 2008

The Plant Quarantine Act No. 7 of 2008, which came into force in 2012, replaced the Agricultural Pests Act No. 3 of 1973 which was aimed at preventing the introduction

113 No. 6 of 1995.
114 No. 5 of 2002.
115 GRN (2012b:7).
116 Fn. The 2016 Land Bill: Making law without consultation and policy review (2017) Briefing paper is jointly published by the Institute for Public Policy Research (IPPR) and the Department of Land and Property Sciences at the Namibia University of Science and Technology (NUST), and available at https://ippr.org.na/wp-content/uploads/2017/02/Briefing_Land2017.pdf, accessed 3 February 2021.

and spreading of plants, insects, non-farming exotic vertebrates and diseases that may have proved detrimental to the agricultural sector. The Act provides for the preventing, monitoring, controlling and eradication of plant pests and defines soil as[117]

> material wholly or partly derived from the upper layer of the earth's crust which is capable of sustaining plant life and which contains solid organic substances such as parts of plants, humus, peat, or bark, but excluding any medium which is sterile, composed entirely of unused peat, or is otherwise incapable of harbouring or transmitting plant pests.

As a general rule, soil may not be imported into the country.

6 Concluding Remarks

In terms of this chapter, it can be concluded that soil management should be an integral part of land management instruments or within soil-specific legislation. In Namibia soil management can be found in sectoral legislation on agriculture, land, environment or even water. While some legislative approaches distinguish between different soil types and characteristics in order to determine the specific interventions warranted to achieve the appropriate quality for the land use selected, others focus on issues such as soil quality, contamination and pollution, soil conservation and soil rehabilitation.[118] Fact is that the maintenance and protection of soil is vital in order to allow a continued reliance upon it. Soil maintenance and protection needs to be governed by legislation and policy, along with prescribed and practised enforcement measures. Incentives and deterrents for sustainable land use ensure that private land use is in line with social and other policy objectives and promote certain practices, fertilizers, subsidies, etc. No doubt, sustainable agriculture, rural development and the upliftment of poor and marginalised communities require a cross-sectoral involvement of environment, climate change, land rights, gender equality, traditional and indigenous affairs, health, economy and trade, among others.

Progression in terms of land tenure rights is also necessary to enable soil protection to obviate the effect that land tenure can have on soil. Human influence on the land and natural resources, such as soil, is accelerating as a result of the growth in population on the African continent and the associated increase of food requirements.[119] While scarce, land is more than a source of food security, income and shelter. Especially in Africa, it is also related to cultural identity and is thus often a source of tribal tension or political competition.[120] Therefore, reliable land tenure arrangements will serve to reduce poverty, support sustainable livelihoods, enable social stability and

117 Section 1 of the Plant Quarantine Act.
118 FAO / UNEP (2020:132).
119 Kanianska (2016:4).
120 FAO / UNEP (2020: 93).

housing, and foster environmental protection. Moreover, food security and food availability are highly dependent on secure access to and the productivity of land.[121]

Land-use change is displayed in the change of land-cover, and this change is a key component of global environmental change that is affecting the climate, biodiversity and ecosystems, which in turn has an impact on land-use decisions.[122] Increased compacted areas associated with urban development, for example, increase runoff during rainfall, which accelerates erosion and runoff downstream of the urban catchment. The way land is used plays a considerable role in the quality of soil. Land tenure thus also significantly affects soil conservation. In many countries in Africa, there is still a need for the formalisation of land tenure in respect of both individual and communal land rights and for an integration of different land tenure systems, to achieve a unitary approach that can ensure that all land is administered and regulated. This will ensure land protection and, in particular, soil protection.[123] In order to achieve this, a legal framework is necessary for any registration programme to function and bring about the desired outcomes, such as the administration of land usage and protection of natural resources.[124]

> For most of human history, the natural world has been protected from the most disruptive human influences by relatively humble technology, cultural factors (...) [and] land ownership by the ancestors.[125]

And while customary law, under colonised structures, was seen as inferior to colonial law, the so-called 'repugnancy clause' is no longer valid. Under this clause, customary law was only recognised under the condition that it was "not repugnant to the general principles of humanity recognised throughout the whole civilised world".[126] It was therefore in Namibia and many other African countries after Independence that[127]

> [a]fter generations of missionaries, anthropologists and lawyers, whose first interest was to force African customary law into the procrustean bed of either the bible, civilisation or a western paradigm of rule of law, African customary law begins to breathe again: to breathe the air of Africa.

Legal systems in Africa[128] are made up of a melting pot of cultures, religions and community practices that have culminated in the complexity and all-encompassing nature of the systems.[129] This plurality including customary law and indigenous knowledge in soil-related policies[130]

121 Sandrey (2019/20:134).
122 Kanianska (2016:6).
123 Tlale (2018:267).
124 Ibid:266.
125 Hinz / Ruppel (2008:5).
126 Zenker (2020).
127 Menski (2011:143).
128 Ruppel / Ruppel-Schlichting (2011).
129 Du Plessis (2019:15).
130 Ruppel / Ifejika Speranza (2011:200).

> is likely to contribute to the development of more effective adaptation strategies that are cost-effective, participatory and sustainable. After all, indigenous people have always been tasked to develop flexible mechanisms to cope with climatic conditions and their vulnerability.

And although there are still many improvements that can be made to enhance the protection of soil, education in soil law is also important in order to stress the importance of soil protection measures. The training of lawyers and law students in the subject of soil protection and law can promote the need for any legal system that has secure and effective soil protection measures. This training would see an increase in legal personnel who have the relevant expertise and knowledge to ensure that soil protection law is complied with and improved upon, as well as enforced and monitored. Moreover, when considering improvements that need to be made to soil legislation, it can also be said that the legislation relating to foreign investors should not be neglected:[131]

> Investment for sustainable development in Africa requires political commitment to overcome substantial barriers at various levels. To enable new markets for sustainable development requires adequate regulatory frameworks (international, regional and national) in order to give investors, the necessary confidence. The national state has to balance the interest of attracting (and securing) international investment while promoting peace and security for its population. The most appropriate approach for achieving both of the aforementioned is adherence to and promotion of the rule of law while creating incentive structures for investors to act sustainably and to respect national social development goals, empowerment policies, labour standards and human rights.

The aforementioned is particularly true in the context of 'land-grabbing', where there is a need for legislation that clearly sets out how the foreign investor needs to comply with national interests, as well as a need for legislation that prescribes how foreign investors can acquire, possess, own and utilise land. Such legislation should also highlight and clarify social and environmental responsibilities of the foreign investor, along with the consequences should they fail to comply with these responsibilities.Lastly, both at national and at international law level, improving soil governance includes options for enhancing coordination and coherence. A clearer division of labour between sectors and institutions addressing soil holds significant potential for improving soil governance. After all, it becomes increasingly clear that the element, soil, is both international and domestic in nature and should therefore be pursued in a complementary[132] manner in order be able to counter soil degradation more effectively.

Soil protection has so far too often been neglected in international agreements. Despite this oversight, the climate goals cannot be reached without soil protection and conservation. The same applies when it comes to ensuring the right to food. In fact, soil protection should perhaps be viewed in light of the public trust doctrine, which has its origins in the Roman law property concept of *res communis*.[133] These are things which, by their nature, are part of the commons that all humankind has a right or at least a common interest in the protection thereof.

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131 Ruppel / Borgmeyer (2018); Ruppel / Shifotoka (2017:56).
132 Bodle *et al*. (2020:11–21, 126).
133 Preston (2018).