



Land, Environment and Development Project
LEGAL ASSISTANCE CENTRE

October 2024

GREEN HYDROGEN HYPE

INDUSTRIAL ACTIVITIES IN
NAMIBIA'S NATIONAL PARKS PART 1
**Climate Change, Risk of Biodiversity Loss,
Pollution and the Welfare of People:
A Threat to Human Rights**

By **Corinna van Wyk**

First published by the Rosa Luxemburg Stiftung



SUMMARY

Namibia has given approval for the production of green hydrogen in ecologically sensitive national parks along the Atlantic Ocean coastline. The largest of the approved projects is located in the Tsau ||Khaeb National Park. The United Nations High Commissioner for Human Rights has described the triple planetary crisis of climate change, biodiversity loss and pollution as the biggest threat to human rights globally. Giving undue preference to issues surrounding the energy needs in the context of climate change while ignoring issues surrounding potential biodiversity loss or pollution ignores the fact that a just transition to environmentally sustainable economies and societies for all should not be at the risk of compromising already fragile ecosystems that contribute to climate regulation, nutrient cycling and carbon sequestration. Since limited scientific data is available on whether hydrogen is an effective decarbonisation strategy, this part of the article explores, from a human rights perspective, the issues surrounding climate change, biodiversity loss and pollution, and whether industrial activities should be permitted in protected areas. Part 2 examines the non-compliance with, and shortcomings in, the existing legal framework, as well as the lack of regulatory oversight and the legal validity of the Green Hydrogen Council. Part 3 examines the seemingly neo-colonial approach that has emerged in the wake of the hydrogen hype in Namibia.

1. INTRODUCTION

Namibia is not a highly industrialised country. Instead, what Namibia offers the world is a vast, mostly pristine landscape of indescribable beauty, with numerous endemic life forms and other features that are unique to this country. The entire Namibian coastline is a proclaimed protected area, consisting of a network of national parks. This legal protection is essential for conserving the biodiversity and natural ecosystems, and for protecting habitats and species that are of national importance and global significance. The Dorob National Park, Namib-Naukluft National Park and Skeleton Coast National Park together comprise 107 540 km² of protected shoreline. The Tsau ||Khaeb National Park (TKNP) is a remote, rugged expanse which, since 1908 until now, was shielded from extensive development and exploitation, so its landscapes were left alone to evolve and thrive in a state closely resembling their ancient, untouched form. Its isolation and the limited human impact contributed to preserving the park's unique natural ecosystems, and these ecosystems in turn have contributed immensely to Namibia's carbon-sink climate, by providing a range of natural ecosystem services including climate regulation, nutrient cycling and carbon sequestration. Any human interference poses a threat to this pristine landscape and its ecology.

The United Nations High Commissioner for Human Rights has described the triple planetary crisis of climate change, biodiversity loss and pollution as the biggest threat to human rights globally. On 28 July 2022, amid growing awareness of these challenges, the United Nations General Assembly reaffirmed the importance of the human right to a clean, healthy and sustainable environment.¹ The Paris Agreement, a legally binding international treaty on climate change, was adopted by 196

¹ Resolution 76/300. The right to a healthy environment is not new; it is a right in indigenous legal systems, articulated in the 1972 Stockholm Declaration. More than 150 United Nations Member States legally recognise the right to a safe, clean, healthy and sustainable environment.

Parties at the UN Climate Change Conference² in Paris, France, on 12 December 2015. It entered into force on 4 November 2016.

*Its overarching goal is to “hold the increase in the global average temperature to well below 2°C above pre-industrial levels” and pursue efforts “to limit the temperature increase to 1.5°C above pre-industrial levels.” ... To limit global warming to 1.5°C, greenhouse gas emissions must peak before 2025 at the latest and decline 43% by 2030.*³

Considering the urgent need to decarbonise global energy systems, governments and industry are moving ahead with efforts to increase deployment of hydrogen technologies, infrastructure and applications at an unprecedented pace.⁴ Green hydrogen as a synthetic fuel potentially represents a promising pathway towards a more sustainable and low-carbon energy future, offering solutions to address climate change, promote energy security, and drive economic development for the world. Its importance lies in its potential to transform the energy landscape and contribute to a cleaner, greener and more sustainable world.

Namibia, due to being endowed with abundant renewable energy sources in the form of sunshine and high wind speeds, has taken the lead on the African continent as far as the production of green hydrogen is concerned. Having established the Namibia Green Hydrogen Council, the Office of the President gave approval for the production of hydrogen and ammonia within the coastal protected areas and other areas along the coast, for exportation.⁵ This is so even though the available scientific data has not yet confirmed that hydrogen is an effective decarbonisation strategy.⁶

At the time of writing this article, there are seven approved hydrogen projects: Daures Green Hydrogen Village; Cleanergy Solutions; HyRail; Hydrogene De France; Hylron; Zhero;⁷ and Hyphen. The latter project, Hyphen Hydrogen Energy, is set to be the largest sub-Saharan project of its kind. It is a joint venture between Nicolas Holdings Limited (a company based in the United Kingdom) and Enertrag South Africa (a subsidiary of Enertrag Germany).⁸ It is a particularly controversial project because of its location in a biodiversity hotspot, namely the TKNP. National parks in Namibia are important tourist attractions, hence commercial activities permitted in the national parks serve the tourism sector predominantly. In recent years Namibia has also permitted mining activities in certain national parks. The addition of industrial activities such as mass-production of hydrogen by multiple production plants in these fragile areas, has the effect that increasingly the ecosystems, which are also vulnerable to the effects of climate change, such as more frequent and longer-lasting droughts, may well result in biodiversity loss.

² The 21st Conference of the Parties (COP 21).

³ See <https://unfccc.int/process-and-meetings/the-paris-agreement>.

⁴ See Illisa B. Ocko and Steven P. Hamburg, “Climate consequences of hydrogen emissions”, in *Atmospheric Chemistry and Physics*, Vol. 22, Issue 14 (<https://doi.org/10.5194/acp-22-9349-2022>).

⁵ “Cleanergy Solutions Namibia kicks off construction works ...” (<https://cmb.tech/news/cleanergy-solutions-namibia-kicks-off-construction-works-for-africas-first-public-refuelling-station-with-onsite-green-hydrogen-production>).

⁶ Hydrogen is also an indirect greenhouse gas with a short-lived warming impact, spanning a few decades only. Hydrogen is a small molecule which may easily leak into the atmosphere. The total amount of emissions (e.g. leakage, venting and purging) from existing hydrogen systems is unknown. Therefore, the effectiveness of hydrogen as a decarbonisation strategy, especially over time scales of several decades, remains unclear. See Illisa B. Ocko and Steven P. Hamburg, op. cit.

⁷ “N\$380m splashed on green hydrogen project”, *The Namibian* newspaper, 15 July 2024.

⁸ “Germany and Namibia agree to bolster hydrogen partnership”, *Offshore Energy*, 21 March 2024.

2. SETTING THE SCENE

The TKNP is a captivating wilderness expanse that showcases the raw beauty of Namibia. Formerly known as the Sperrgebiet National Park, this vast protected area encompasses a stunning array of diverse ecosystems, from expansive sand dunes and rocky desert plains to ancient mountains and shimmering coastlines along the Atlantic Ocean. The park's isolation and limited human impact have contributed to the preservation of its unique ecosystems and the survival of its indigenous wildlife, making TKNP a precious sanctuary where visitors can witness the raw beauty of nature in its purest and most undisturbed state.

The Succulent Karoo biome is an internationally recognised biodiversity hotspot, and the world's only arid hotspot. The 116 000 km² biome spans from Lüderitz through the Richtersveld, Namaqualand, Hantam, Tanqua and Roggeveld, and eastwards into the Little Karoo. The biome is home to 6 356 plant species, 40% of which are endemic, and 936 (17%) of which are listed in the *Red Data Book*. In addition to its floral diversity, the following have been recorded thus far: 27 amphibian species, 29% of which are endemic; 121 reptile species, 20% of which are endemic; 68 mammal species, 9% of which are endemic; and 431 bird species.⁹ Biodiversity hotspots are, by definition, in a conservation crisis. To be classified as a biodiversity hotspot, a region must have lost at least 70% of its original natural vegetation, usually due to human activity.

Dorob National Park is located along the Namibian coastline, near the central part of the country. The park alone covers an area of 7 800 km. It was the first national park in the country to establish zones for separate purposes that are reflective of the needs of the continent as a whole.¹⁰ The Dorob extends 1 600 km along the coastline, creating a protected area from the Kuiseb Delta northwards to the Ugab River. Ironically, the desert terrain is home to the most extensive network of ephemeral rivers in the country, supplying fresh water to an otherwise arid region.¹¹

The meeting point between Namibia's hot desert sands and the cold Benguela ocean current harbours rich biodiversity and some of the world's most abundant marine life concentrations. The Benguela Current Large Marine Ecosystem (BCLME) stretches northwards from South Africa, along Namibia's entire coastline, into Angola. The BCLME is one of the richest ecosystems on Earth, with ecosystem goods and services worth an estimated US\$54.3 billion annually. But this valuable ecosystem is vulnerable to destruction from human activities including land-based pollution that destroys habitats.

The northern part of the Namibian coastline is the Kunene coast, the whole of which constitutes the Skeleton Coast Park.¹² This park is characterised by extreme aridity, frequent fog and southerly winds. Offshore, although the cold Benguela Current and its associated upwelling system makes for cold conditions on the coast, the circular upwards movements draw nutrient-rich water from the depths of the ocean up to the sunlit surface, and these upwelling cells are key to the high productivity of Namibia's coastal waters. Many of the plants and animals found along the Kunene

⁹ UNESCO World Heritage Centre, "Succulent Karoo Protected Areas" (<https://whc.unesco.org/en/tentativelists/6097>).

¹⁰ Global Alliance of National Parks, "Dorob National Park" (<https://national-parks.org/namibia/dorob>).

¹¹ The Walvis Bay Lagoon is recognised as a Ramsar Site, reflecting its wetland value to the diverse birds and wildlife species in the Dorob National Park.

¹² Ministry of Environment and Tourism, *The coast of Kunene and the Skeleton Coast Park: Namibia's Coast*, 2012 (<https://jaroconsultancy.com/wp-content/uploads/2024/07/Kunene-booklet.pdf>).

coast are unusual, some are rare and some are endangered. Some species are endemic to the area, and this is also a place where migratory birds congregate. Therefore, the Kunene Coast is an important refuge for all species concerned. However, the equilibrium of the marine resources there is already being affected by overexploitation of these resources.¹³ Despite the Government's many efforts, the system is still being compromised¹⁴ to the extent that certain species are no longer found in the Namibian waters. This contributes not only to many social and economic issues, but also to climatic/ environmental issues such as the drought-related difficulties increasingly experienced in Namibia.

3. THE TRIPLE PLANETARY CRISIS AND HUMAN RIGHTS: WHAT ARE THE ISSUES AND THEIR IMPACTS ON THE WELFARE OF INDIGENOUS PEOPLE?¹⁵

Scientific consensus suggests that multiple planetary boundaries critical for human wellbeing and survival have already been crossed, thus it is not surprising that environmental protection is now deemed to be a human rights issue. The UN General Assembly has noted that sustainable development and environmental protection contribute to the enjoyment of human rights to life, the highest attainable standard of physical and mental health, an adequate standard of living, adequate food, housing, safe drinking water and sanitation, and participation in cultural life, for present and future generations.

The right to a clean, healthy, sustainable environment as a human right reflects agreement on the links between sustainable development, the protection of the environment, including ecosystems, and promotion of human wellbeing and full enjoyment of all human rights for present and future generations. Several environmental and sustainable development frameworks and agreements – e.g. the 2030 Agenda, the Paris Agreement, the Just Transition Guidelines, the Glasgow Climate Pact, the Kunming Declaration (post-2020 global biodiversity framework) and the Global Framework on Chemicals (post-2020 chemicals and waste framework) – recognise connections between the environment and human rights, and detail how nature and biodiversity loss, climate change and pollution undermine all countries' ability to achieve sustainable, people-centred development and human wellbeing.

Currently there is no universally agreed definition of the right to a healthy environment, because the language and content are still emerging. However, this right is generally understood to constitute a combination of substantive and procedural rights guided by key human rights principles, including non-discrimination, participation, accountability, non-regression, precaution and prevention.

¹³ For detailed information, see:

- » Grant Rau, "Marine Phosphate Mining in Namibia: The Truth of the Matter", PowerPoint, 2016 (https://chamberofmines.org.na/wp-content/uploads/2021/02/LLNP-Marine-Phosphate-Mining-Scientific-Society-Nov16_No-header.pdf);
- » Blessing Chiripanhura and Mogos Teweldemedhin, "An Analysis of the Fishing Industry in Namibia: The Structure, Performance, Challenges, and Prospects for Growth and Diversification", Working Paper, 2016 (<https://www.ifpri.org/publication/analysis-fishing-industry-namibia-structure-performance-challenges-and-prospects-growth>);
- » Marine Stewardship Council, "A sustainable and bright future for Namibian hake", 2020 (<https://www.msc.org/media-centre/news-opinion/news/2020/11/17/a-sustainable-and-bright-future-for-namibian-hake>); and
- » Namibian Chamber of Environment, "Why the Namibian moratorium on sardine fishing must continue", 2021 (<https://conservationnamibia.com/blog/b2021-sardine-fishing.php>).

¹⁴ Johannes A. Iitembu et al., "The hits and misses of Namibia's attempt to implement the Ecosystem Approach to Fisheries (EAF) Management", 2021 (<https://www.tandfonline.com/doi/full/10.1080/20964129.2021.1920340>).

¹⁵ For a more detailed discussion, see UN Environment Management Group (EMG), *Upholding the Human Right to a Healthy Environment to Address the Triple Planetary Crisis: Common Narrative*, November 2022 (https://unemg.org/wp-content/uploads/2022/12/UN_CommonNarrative_Upholding-Human-Right-to-Healthy-Environment_2022.28.11.pdf).

Substantive elements include: clean air; safe and sufficient water; healthy and sustainably produced food; non-toxic environments where people can live, work, study and play; healthy ecosystems and biodiversity; and a safe and stable climate. Procedural elements include: access to environmental information; public participation in environmental decision-making; and access to justice.

In places affected by environmental harm, natural resources are often unequally distributed, further undermining the rights of people already in vulnerable situations. Indigenous peoples protect, nurture and defend an outsized proportion of the world's remaining biodiversity in their collective lands and territories. Yet, indigenous peoples are often excluded from environmental decision-making, including decision-making on climate change mitigation and adaptation actions. Many have been stripped of their land rights over centuries. Some face increasing violence in defending their communities against illegal logging, mining and agricultural incursion. Promoting indigenous peoples' rights includes building on the *United Nations Declaration on the Rights of Indigenous Peoples* and relevant conventions such as the *Indigenous and Tribal Peoples Convention*.

In Namibia, in addition to the national parks' ecological value, these ecosystems are of significant cultural and social value for indigenous peoples. The Namib Desert, for example, is home to a number of indigenous communities who have developed unique cultural practices and knowledge systems that are closely tied to the desert environment. Shark Island and Angra Point, identified as locations for port expansion and development in order to service the hydrogen product exports, have their own ecological significance but are also of great historical and cultural importance. Shark Island, which has been declared a National Heritage place,¹⁶ serves as a stark reminder to Namibia's Nama people of the genocide of the Nama committed by the Germans during the colonial period.

4. SHOULD INDUSTRIAL ACTIVITIES BE PERMITTED IN PROTECTED AREAS?

Multilateral environmental agreements such as the *United Nations Framework Convention on Climate Change*, the *Convention on Biological Diversity* and the *United Nations Convention to Combat Desertification* include the principle of common but differentiated responsibilities, which recognises that developed countries are primarily responsible for environmental crises and should therefore take the lead in stopping them. This includes providing financial and technological assistance to support environmental protection and effective adaptation to climate change and environmental harms in developing countries. This can in no way be interpreted to mean that developing countries should set up industrial plants in their protected areas. Far from it. The European Court of Human Rights has interpreted the right to life, guaranteed by Article 2 of the *European Convention on Human Rights*, to include the right to be protected against risk resulting from hazardous industrial activities.¹⁷ Although the Convention protects the rights of people in Europe, the right to life is a constitutionally protected right in Namibia.

Green hydrogen is produced through a process called electrolysis, which involves splitting water (H₂O) into Hydrogen (H₂) and Oxygen (O₂) using electricity. When this electricity comes from

¹⁶ On 15 February 2019, Shark Island was entered in the National Heritage Register as a heritage place in terms of section 36(1)(c) of the National Heritage Act, 2004.

¹⁷ European Court of Human Rights, *Öneryildiz v. Turkey*, Application no. 48939/99, judgement of 30 November 2004.

renewable sources such as solar, wind or hydro power, the hydrogen produced is considered 'green' because it is generated without generating greenhouse gas emissions. It does not take into consideration whether the water used to split the molecules is taken from a non-renewable source.

The term "green" should not be misconstrued as meaning 'no danger posed to the environment'. The Namibian Chamber of Environment position paper on the Hyphen project in the TKNP, for example, asserts that this project is in fact "red" due to the irreversible damage it will do to this sensitive desert ecosystem.¹⁸

5. IMPACTS OF DESALINATION ON MARINE ENVIRONMENTS

Aside from these projects being located in ecologically sensitive areas, Namibia does not have an abundant source of clean water for producing hydrogen. In fact, in May 2024 Namibia's President, Nangolo Mbumba, declared a state of emergency due to the current drought,¹⁹ given that the basic requirement of reasonable access to clean water for drinking and sanitation cannot be met for the majority of local people.

The only abundant water source is the ocean, and Namibia will need enormous amounts of ocean water to be desalinated before it can be used for producing hydrogen. The desalination plant to be constructed in the TKNP area will be the third such plant in Namibia. The brine discharged from these plants is highly toxic and could pollute the marine ecosystem. Currently there does not seem to be consensus on the impact of desalination plants on marine environments, land, groundwater and air quality.²⁰ Nonetheless, the extraction of enormous amounts of ocean water for channelling towards the energy needs of foreign markets as opposed to more pressing domestic needs comes with its own challenges, not only to the environment.²¹

Also, when an impact assessment for a specific activity, such as desalination of ocean water, determines 'low' impacts associated with the environment of a specific location, it generally does not consider activities in close proximity to the assessed activity, and does not compute holistically the effects of all activities in close proximity that could escalate the impact on the environment. The failure to determine the consolidated effects of a number of activities in one place amounts to *ignoring* the holistic effect on the environment. It remains unclear at this stage what impact pollution will have on the natural fresh underwater sources in the national parks.

¹⁸ *When Green Hydrogen Turns Red: Threatening a global biodiversity hotspot* (<https://n-c-e.org/wp-content/uploads/Green-hydrogen-Tsau-Khaeb-National-Park-NCE-Position-Paper.pdf>).

¹⁹ Proclamation No. 18, *Government Gazette No. 8370*, 22 May 2024.

²⁰ Ihsanullah Ihsanullah, Muataz A. Atieh, Muhammad Sajid and Mazen K. Nazal, "Desalination and environment: A critical analysis of impacts, mitigation strategies, and greener desalination technologies", in *Science of the Total Environment*, Vol. 780, 1 August 2021.

²¹ For detailed information, see:

- » World Economic Forum, "The desalination process gives us freshwater – at a huge environmental cost" (<https://www.weforum.org/agenda/2022/12/desalination-process-freshwater-negative-environmental-cost/>);
- » EcoMENA, "Environmental Impacts of Seawater Desalination" (<https://www.ecomena.org/environmental-impacts-of-seawater-desalination>);
- » UNCTAD, "Climate change impacts on seaports: A growing threat to sustainable trade and development" (<https://unctad.org/news/climate-change-impacts-seaports-growing-threat-sustainable-trade-and-development>); and
- » MIT Climate Portal, "Fertilizer and Climate Change" (<https://climate.mit.edu/explainers/fertilizer-and-climate-change>).

The west coast is Namibia's only coastline. In 2017, prior to the Fishrot scandal,²² coastal commercial activities sustained approximately 17 000 jobs directly, and were considered to be the second most important source of forex earnings in 2012-2016, with an annual income of N\$10 billion. Although the hydrogen projects offer job opportunities, the associated risks are displacement of local people, environmentally unsound development of infrastructure for heavy vehicles, pollution of the land and sea, damage to pristine environments and ecosystems,²³ migration of labourers into the pristine areas, and development of ports that pose greater threats for the country.²⁴

The coast is also a major tourist attraction. Tourism is invaluable to Namibia's economy, accounting for almost 20% of the GDP annually.²⁵ Protected areas are the heart of Namibia's tourism industry. Sustainable tourism supports economic development and local communities while ensuring the long-term preservation of these natural treasures.²⁶ The Minister of Environment, Forestry and Tourism, Hon. Pohamba Shifeta, stated the following in 2020:

*Namibia's parks are invaluable for tourism with more than 70% of tourism activities attributed to protected areas. ... The importance of protected areas, not only for tourism and revenue creation, but also for biodiversity, cannot be stressed enough. It is thus imperative that protected areas are managed effectively and efficiently.*²⁷

6. CONCLUSION

Namibia's coast is a unique region imbued with a range of ecosystems of significant ecological, economic, cultural and social value, which will be compromised by the mass-industrialisation projects aimed at producing synthetic hydrogen fuel and ammonium for export. It is evident from the preceding discussions that such a policy decision may have been taken with total disregard of the current issues surrounding the triple planetary crisis. As will become apparent in Part 2 of this article, allowing foreign companies from developed countries to operate without a legal framework in place that complies with international standards creates an environment where foreign companies control the narrative of Namibia's natural resource management with impunity – despite the fact that in their own countries they are compelled by their own governments to comply with international standards.

²² "Corruption in Namibia's fishing industry unveiled", *Al Jazeera* (<https://www.aljazeera.com/news/2019/12/1/exclusive-corruption-in-namibias-fishing-industry-unveiled>); "Human suffering brought about by Fishrot revealed", *The Namibian*, 7 March 2024 (<https://www.namibian.com.na/human-suffering-brought-about-by-fishrot-revealed>): the Fishrot criminal case is still pending, with the suspects kept in custody, but the people who lost their livelihoods are still unemployed.

²³ For a more detailed discussion, see Namibian Chamber of Environment, op. cit. (footnote 18).

²⁴ "Namport's N\$26.2bn expansion plans revealed", *The Brief*, 24 August 2023 (<https://thebrief.com.na/2023/08/namport-s-n-26-2-bn-expansion-plans-revealed/>).

²⁵ Minister of Environment, Forestry and Tourism, Hon. Pohamba Shifeta, in the "Foreword" of the Ministry's *Management Plan for Tsau //Khaeb (Sperrgebiet) National Park 2020/2021-2029/2030* ([https://www.meft.gov.na/files/downloads/bfd_Management%20Plan%202%20-%20Tsau%20Khaeb%20\(Sperrgebiet\)%20National%20Park.pdf](https://www.meft.gov.na/files/downloads/bfd_Management%20Plan%202%20-%20Tsau%20Khaeb%20(Sperrgebiet)%20National%20Park.pdf)).

²⁶ Namibia: Living in balance with Nature | GEF (thegef.org)

²⁷ "Foreword", *Management Plan for Tsau //Khaeb (Sperrgebiet) National Park 2020/2021-2029/2030*, op. cit.

Project funding: **Rosa Luxemburg Stiftung**

Project supervisor: **Corinna van Wyk**

Printing: **John Meinert Printing (Pty) Ltd**

A PDF of this article is posted on the LAC website.

Hard copies are available at the LAC office.



LEGAL ASSISTANCE CENTRE

Land, Environment and Development (LEAD) Project

4 Marien Ngouabi St, Windhoek • P.O. Box 604, Windhoek, Namibia

Telephone: (+264) (0)61-223356 • Fax: (+264) (0)61-234953

Email: info@lac.org.na • Website: www.lac.org.na