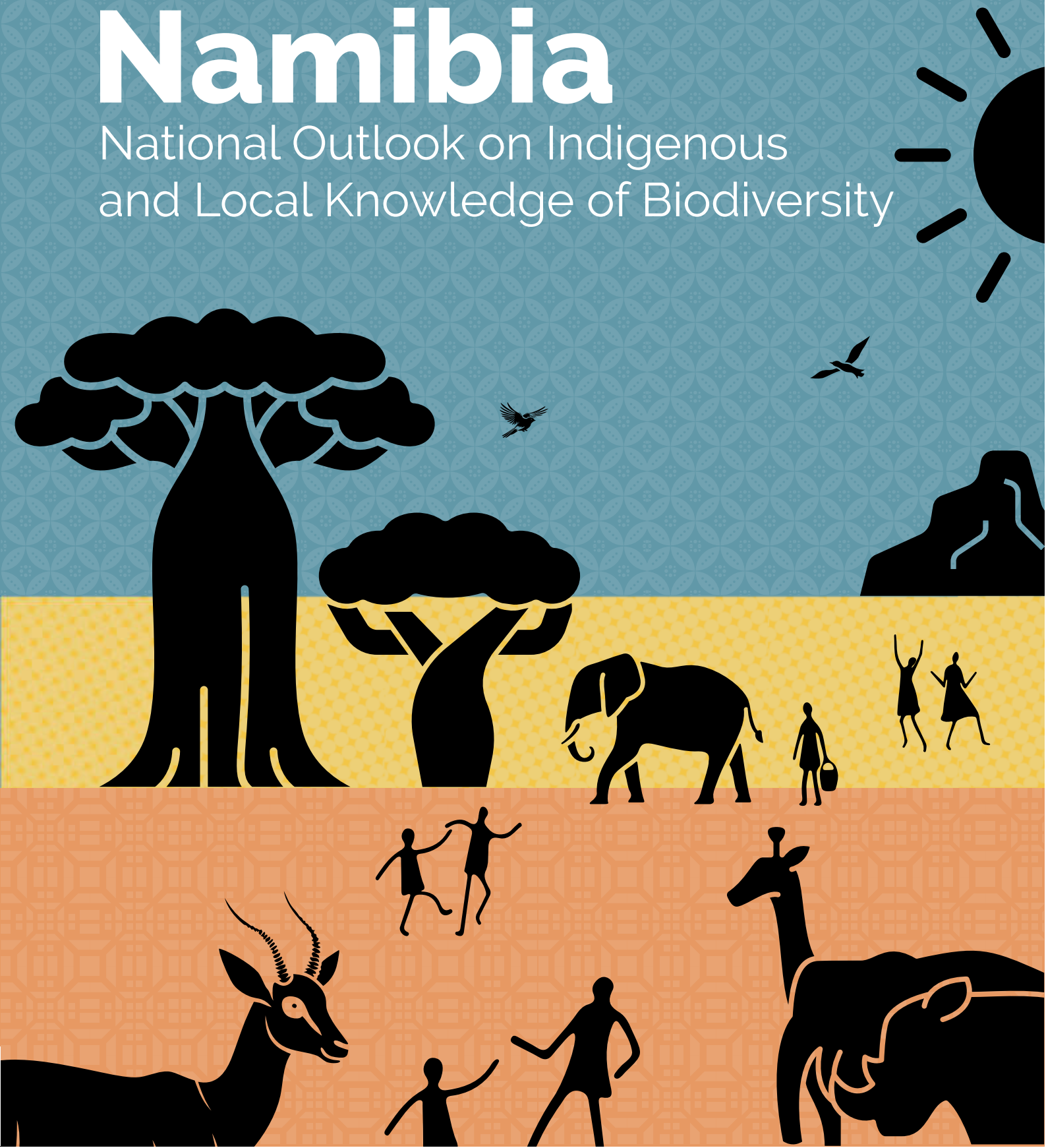
Namibia

National Outlook on Indigenous and Local Knowledge of Biodiversity



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Foreword

Namibia's natural heritage is inextricably linked to the wisdom of its people. For generations, our communities have served as the primary stewards of our diverse landscapes, developing sophisticated systems of knowledge that have allowed them to thrive in some of the most challenging environments on earth. Indigenous and local knowledge (ILK) is far more than a relic of the past. It is a living, sophisticated system of survival and stewardship. This knowledge informs every facet of daily life, from the precise timing of planting and the selective harvesting of veld products to the ancient art of tracking and sustainable hunting and use of wild species. It provides the blueprints for locating hidden water sources in arid landscapes and constructing resilient shelters. Beyond physical survival, this wisdom encompasses deep healing and medicinal practices, as well as the cultural expertise required to produce traditional cosmetics, textiles, and clothing. In every sense, this knowledge is the foundation of our people's existence and their unique identity.

As a nation, we have long taken pride in our progressive conservation models. Our Constitution and the world-renowned Community-Based Natural Resource Management (CBNRM) framework provide a solid foundation for community participation in natural resource management. The Access and Benefit Sharing (ABS) law establishes a framework for the equitable sharing of benefits from the utilization of biological resources and associated traditional knowledge. By prioritizing value addition, we seek to transform Indigenous and local knowledge into innovative products that generate sustainable socio-economic returns. We believe that the benefits arising from the utilization of biological resources and associated traditional knowledge serve as a vital incentive for biodiversity conservation and the preservation of traditional wisdom.

This "Namibia National Outlook on Indigenous and Local Knowledge of Biodiversity" marks a definitive milestone in our journey to elevate, protect, and integrate this invaluable wisdom into our national development agenda. The findings in this report serve as both a celebration of our vibrant Indigenous and local knowledge and a call to action. We are at a critical crossroads where a number of facts highlighted in this report threaten the continuity of this knowledge. This document provides a clear roadmap for the future.

By mainstreaming ILK into our National Biodiversity Strategy and Action Plan (NBSAP III) and our climate adaptation strategies, among others, we ensure that Namibia's conservation efforts are not only scientifically sound but multi-evidence based and culturally grounded. We aim to move beyond "mainstreaming" in theory to "empowering" in practice, supporting ILK-based enterprises, enforcing fair benefit-sharing mechanisms, and ensuring that our education system honors the ancestral knowledge of our people.

I wish to express my gratitude to the contributors, researchers, and, most importantly, the traditional authorities and local communities who shared their insights for this assessment. It is our collective responsibility to ensure that this knowledge is not viewed merely as a relic of the past but as a living, breathing tool for our future resilience.

Mr. Sikongo Haihambo

Executive Director
Ministry of Environment, Forestry, and Tourism
Republic of Namibia

Foreword

Namibia's vast deserts, savannas, and coastal ecosystems have long been nurtured through the sophisticated knowledge systems of its Indigenous Peoples and local communities. Their ecological understanding - honed through generations of observation, practice and adaptation - continues to be indispensable for biodiversity conservation in the country.

UNESCO is honoured to present the *Namibia National Outlook on Indigenous and Local Knowledge of Biodiversity*, developed in close collaboration with the Ministry of Environment, Forestry and Tourism (MEFT) and compiled by the Namibia Nature Foundation (NNF). This publication forms part of a global pilot initiative under UNESCO's Local and Indigenous Knowledge Systems (LINKS) Programme, contributing directly to the implementation of the Kunming–Montreal Global Biodiversity Framework. It provides Namibia's first comprehensive baseline assessment of the state of Indigenous and local knowledge (ILK) documentation, the conditions under which knowledge is produced and transmitted, and the degree to which ILK is mainstreamed into national biodiversity strategies and policy frameworks.

The National ILK Outlook highlights both the richness of Namibia's ILK systems and the urgent need to strengthen their protection. It also demonstrates Namibia's leadership in developing innovative and communitydriven approaches for knowledge documentation and transmission, including new digital platforms, biocultural community initiatives, and emerging national policy frameworks.

As Namibia implements its National Biodiversity Strategy and Action Plan and advances on its Indigenous Knowledge Systems Policy, this National ILK Outlook provides timely guidance for enhancing the role of ILK in planning, research, and conservation practice. It draws attention to opportunities for deepening collaboration between communities and national institutions, for mainstreaming ILK into education and environmental governance, and for supporting young people - future custodians of Namibia's cultural and ecological heritage.

UNESCO warmly acknowledges the dedication of Namibia's Indigenous Peoples and local communities, whose wisdom and stewardship continue to enrich the country's biocultural diversity. We commend the collective efforts of MEFT, NNF, community representatives, and partners who contributed to this publication. Their work reflects Namibia's longstanding commitment to inclusive conservation and to recognising ILK as an invaluable asset to its Vision 2030 and sustainable development.

UNESCO looks forward to continued collaboration with Namibia as it strengthens knowledge partnerships, fosters intergenerational transmission, and promotes ILK as a cornerstone of biodiversity management and climate resilience.

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Special gratitude is extended to the Namibia Nature Foundation for leading the development of this publication, and to the UNESCO team for providing technical and backstopping support during the implementation of the project. The team further extends their appreciation to the Ministry of Environment, Forestry and Tourism, particularly, Ms. Betty Schroder Kauna, Ms. Sandra Williams, and Mr. Henry Michael Ndengejeho for the policy guidance and for reviewing the report.

Special thanks particularly to Prof. Heike Winschiers-Theophilus (UNESCO Chair for Digital Technology Design with Indigenous Peoples) and her team at the Namibia University of Science and Technology (NUST) for their support in stakeholder identification and the literature review process. Acknowledgement is also due to Dr. Michael Shirungu of the University of Namibia, as well as to Ms. Yanna Smith (NUST), for their instrumental support in the literature review process.

The project team is grateful to Ms. Amelia Heyns at Natural Justice and to Mr. Alphons Koruhama, Coordinator of the Ovaherero of the Kaokoland Biocultural Community Protocol, for sharing valuable insights and experiences that informed the analysis.

The team further acknowledges Mr Brian Mudumbi of the National Commission on Research, Science and Technology (NCRST) for his role in presenting the National Indigenous Knowledge Systems Policy during stakeholder consultations as well as providing information on NCRST's mandate.

The preparation of this Outlook followed an inclusive and participatory approach. In this regard, the project team extends special gratitude and appreciation to Indigenous Peoples and local communities that participated in the community dialogue workshop in September 2025, many of whom travelled from across Namibia. Their knowledge, lived experiences, and insights were instrumental in understanding documentation processes and strengthening policy mainstreaming of Indigenous and local knowledge. In addition, special appreciation is extended to all the participants that attended and contributed to the multi-stakeholder policy dialogue workshop held in November 2025, whose constructive engagement and policy-relevant inputs further enriched the outcomes of this Outlook.

Executive Summary

This National Outlook on Indigenous and Local Knowledge (ILK) of Biodiversity in Namibia (National ILK Outlook), commissioned by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the Ministry of Environment, Forestry and Tourism (MEFT) and implemented by the Namibia Nature Foundation (NNF), provides a baseline assessment of the status and documentation of ILK, and its level of mainstreaming in biodiversity policies and plans in Namibia. It is part of a global pilot initiative under UNESCO's Local and Indigenous Knowledge Systems (LINKS) Programme, contributing to the implementation of the Kunming–Montreal Global Biodiversity Framework (KMGBF).

Indigenous Peoples and local communities in Namibia are central to biodiversity stewardship. Their knowledge, transmitted orally and through practice, underpins conservation and sustainable management of land, water, and natural resources across diverse ecosystems. However, their ILK remains under-documented, often fragmented, and insufficiently mainstreamed into national biodiversity strategies and policy frameworks.

Approach and Methodology

The National ILK Outlook adopted a mixed method approach that included a national literature review, participatory consultations and two dialogue workshops. The literature review considered published and grey literature from the last 50 years across all relevant sectors and ecosystems, but also other non-academic forms of documentation, such as those held in living museums, festivals, exhibitions, films, art, as well as novel approaches like virtual reality products.

The first ILK dialogue workshop brought together community representatives from all Namibian regions, to map existing ILK, identified documentation gaps, and brainstormed culturally appropriate, community-led approaches for recording and protecting ILK. The second ILK-policy dialogue workshop was held with stakeholders from policy, science and civil society to discuss challenges, opportunities and entry points for ILK inclusion into policies, including Namibia's National Biodiversity Strategy and Action Plan (NBSAP III).

Key Findings

- **Uneven documentation:** ILK documentation is strongest in terrestrial ecosystems, particularly ethnobotanical knowledge, while marine, freshwater, and climate-related knowledge remain scarcely recorded.

- **Vibrant but oral knowledge systems:** Across all regions, biodiversity knowledge is mostly transmitted orally through songs, rituals, and practices, with limited formal records and with external authorship predominating.
- **Policy mainstreaming:** While Namibia's Constitution and conservation laws recognize cultural heritage and community participation, explicit inclusion of ILK in biodiversity policy remains limited. Opportunities to resolve this exist through the NBSAP III and emerging National Indigenous Knowledge Systems (NIKS) Policy.
- **Community-based conservation:** Namibia's Community-Based Natural Resource Management (CBNRM) framework provides a foundation for ILK integration but is often driven by external conservation objectives over local epistemologies.
- **Risks and challenges:** ILK faces threats from urbanisation, land dispossession, language loss, extractive commercialization, lack of documentation, climate change, inadequate intellectual property protection and erosion of transmission pathways.
- **Positive developments:** New initiatives such as Biocultural Community Protocols (BCPs), digital repositories, and virtual reality documentation showcase innovative, community-led ILK preservation and advocacy models.

Documentation gaps identified

Major documentation gaps exist in marine and coastal systems, freshwater fisheries, disaster risk reduction, and ILK related to climate change adaptation. Methodologically, most studies remain externally driven, with limited community participation, co-design or co-creation. Community feedback and validation after study periods are also rare. Although non-academic forms of documentation provide opportunities to capture wider ILK practices and processes, these efforts are sporadic and insufficiently comprehensive to reflect the full breadth and depth of ILK systems.

Policy mainstreaming and implementation challenges

Namibia has made progress in mainstreaming ILK, with the Access and Benefit-Sharing (ABS) Act, the draft NIKS Policy, and the CBNRM programme providing foundations for community participation and knowledge protection. However, ILK is still weakly mainstreamed in biodiversity policy and practice. Consultative processes increasingly involve communities but rarely draw on their knowledge systems to shape policy, management, or monitoring. Explicit ILK provisions remain limited, and implementation is hindered by resource and capacity constraints as well as the lack of clear coordination mechanisms.

Recommendations

This National Outlook presents strategic recommendations to enhance the documentation, protection, and policy mainstreaming of ILK of biodiversity across Namibia. Central to this approach is establishing a community-led or co-led national documentation framework anchored in Free, Prior and Informed Consent (FPIC) principles, with ethical protocols ensuring responsible documentation in compliance with national access and benefit-sharing legislation.

Strengthening institutional governance requires appointing ILK focal points across relevant Offices, Ministries, and Agencies (OMAs) to improve coordination, alongside fast-tracking the NIKS Policy implementation. The recommendations include securing access to cultural sites and resource, integrating ILK into land-use and conservation planning, and harmonizing related laws.

Furthermore, economic empowerment of Indigenous Peoples and local communities can be advanced through support for ILK-based enterprises and equitable benefit-sharing mechanisms. Ensuring intergenerational transmission requires integrating ILK into formal education systems, supporting mentorship programmes that connect elders with youth, and building local capacity for documentation and storytelling. Enhanced dissemination efforts, including sharing documentation frameworks and findings with Indigenous Peoples and local communities, will raise awareness of ILK's critical value in biodiversity conservation, while a multi-partner financing strategy would ensure long-term sustainability.

Together, these recommendations provide a holistic approach that respects community autonomy, strengthens legal and institutional protections, supports sustainable livelihoods, ensures cultural transmission, and establishes the mechanisms necessary for preserving and promoting Namibia's invaluable ILK systems for biodiversity management.

Contents

List of Abbreviations

ABS	Access and Benefit Sharing
BCP	Biocultural Community Protocol
CBD	Convention on Biological Diversity
CBMIS	Community-Based Monitoring and Information Systems
CBNRM	Community-Based Natural Resource Management
COP	Conference of the Parties
ECCC	Environment and Climate Change Canada
FPIC	Free, Prior and Informed Consent
GIZ	Gesellschaft für Internationale Zusammenarbeit
HWC	Human–Wildlife Conflict
IKS	Indigenous Knowledge Systems
ILK	Indigenous and Local Knowledge
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
KMGBF	Kunming–Montreal Global Biodiversity Framework
LINKS	Local and Indigenous Knowledge Systems
MAFWLR	Ministry of Agriculture, Fisheries, Water and Land Reform
MEIYSAC	Ministry of Education, Information, Youth, Sports, Arts and Culture
MEFT	Ministry of Environment, Forestry and Tourism
MoHSS	Ministry of Health and Social Services
MRC	Multidisciplinary Research Centre
MSP	Marine Spatial Planning
NACSO	Namibia Association of CBNRM Support Organisations
NBSAP	National Biodiversity Strategy and Action Plan
NCRST	National Commission on Research, Science and Technology
NETHA	National Eagle Traditional Healers Association
NIKSC	National Indigenous Knowledge Systems Council
NNF	Namibia Nature Foundation
NPOA-SSF	National Plan of Action for Small-Scale Fisheries
NUST	Namibia University of Science and Technology
OLT	Ocean Literacy Toolkit
SB8J	Subsidiary Body on Article 8(j)
SSF	Small-Scale Fisheries
UN	United Nations
UNAM	University of Namibia
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change

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CHAPTER 1:

Introduction

1.1. Background

The development of a National Outlook on Indigenous and Local knowledge of Biodiversity (National ILK Outlook) is an initiative led by the United Nations Educational, Scientific and Cultural Organisation (UNESCO)'s Local and Indigenous Knowledge Systems (LINKS) Programme and funded by the Kunming Biodiversity Fund. It aims to evaluate the status of documented Indigenous and local knowledge (ILK) systems related to biodiversity and supports its inclusion in national biodiversity strategies and policies. The project aligns with the goals of the Kunming Montreal Global Biodiversity Framework (KMGBF), particularly with Targets 9, 21 and 22. Namibia is one of the three pilot countries, together with Malawi, Trinidad and Tobago. These countries are meant to serve as a model in their regions and inspire and peer guide other countries to conduct similar outlooks (UNESCO, 2025a).

Indigenous Peoples and local communities are increasingly recognized as critical stakeholders in the conservation of biodiversity. Their lands and territories encompass many of the world's biodiversity-hotspots and areas of high biodiversity integrity (Cruz Da Silva et al., 2025).

Picture: Traditional baskets at Mashi Craft Centre (© Marcus Westberg)

A global literature review undertaken by Dawson et al. (2021) suggests that biodiversity conservation is most effective and equitable where Indigenous Peoples and local communities retain governance authority, secure land and resource rights, and where ILK is respected and integrated into management processes. Drawing on 169 studies from multiple regions and ecosystems, it becomes evident that communities tend to generate positive outcomes for both biodiversity and community well-being (Dawson et al., 2021). Indigenous Peoples and local communities are rights-holders and knowledge holders, not merely stakeholders, and they and their knowledge play an essential role in biodiversity conservation worldwide. ILK systems are vital for sustainable development in Africa, offering context specific practices for agriculture, soil and water management, biodiversity conservation, livelihood resilience and more especially, identity. However, ILK systems face severe challenges, including from stigmatization, erosion from modernization, loss of customs, and marginalisation in development planning, and therefore need recognition, integration and support to realise their full value in African development contexts (Inglis, 1993). More so, ILK is mostly orally inherited and sang, danced or practiced, but often not documented.

Although ILK documented in global and national repositories have increased in the last two decades, its spatial coverage is uneven and often risks losing cultural context or community control. This underscores the need for community-led governance and careful management of knowledge access and use (Langton & Rhea, 2005). While ILK offers opportunities to shape a better and sustainable future, challenges remain in accurately documenting it and integrating it into broader national systems such as biodiversity policies and institutional structures.

To address some of these challenges in Namibia, the Namibia Nature Foundation (NNF) was commissioned by UNESCO to undertake the National ILK Outlook to understand the status-quo of documented ILK in Namibia and assess the level of ILK inclusion in biodiversity policies and strategies such as the third National Biodiversity Strategy and Action Plan (NBSAP III). It further sought to explore challenges and opportunities of ILK mainstreaming into these policies as well as convene capacity building sessions to enhance awareness on the importance and value of ILK in biodiversity conservation.

The Namibia National ILK Outlook is situated within key global biodiversity frameworks, notably the Convention on Biological Diversity (CBD), particularly its Article 8(j) on the respect, preservation and maintenance of traditional knowledge, and the KMGBF, which provide strategic targets on the conservation and sustainable use of biodiversity with full participation of Indigenous Peoples and local communities and their ILK.

1.2. Namibian Context

Namibia is home to a diverse range of ethnic groups, including 11 nationally recognised languages and numerous minority languages and dialects. The concept of “local communities” is well-recognised and there are some long-established devolved

management mechanisms of communal lands and natural resources. The concept of "Indigenous Peoples" has more recently been gaining recognition by the State, and while the term "marginalized communities", that includes the six San groups, Ovatwa and Ovatjimba, is used as analogous to Indigenous Peoples, it is primarily an economic classification and may exclude other groups who could meet the United Nations (UN) self-determination criteria for recognizing Indigenous Peoples (for example, the OvaHimba, Nama and possibly Damara). The map below, Figure 1. showcases Traditional Authority (TA) offices and provides general overview of the location of Indigenous and local communities in Namibia (Mendelsohn, 2008). While this map serves as a basis, certain communities, such as the Khwe, are not represented.

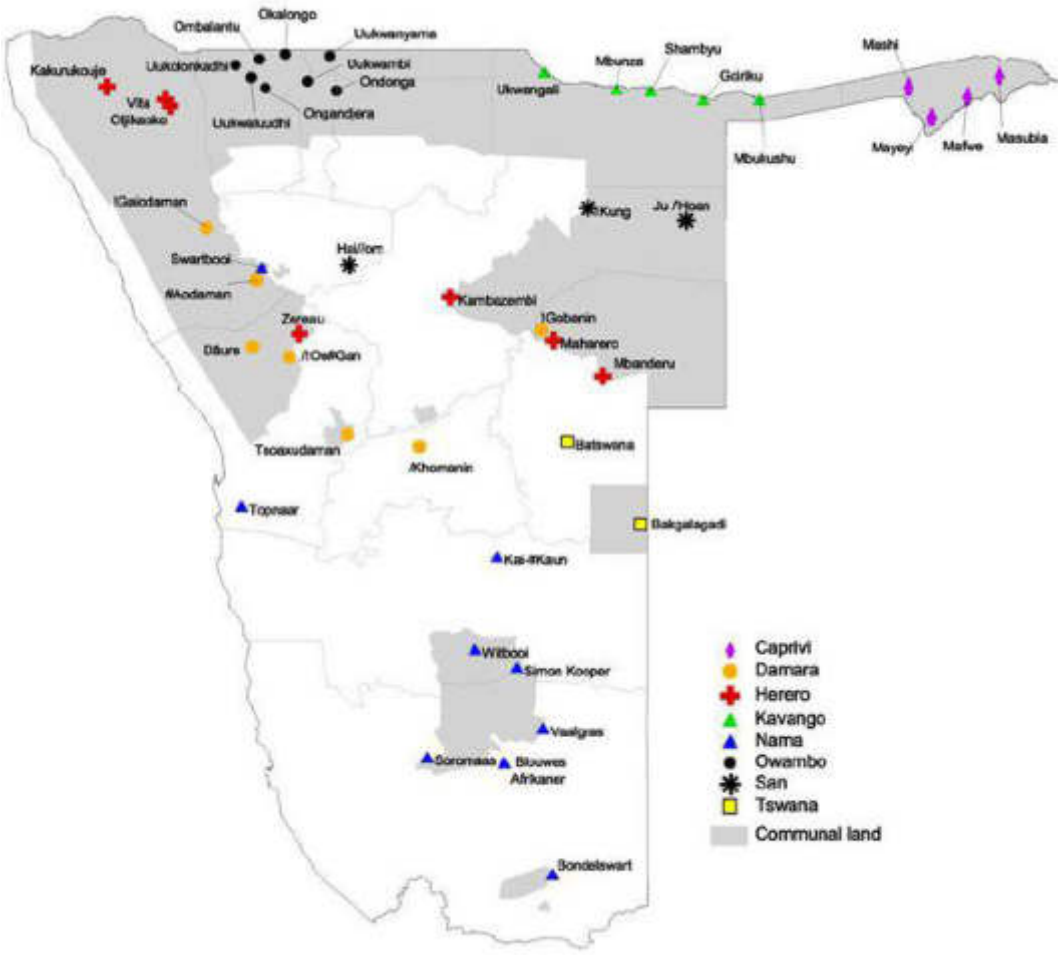


Figure 1. Selected Traditional Authorities in Namibia, as presented in Mendelsohn (2008)

ILK systems form the bedrock of biodiversity conservation and sustainable rural livelihoods in Namibia. With 50% of the population residing in rural areas characterized by arid and semi-arid climates, and around 70% being directly dependent on biodiversity, ILK provides adaptive, practical strategies for managing natural resources amid escalating challenges like droughts and climate change (CBD, n.d.a; Namibia Statistics Agency,

2023). This knowledge, held by diverse ethnic groups, integrates ecological wisdom with cultural practices to ensure food security, health, and environmental stewardship. It also influences, and is to a great extent, dependent on biodiversity.

In livestock management, which underpins over 70% of the rural economy, ILK enables weather forecasting, herd mobility, depredation prevention and rotational grazing among others. Foraging and wild resource utilization are equally vital; the San continue to show considerable reliance on wild foods in their diet and many Namibians continue to consume wild foods on a regular basis, using ILK to identify edible and medicinal plants while practicing sustainable harvesting (Lee, 2018; Nickanor et al., 2024). Devil's claw, a key export for medicinal purposes, and marula fruit - processed into oil for food and cosmetics - generate significant income. This ILK Outlook explores more of these in detail. Regarding biodiversity conservation, ILK and community efforts drive biodiversity conservation, particularly through Community-Based Natural Resource Management (CBNRM).

Picture: Women processing marula juice (© G.Shiimbi)

As a signatory of the CBD, Namibia has to date developed and implemented two NBSAPs. This ILK Outlook was fast-tracked in order to align with the development of Namibia's NBSAP III. This will ensureexemplary consideration of ILK in developing strategies for the conservation and sustainable use of biodiversity, and institutionalizing ILK into biodiversity related institutions to enhance biodiversity governance (Section 4.3 for more details).

Picture: Traditional fishing on the Kavango, Namibia (© Marcus Westberg)

CHAPTER 2:

Approach and Methodology

2.1. Introduction

The overall approach to developing the Namibia National ILK Outlook was guided by a structured set of objectives designed to ensure a robust, systematic, and policy-relevant process. The approach focused on creating an FPIC compliant methodology aligned with global and national ILK frameworks to ensure effective documentation and analysis. The objectives pursued include:

(i) **Harmonized methodological approach:** Develop a common approach for the Namibia National Outlook on ILK of Biodiversity process in coordination with the other pilot countries in order to create a methodological framework that can be rolled out in the next phases on the initiative;
(ii) **Assess the ILK base**: Determine the current base of documented ILK on biodiversity and ecosystem services in Namibia and define knowledge gaps;
(iii) **Strengthen policy processes**: Evaluate to what extent ILK is incorporated in the revised NBSAP, national targets in line with KMGBF and biodiversity policies, assessing gaps in alignment and defining recommendations, both in terms of content and process; and
(iv) **Enhance capacity**: Based on identified capacity gaps in content and processes, start a process of strengthening the engagement between traditional knowledge holders and national policy makers in order to improve the mainstreaming of ILK into NBSAP implementation and national reporting in Namibia.

To achieve these objectives, a mixed methods approach was adopted, combining qualitative techniques, participatory consultations with knowledge holders, relevant policy analysis, and literature reviews to ensure a comprehensive and evidence-based Outlook of ILK. Utilized methodologies are outlined below.

2.2. Desktop Review

Desktop research was undertaken to assess the current state of available, documented and utilized ILK of biodiversity within Namibia. This review encompassed both academic and grey literature, including organisational and community reports, to capture a broad and representative picture of ILK across different ecosystems and regions in Namibia. Seventy-six articles, books and items of grey literature were included. Throughout this process, the team informally engaged key informants, and academics in Namibia and neighbouring countries,

key experts within the Ministry of Environment, Forestry and Tourism (MEFT), as well as some of the many civil society and community organizations that partner with NNF and UNESCO to ensure comprehensive coverage of Namibian ILK. The desktop review also identified possible gaps in ILK and ILK documentation, pinpointing spatial and thematic areas where knowledge is understudied and/or insufficiently recorded. The desktop review was conducted through a combination of online searches and stakeholder engagements. The review included works from 1975 to 2025, conducted within Namibia. Eligible studies were those in which ILK of biodiversity was explicitly mentioned through descriptions of practices, beliefs, or knowledge associated with biodiversity and natural resources. All research methodologies - qualitative, quantitative and mixed-methods - were included. Studies whose samples were entirely outside Namibia, and those lacking an explicit consideration or documentation of ILK of biodiversity were excluded. The search was conducted in English and works for which translation was not searchable were therefore excluded.

2.3. Policy Analysis

The policy analysis involved a detailed assessment and review of Namibia's biodiversity policies, legislative frameworks and relevant policy reports. The review examined the level of ILK inclusion in biodiversity policies, strategies and legislative frameworks. The methodology included collation and review of existing reports on related subject areas, discussions with subject matter experts, online searches and inputs from the participants of the two workshops. Policies that provide indirect relevance to ILK and related frameworks were also included.

The policy analysis identified areas where ILK is inadequately reflected in policy instruments, serving as a guide to highlight gaps in ILK inclusion within biodiversity policies.

2.4. Multistakeholder Dialogues

To strengthen the conclusions of the desk-based research and assess how ILK is collected and included in decision-making from a community-level perspective, NNF in collaboration with UNESCO hosted two dialogues.

2.4.1. ILK Dialogue Workshop with Communities

A 2-day workshop was held in Windhoek with Indigenous Peoples and local communities, in September 2025, attended by 63 participants (44 men and 19 women). To ensure the inclusion of the most relevant community representatives, selection criteria for participants were established to achieve a fair and equitable representation of ILK across the country. Priorities were ranked based on factors such as Indigenous Peoples, representatives from living museums, local communities

(through CBNRM associations), Traditional Authorities, language diversity, ensuring that all regions of Namibia were represented.

The goal of this workshop was to understand core areas of ILK held by the communities, the current level and format of documentation of ILK across the ecosystems and regions, and the need for further documentation, but also rights and responsibilities in the process of documentation, including aspects of intellectual property and authorship.

The full documentation of the workshop is found in Appendix 7.1.

Pictures: ILK Dialogue with communities in Windhoek, Sept 2025 (© UNESCO)

2.4.2. Multistakeholder ILK-Policy Dialogue and Capacity Building Workshop

The ILK Policy Mainstreaming Workshop held on 5 and 6 November 2025 brought together 36 participants, 20 women and 16 men including government officials, Indigenous Peoples and Local Communities, academic institutions, and civil society organizations to advance the integration of ILK into Namibia's biodiversity policies and decision-making processes. Building on the previous workshop held in September 2025, this event focused on ILK Outlook findings, identifying gaps in ILK documentation and policy integration, and developing practical strategies for mainstreaming ILK across sectors. The workshop emphasized the importance of ILK for cultural preservation, biodiversity conservation, sustainable livelihoods, and climate resilience, while highlighting the need for ethical, community-led documentation and equitable benefit-sharing.

The full documentation of the workshop is found in Appendix 7.2.

Pictures: ILK Dialogue with communities in Windhoek, Sept 2025 (© UNESCO)

CHAPTER 3:

Documented ILK in Namibia

3.1. General Trends

A review of both academic and grey literature on ILK of biodiversity in Namibia shows that documentation is uneven across time periods, ecosystems, and regions. Earlier publications mainly consist of ethnobotanical reviews, while more recent work tends to take the form of academic journal articles focusing on specific species. There has been a gradual increase in number of publications (Figure 2). Some studies adopt a national perspective, assessing a section of ILK across Namibia as a whole. However, much of the literature focuses on particular regions, with the strongest concentration of work in Omusati and Zambezi (Figure 3, Figure 4). In contrast, regions such as Hardap, Karas and Omaheke are largely absent.

The level of documentation also varies significantly by thematic focus (Figure 5). Flora is by far the most frequently explored area of ILK, especially in savannah landscapes. This body of work includes a few older ethnobotanical works as well as a substantial number of studies that seek to scientifically validate traditional knowledge, for example on medicinal plants. Beyond flora, there is a moderate volume of literature that discusses ILK on biodiversity in general, without specifying ecological systems. Research on fauna, largely concentrated in savannah environments, spans a few topics – tracking, myths, Human-Wildlife Conflict (HWC) but lacks a clear thematic focus and consists mainly of localised case studies.

By contrast, ILK related to freshwater and inland fisheries, marine and coastal environments, and climate adaptation and disaster preparedness and resilience is very sparsely documented, with very few published works, despite the importance of these knowledge systems and the depth of expertise that exists in these areas (Figure 5). In this figure, the “General” category refers to studies and publications that do not focus on specific elements of ILK, but rather document multiple fields of knowledge, or examine ILK in relations to education, governance and co-creation methodologies within the Namibian context.

Subsequent sections delve into the different ILK topics documented in both academic and grey literatures in Namibia. It is important to state that early works, up until publications in the early 2000s, do not explicitly engage with or document FPIC, and may rest on data collected before and during Apartheid epoch, and hence results from these efforts need to be shared carefully.

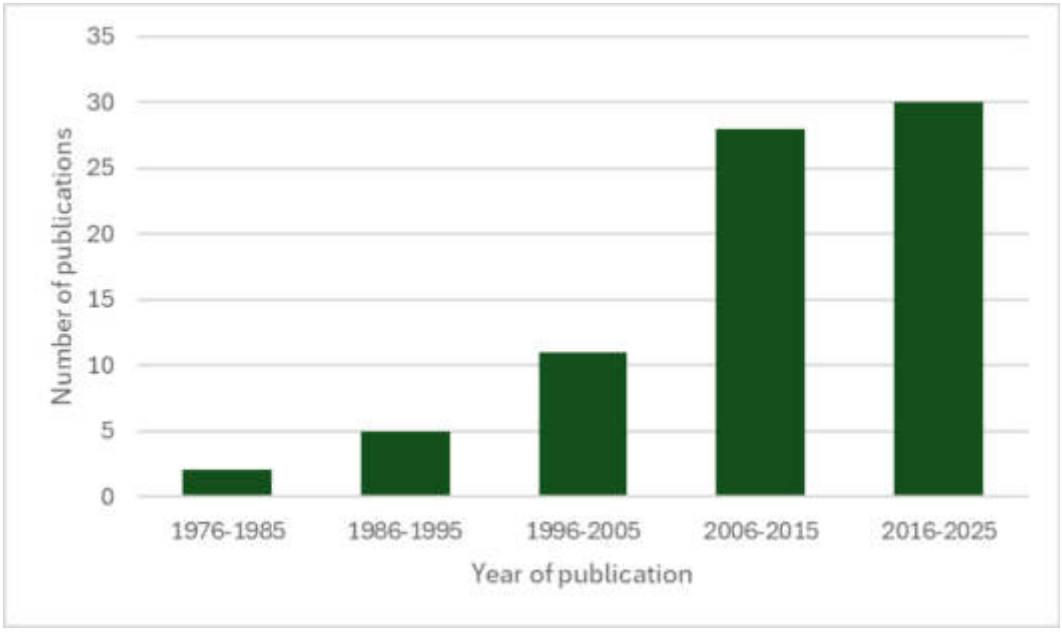


Figure 2. Number of publications over time[1]

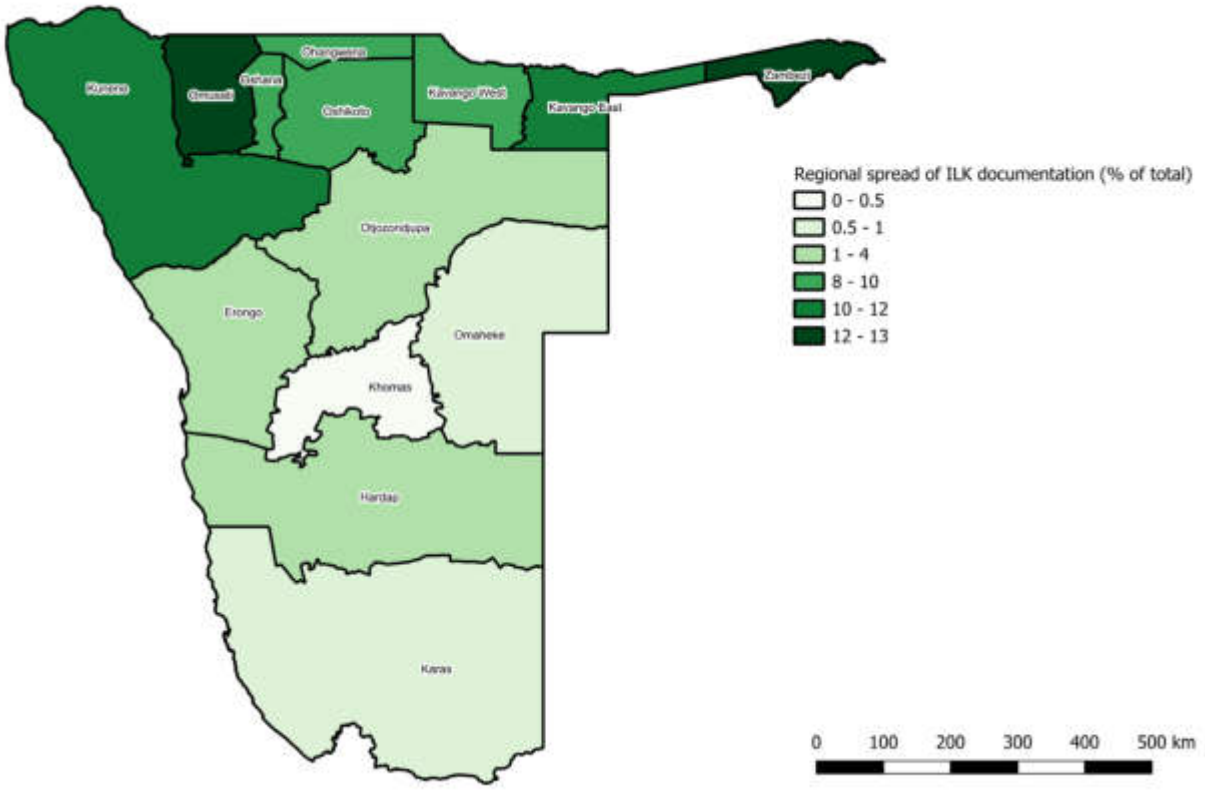


Figure 3. Regional spread of publications

1 Chinsembu et al. (2015) is counted as a single publication.

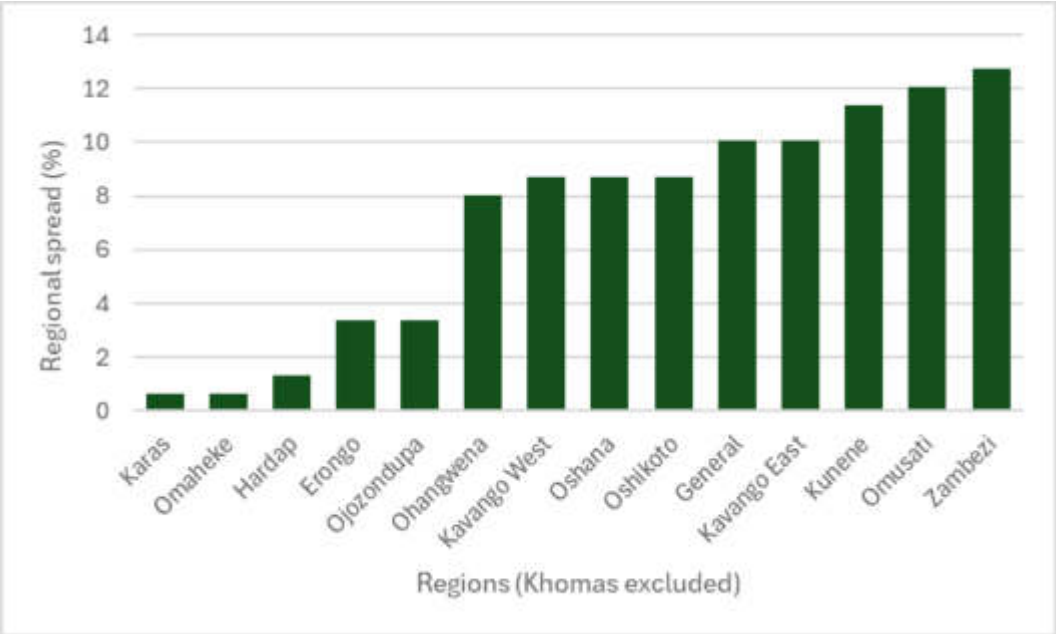


Figure 4. Regional spread of publications in percentage (Khomas excluded)[2]

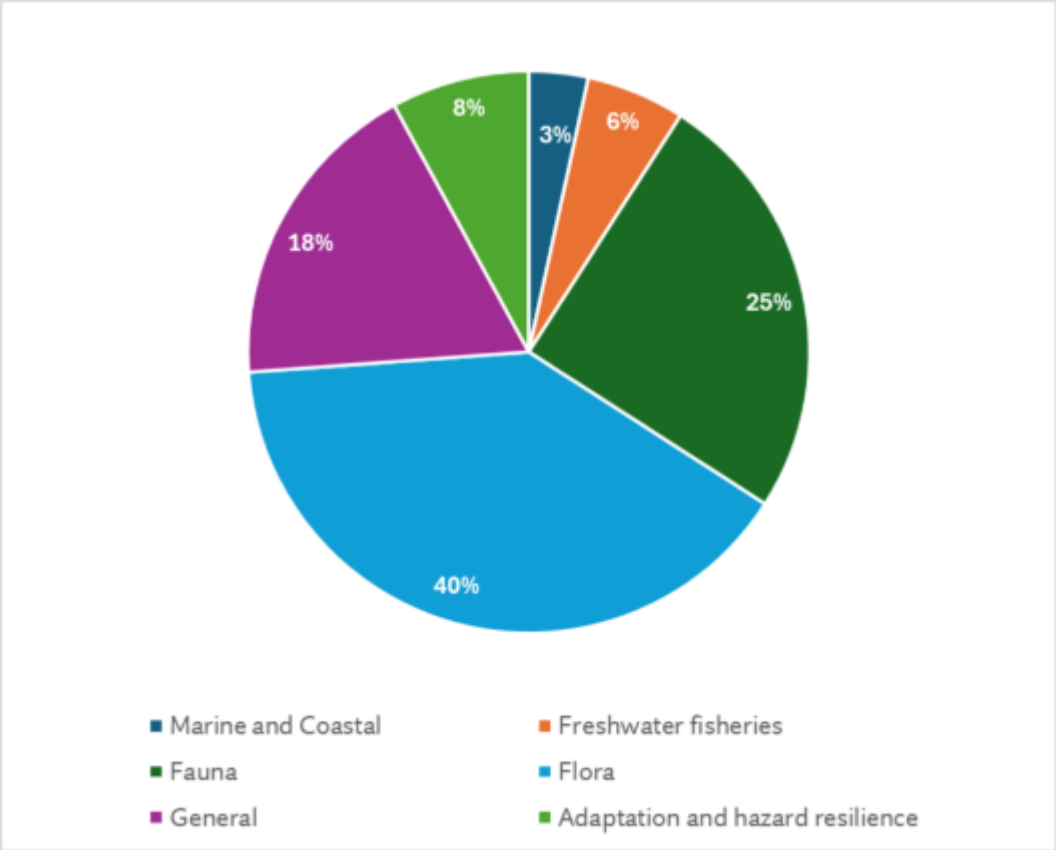


Figure 5. Share of publications per thematic focus in percentage[3]

2 The chapters in Chinsembu et al. (2015) are counted separately as independent publications.
3 The chapters in Chinsembu et al. (2015) are counted separately as independent publications.

3.2. Marine and Coastal

The marine and coastal environment is the least documented ecosystem in Namibia with respect to ILK. Documentation efforts to date have been very sporadic and limited in scope. Namibia's coast consists mostly of national protected areas, with few rural communities living along the coast. ILK in these ecosystems is largely held by the Topnaar (≠Aonin) people, displaced by colonial policies, now living at least 30km from the coast. The Topnaar community, a Nama clan, is the only Indigenous group in Namibia with a recognised historical and cultural connection to the Atlantic coast. However, existing literature provides only partial insights. This may be explained by the forced displacement of populations along the coast. For example, Budack (1983) documented traditional practices of the Topnaar, historically connected to the ocean, but focusing primarily on the harvesting of the !Nara fruit along the Kuiseb River rather than marine resource use or ocean-based cultural practices.

More recent work has attempted to address this gap. The University of Namibia (UNAM), through the One Ocean Hub initiative, collaborated with the Topnaar community members on the Húrinin Project, which sought to document ocean-related cultural heritage and perspectives. This initiative generated several grey reports and adopted community-led documentation methods, including storytelling sessions and fireside dialogues (see Section 2.1 for more details). In addition, through this project, Topnaar representatives have participated in national policy processes. For instance, they contributed to consultations for Namibia's National Plan of Action for Small-Scale Fisheries (NPOA-SSF) and were also engaged in Marine Spatial Planning (MSP) consultations under this project. The community has also initiated its own research efforts. A local roundtable led to the establishment of a small group of community researchers focused on exploring historical and socio-cultural ties to the ocean. This has included the collection and recording of traditional songs, poetry, and dances related to fishing and other ocean-based practices.

The recently launched Ocean Literacy Toolkit (OLT) for Namibia (2025) aims to increase ocean literacy within the country, through nationally adapted content and case studies. Importantly, it explicitly introduces the connection of people to the ocean with the Topnaar community as a point of reference. Work is currently underway to collect additional knowledge from community members, aiming to integrate it into future OLT roll outs, and showcase an example of how science and ILK can and should coexist. Although not from a specific Indigenous or ethnic group, small-scale fisheries (SSF) hold, and still develop, ILK related to their marine and coastal livelihood. The NPOA-SSF recognizes ILK as a core strength in SSF, including inter-generational transfer of traditional gear (e.g. nets, hook-and-line), seasonal fishing patterns, and women's roles in coastal processing (e.g., pickling rock lobster as "kerrie-vis").

Picture: Launch of ocean literacy toolkit in Sept 2025 (© UNESCO)

Patterson et al. (2014) advocates combining fishers' ILK (e.g., navigation by seasonal patterns, observations of water temperature/fish behaviour) with scientific data in hake and rock lobster fisheries. This considers local insights on stock locations informing sustainable quotas and collaborative validation with communities. Despite the report being published a decade ago, our analysis found no evidence of ILK being incorporated into fishing quota setting.

3.3. Freshwater and Inland Fisheries

The first documentation of fisheries related information in Namibia was done by Van der Waal (1990) *Aspects of the fishery of the Eastern Caprivi, Namibia.* This publication describes the ecology of the river system and its dynamics, as well as fishing practices and gear used in the past, including traditional gear in much detail.

An updated version of this article was included in the very recent book published by Merron and Hocutt (2025) "Inland Fish and Fisheries in Namibia". This book was published first in 2023, which formed a landmark for freshwater fisheries, as it is the first comprehensive description of fishes and fisheries of Namibia. It comprises 14 chapters written by eight contributing authors and two editors (Merron and Hocutt) and which describe in detail the systematics of the fishes in Namibia, the ecosystems and their dynamics, a description of all abundant fish, historical aspects, fishing practices and management paradigms, but also current threats to the ecosystem and conservation approaches.

Of particular importance for understanding the documentation of ILK in freshwater ecosystems are the chapters 6 on "Namibian waterbodies and their fisheries" by Hay (2025), and Chapter 9 on "Traditional and modern fishing methods" by Van der Waal (2025).

In chapter 6, Hay (2025) describes the different freshwater fisheries and the traditional methods of catching certain fish species; traditional beliefs around fish and the impact on the fisheries – e.g. traditionally, OvaHimba people do not eat fish, therefore for the longest time, the Kunene fishery was not utilized which resulted in a more intact and healthy fish population on the Kunene compared to other, more exploited river systems in Namibia.

The use of traditional fishing gear is classified as subsistence use. The exact definition of traditional gear is important for policy decisions, as traditional gear require different permits. Traditional gear and its use across the river systems in Namibia is described in detail in chapter 6 by Hay (2025), including parts of the river where specific gear is used, the seasonality and the user group including gender aspects, the bait used, and the catch rates.

Fish were originally caught for food security and trade. Certain areas and seasons were closed for fishing to allow for recruitment to take place, with the local headmen controlling fishing activities in their areas.

Rules enforced by communities included:

- Banning of certain fishing methods such as drag netting (first used in 1990s in Zambezi Region), poison (1950s in Kavango and 1970s in Zambezi) and explosives;
- Limitations on large fences in Zambezi Region;
- No fishing on the floodplains before the chief had opened the season;
- No use of lamps during the night;
- No bashing to drive fish;
- Minimum mesh restrictions for gillnets; and
- Access to mainstream rivers was generally open to fishing, but floodplains were more restricted with outsiders requiring permission. Control was exerted over local embayments and ponds.

Some traditional fishing rules are documented for the specific rivers systems, for instance on the Kavango River: fishing was only for personal/household consumption; small fish were not allowed to be taken out; no one was allowed to fish in a pool that was drying up without permission; and only experts were allowed to fish, and on a rotational basis; fishing was done according to water levels and with appropriate gear and methods used, and largely gender segregated.

Fishing in the Oshanas of the Cuvelai system was controlled by the King or the local chief, allowing fishing only once the migrating species were of sufficient

size. Local people were allowed to fish in the shallow pans, but visitors had to ask permission and compensate for fishing rights by sharing part of their catch.

In Chapter 9, Van der Waal (2025) explains the relevance of fishing in Northeast Namibia, describing traditional gears, the materials used make them, and associated fishing practices. Evidence shows that fishing in northern Namibia dates back to early human migrations from tropical northern regions. Traditional fishing methods in the area were closely linked to the local flood cycle and included both active and passive gears. Active methods involved tools such as spears, harpoons, bows and arrows, hooks, baskets, and dugout canoes, allowing fishers to target different species in various water conditions. Passive methods relied on stationary structures, including earth and grass bunds, corral and valved traps, constriction funnels, and barrel traps, which guided or captured fish with minimal effort.

Picture: Kavango woman with traditional fishing gear (© Britta Hackenberg)

The chapter further outlines the shift from traditional to modern gear and its consequences for the riverine ecosystem. Over time, modern materials such as nylon, steel, and factory-made hooks have been incorporated, leading to innovations like nylon gillnets, longlines, seine and drag nets, and bottle or valved traps. These modern adaptations have increased fishing efficiency and enabled the capture of larger quantities

of fish, but they have also contributed to overfishing and a decline in fish populations. As traditional fishing practices are gradually replaced, there is growing concern that the knowledge and skills associated with constructing and using traditional gear may be lost. The following table provides and overview of traditional fishing gear in Namibia:

Table 1. Traditional fishing gear, as documented by Merron and Hocutt (2025)

Gear	Traditional name	Photo
Corral traps	*Sintunga*, used predominately by women in the floodplains	
Oval scoop baskets	*Tambi*, used predominately by women in marginal vegetation	
Fish funnels	*Shikuku*, used in floodplain declining waters, backwaters and rocky habitats	
Hook and line	*Odjolo* (Cuvelai); *Egondo*, *Erowo* (Kavango); *Kashuto* (Silozi)	
Fish spears	*Ekupa* (Cuvelai); *Musha*, *Egonga* (Kavango); *Muwayo* (Silozi), *Muso* (Sisubia), often used in shallow waters for migrating fish	

Gear	Traditional name	Photo
Push baskets	*Sididi*	
Bow and arrow	*Nguba* (Ngumba), *Uta Makanza* (Kavango); *Buta*(Silozi); more used in Kavango to shoot breams and catfish in shallow water	
Fishing harpoon	*Onkupa, Lukupa, Ekupa lyokukwata oohi* (Cuvelai)	
Valved trap	*Omudiva, Otalate* (Cuvelai); *Muduwa* (Kavango); *Muono, Lukuko, Muhoho* (Silozi), often used with a bund, low wall of soil, low fence of brush or grass in shallower areas	
Barrel valved trap	*Ngumba, Matumba, Njamba* (Silozi) to catch large mature fish along river banks	
Constriction funnel	*Lifula* (Lozi), mostly used by men in strong currents, e.g., the rapids in Impalila	

Chapter 11, written by van Zyl (2025), recognizes that freshwater systems also provide strong cultural services. These services generally come in two forms: spiritual and commercial. Various spiritual activities of communities are linked to water courses.

Tvedten (2010) examines the social, cultural, and economic importance of fishing in Namibia's Caprivi (now Zambezi) Region. Drawing on ethnographic fieldwork, Tvedten shows that fishing is not merely a livelihood activity but a central part of Caprivian identity and community life. The phrase in the title "If you don't fish, you are not a Caprivian" reflects how deeply fishing defines belonging and social status in the region. Fishing provides vital income and food security for households that have limited access to formal employment, serving as a safety net in times of economic uncertainty. The study highlights the gendered nature of the sector: while men dominate the act of fishing, women play crucial roles in processing, trading, and managing income from fish sales. Despite their significance, these contributions

remain largely invisible in policy and management frameworks. The findings suggest that sustainable resource management must integrate social identity, culture, and gender considerations alongside ecological priorities.

Picture: Man using hook-and line on Lake Liambezi in Zambezi region (© Marcus Westberg)

In June/July 2024, NNF organized a series of workshops with riverine communities engaged in the establishment or management of fisheries reserves in the Kavango and Zambezi Regions, involving a total of approximately 100 persons, which culminated in the Fisheries Indaba that took place from 16-19 July 2024 in Windhoek. The workshops were organized to assist communities to consider their traditional knowledge in respect of freshwater fisheries, including aspects such as:

- Fish species, their habitats, breeding patterns as well as their conservation status;
- Traditional fishing gear, the uses and users, seasonality of the different gear;
- Avoiding human-wildlife conflicts on the river;
- Traditional beliefs around fish and fish consumption;
- Preparation and cooking styles of fish and aquatic plants; and
- Practices around fishing and fisheries management.

Participants of the workshop were surprised to hear about the growing interest in ILK and saddened by the prospect that much of this knowledge has probably already been lost. Several participants volunteered to contribute to documentation efforts – offering to produce, for instance, drawings (e.g. of fishing gear), to perform fishing practices to be recorded on video, and to narrate stories on camera to document tales and beliefs.

Figure 6. Painting by Charlene Mandifadza Jiji (2024)

The information was documented and presented at the Fisheries Indaba using Ao size posters and videos; while the aim was to explicitly document non-sensitive knowledge for the purpose of the Indaba, the communities expressed appreciation and interest to further engage in the documentation of this knowledge due to the risk of losing it as a result of lack of inheritance. Communities collected and consolidated information on fish species in the river systems of North-East Namibia (Kavango, Kwando, Chobe and Zambezi) including the local names, habitats, behaviour and spawning patters. The traditional gears and methods used to fish different species and the seasonality were illustrated; flood dynamics including indicator species; traditional beliefs, protection methods against Human Wildlife Conflict (HWC) on the rivers, folklores; as well as traditional cooking styles were shared.

A workshop report with the posters and videos is available on request, but as per agreement, not to the wider public. The only exception (aside from the drawing) is the traditional cooking methods, which, based on explicit request, were consolidated and published as a paper document in the booklet "Fish recipes from the wetlands of Namibia", published by NNF in December 2024 (available on request) (Namibia Nature Foundation, 2024). The book is a collection of traditional methods of preparing different fish species, collected in the Kavango and Zambezi Regions.

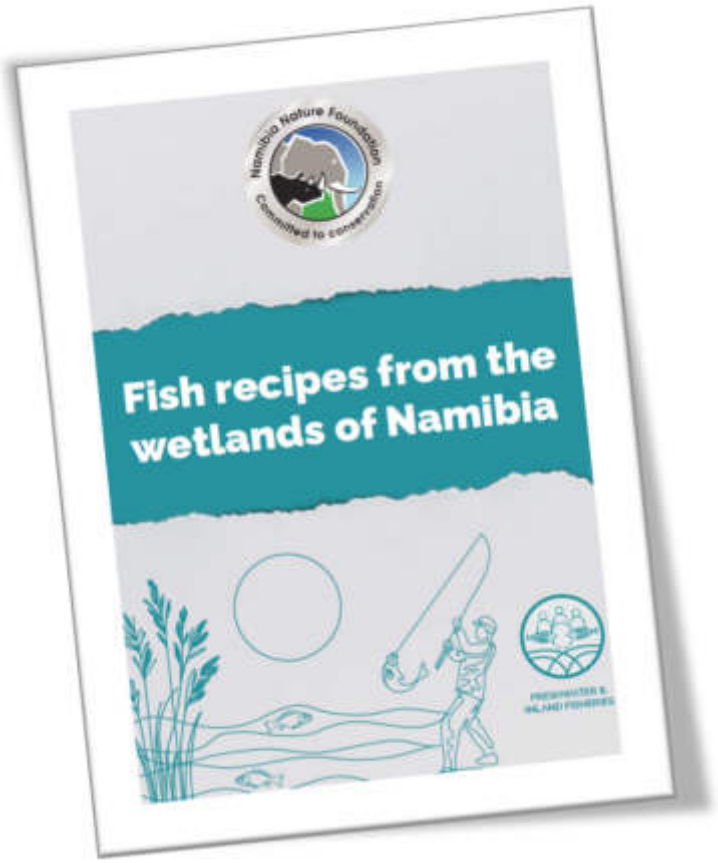


Figure 7: Fish recipes book by NNF (2024)

At the Indaba, it was flagged that there are hardly any scientific papers considering ILK of fish and fisheries management; as a result, interest was created among at least two scientists now pursuing their studies and preparing papers on topics on ILK and fisheries. At the National ILK Outlook consultative meeting in September 2025 with selected Indigenous Peoples and local communities across the country, participants highlighted the need to document other aspects beyond the ones mentioned, such as the importance of maintaining grasses and reeds to prevent wind and water erosion as part of the ILK record on freshwater ecosystems, as well as traditional cooking styles for fish and edible aquatic plants.

3.4. Terrestrial

3.4.1 Fauna/Wildlife

Despite receiving more attention than marine, coastal, or freshwater ecosystems, ILK on terrestrial fauna is still considered to be sparsely documented.

The National ILK Outlook consultative workshop with holders/custodians of ILK (Workshop 1 – 03-04 September 2025) identified wildlife as an important topic for ILK. Animal skins are considered an important resource for cultural-wear, mats and as commercial sale items. Porcupine quills and ostrich shells are important items for

jewellery, hats and rituals. This was particularly mentioned by inhabitants of Omaheke and Otjozondjupa Regions but uses are expected to be widespread across the range of these animals. The use of wildlife behaviour and vocalisation as indicators of resources or as safety measures (e.g. bird alarm calls) is commonplace. However, to the best knowledge of workshop participants, this practice has seldomly been documented.

Various parts of animals, primarily vertebrates, are used to treat ailments. For example, mongoose head extract reduces snakebite effects, and lizard fat treats ear infections. Access to, and sufficient abundance of these animals is therefore critical, and should form part of conservation planning. ILK documented in rock paintings and engravings provide important evidence of the distribution of wildlife in the distant past, suggesting that human-animal relationships have been central to local ecological knowledge. Contemporary research, however, remains sparse and uneven, and showcasing a collection of examples rather than comprehensive documentation.

Picture: Elephant painting in the southern Namib.
(© Morgan Hauptfleisch)

Animal folklore and beliefs

A few studies delve into animal-related beliefs. Through extensive research, long-term community engagement, and 14 months of dedicated fieldwork for this study, Fisch (2008) offers one of the most comprehensive accounts of the biodiversity-related practices of a specific Namibian people. Her work centres on Bantu-speaking communities in the Kavango Region. While, like many ethnographic studies, her analysis begins with the documentation of species names, Fisch's engagement with ILK goes far beyond nomenclature. She highlights how linguistic expressions embody the communities' intricate relationships with nature, for instance, by showing how specific terms are used to describe different parts of a fish or its developmental stages.

Her study pays particular attention to hunting practices, providing detailed descriptions of every phase of the process, from tracking and weapon use to associated rituals and rites. She includes illustrations of traditional weapons, indicating the animal species for which each was intended (see Figure 8). Fisch also notes that certain stalking techniques are recorded in traditional songs and explores related cultural expressions, such as cooking practices, magical beliefs, and ritual observances.

Her book's concluding sections present an extensive compilation of proverbs and songs in their original languages, organised by species. These include: elephant (*ndhovu*), giraffe (*mbahe/mvashe*), buffalo (*nyatji*), eland (*ntjefu/hefu*), blue wildebeest (*ngerenge/thovu*), common tsessebe (*kakuhu/rufuvu*), roan antelope (*mpengu/mengo*), kudu (*horongo/myu*), sitatunga (*mbuli/ndhowe*), lechwe (*ntjonge/honge*), reedbuck (*ntushi/ruvi*), duiker (*mbambi/mapi*), steenbok (*mpundja/mundha*), lion (*nyime*), leopard (*ngwe/ndhogho*), cheetah (*lishumbu/dihumbwa*), spotted hyena (*shimbungu/dimbungu*), african wild dog (*mbindi/mbindhi*), jackal (*mbwawa*), springhare (*nkwiyu/nwiyu*), hare (*ndimba/kadimba*), vervet monkey (*ntjimal/shoko*), african wild cat (*shinono/thinono*), genet (*rutimba/thimba*), slender mongoose (*kamukondo/kamuncono*), tree squirrel (*ngere/thindi*), striped polecat (*kangambe*), honey badger (*ntjanda/shanda*), warthog (*shinguruve*), otter (*ntjorovere/mbagho*), bat (*kapukupuku*), ostrich (*mpo/mwe*), African fish eagle (*mpungu*), spur-winged goose (*litjokwe*), white-backed vulture (*likuvi/dikwi*), bateleur (*shipupa*), yellow-billed kite (*shihere/tjihere*), helmeted guineafowl (*nkanga/nanga*), francolin (*shiwali/dikwakwa*), namaqua dove (*kambogho*), drongo (*shitengu/thitengu*), ground hornbill (*shingomba*), blacksmith plover (*kakurekure*), secretary bird (*mukongo*), rufous-bellied heron (*shivo*), crocodile (*ngandu*), snakes (*mayoka*), bullfrog (*lintjeti/dihethi*), termites (*ghunhwa*), bees and honey (*ushi* and *wiki*).

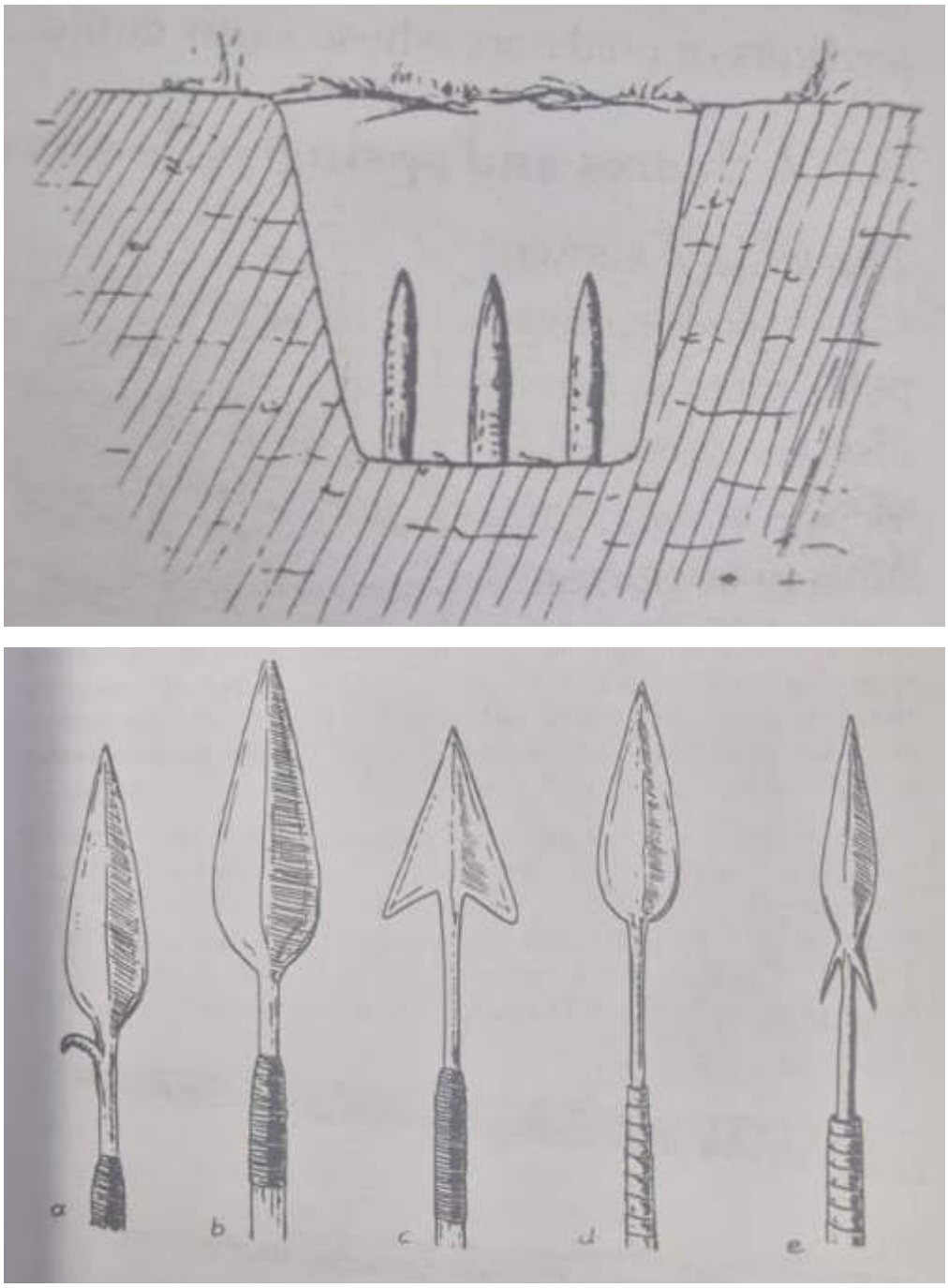


Figure 8. Traditional hunting gear of Bantu-speaking communities in Kavango, as documented by Fisch (2008)

Another comprehensive account is the study of Khwe community`s relationship with wildlife, focusing on antelopes, revealing a vast array of ILK and uses (Nghitevelekwa et al., 2024). Information was collected from the research of the area as well as a comprehensive 5-years of field work. This comprehensive approach was complemented by short term research through group discussions, and informant interviews representing one of the most in-depth methodologies noted in the literature. This resulted in a comprehensive overview of beliefs by this specific group, on the following topics:

1. ***Spiritual and Symbolic Connection***
   The Khwe view antelopes as "gifts from their ancestors" and part of their collective identity. Elders used to communicate spiritually with animals (e.g., lions or elephants) to calm them. Eland is especially sacred - called "the beauty animal" or "king of the antelopes". Its fat is used in female initiation rituals to ensure beauty and fertility. Killing an eland earns the hunter respect and status, but the act is accompanied by apology and ritual remorse. Certain animals (like duiker) are seen as omens - their appearance or behaviour can signal death or misfortune.

2. ***Moral and Emotional Connection***
   Antelopes are seen as beings that "sense with us", deserving empathy and apology when hunted. Hunting is traditionally accompanied by ritual respect, silence, and spiritual awareness. The Khwe express love and kinship toward wildlife, not just utilitarian use.

3. ***Cultural and Naming Practices***
   People and places are named after antelopes based on perceived similarities (e.g., agility, bravery, speed). This creates a symbolic link between human traits and animal characteristics, embedding animals in human identity.

4. ***Medicinal and Practical Uses***
   Antelope parts (especially hooves, droppings, and skins) are used for traditional medicine: Droppings for malaria, stomach ailments, and swollen glands; hooves for toothache, bone pain, or childbirth complications; skins are used for blankets and clothing, continuing a tradition of sustainable material use.

5. ***Hunting, Conservation, and Reciprocity***
   Hunting follows strict cultural rules: Certain species or ages are avoided. Hunting seasons are aligned with breeding cycles to allow replenishment. Hunters apologise to trapped animals and sometimes release them to restore balance, believing this act brings reciprocal blessings (e.g., wild dogs later helping to drive prey toward the hunter). These practices embody a form of conservation ethics guided by mechanical solidarity — shared values and collective moral responsibility.

6. ***Loss of Connection Under Modern Conservation***
   The Khwe feel that new conservation laws (banning traditional hunting) have broken their ancestral relationship with wildlife. They now feel that "the animals belong to someone else", creating emotional distance and frustration. Despite this, they still view conservation as part of their moral and ancestral duty, not just an economic activity. Antelopes are kin, teachers, medicines, and spiritual messengers. Their relationship is one of respect, reciprocity, and shared existence rather than dominance. Modern restrictions threaten this bond, transforming what was once a moral, lived connection into a regulated, external system. Table 2 summarizes the researchers' key findings.

Picture: Eland herd (© Morgan Hauptfleisch)

Table 2. ILK related to antelope species for the Khwe, adapted from Nghitevelekwa et al. (2024)

Antelope Species	Khwe Name / Description	Cultural & Spiritual Meaning	Associated Practices / Beliefs	Conservation or Ethical Dimension
Eland (Taurotragus oryx)	"Beauty animal" / "King of the antelopes"	Sacred and kind; symbol of peace, beauty, and human like ness	Used in women's initiation rituals – eland fat rubbed on girls' bodies to ensure attractiveness; hunters apologise to the eland when killing it	Hunting eland earns respect; demonstrates empathy and spiritual reciprocity; conservation through respect and selective hunting
Kudu (Tragelaphus strepsiceros)	Large and majestic antelope	Symbol of restraint and wisdom	Belief that eating too much kudu meat causes bone and dental problems; young people discouraged from eating much	Cultural restraint prevents overhunting; a built-in sustainable use ethic
Oryx (Oryx gazella)	Brave and clever animal	Symbol of alertness, strength, and protection	Oryx senses danger and "warns" people; hunting requires bravery and ritual silence at home during the hunt	Only skilled hunters may hunt it; reinforces careful, respectful hunting traditions
Sable (Hippotragus niger)	Large, rare, strong antelope	Courage and endurance	Requires bravery to hunt; associated with respect and ritual quiet during hunting	Selective hunting and reverence protect the species
Roan (Hippotragus equinus)	Similar to sable in meaning	Symbol of strength and rarity	Highly valued but hunted rarely; admired for beauty and size	Revered species; limited hunting reflects conservation ethic

Antelope Species	Khwe Name / Description	Cultural & Spiritual Meaning	Associated Practices / Beliefs	Conservation or Ethical Dimension
Tsessebe (Damaliscus lunatus lunatus)	Common yet significant	Associated with careful hunting and ritual rules	Subject to same respectful silence as sable and oryx during hunts	Reflects moral discipline in hunting practices
Springbok (Antidorcas marsupialis)	Small, graceful antelope	Messenger and omen	Sudden appearance near home may signal bad luck or death; also used medicinally	Selective hunting during breeding season; droppings and hooves used for medicine
Common Impala (Aepyceros melampus)	Common but clever antelope	Seen as spiritually aware; part of ecosystem wisdom	Hunters can distinguish its tracks; its behaviour teaches awareness	Hunters read animal signs to decide when to hunt; promotes harmony with nature
Common Duiker (Sylvicapra grimmia)	Small forest antelope	Considered an omen of death or misfortune	If repeatedly missed during hunting or caught in traps, it signals a coming death or danger	Hunters may release it to avert misfortune; ritual behaviour preserves species
Reedbuck (Redunca), Red Lechwe (Kobus leche) or smaller antelope	Small-bodied species	Useful for meat and medicine	Hunted seasonally and selectively; never overhunted	Seasonal hunting cycles ensure regeneration and sustainability

Such comprehensive mapping of belief systems for fauna is very scarce in the Namibian context.

Another example can be found in Crandall (2002), who focused on OvaHimba communities in Kunene. Based on interviews with a few community members, he notes that animals are embedded in local culture, appearing in folklore, dances, human character descriptions, joking relationships and proverbs, and are often associated with human traits. He provides general considerations of OvaHimba's classification/ taxonomy of animals, which goes beyond a naturalist approach and connects human and animal kingdoms. Classifications rest on physical and behavioural characteristics. Several creation myths inform the projected genealogy of animals. An example of this genealogical system, as documented in the article, is presented in Figure 9. The author also provides similar genealogical system for a few other species.

Additionally, Crandall (2002), delves into a specific myth and folklore on hyenas. While several more myths surely exist, this is one of the only documented examples in the Namibian context. The term used for the hyena, "*omayova*", is often translated as "stupidity" but carries nuanced meaning: when applied to animals, it denotes inferior intellectual capacity, whereas in humans it refers to individuals who deviate from normative gender roles or behaviours by choice. The hyena's anatomical and behavioural anomalies are thus paralleled with human moral and social deviations. This illustrative example demonstrates how fables intricately merge ecological observation with social reflection and provides as small window into complexity of these partially documented ILK systems.

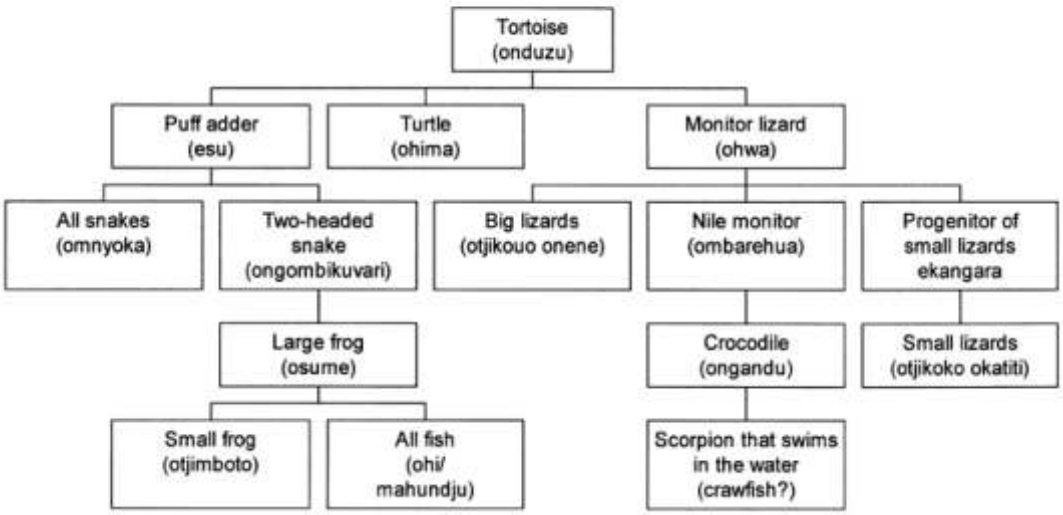


Figure 9. Animal genealogy according to OvaHimba communities, as documented by Crandall (2002)

Across both Khwe and OvaHimba contexts, a consistent trend is that ILK on fauna-related beliefs is described highly detailed and sophisticated yet only documented through illustrative examples rather than comprehensive overviews. Studies often involve small samples – for instance 25 participants over 3 years in Crandall (2002), that are geographically limited, and frequently focus on a single group, constraining broader generalizations. Despite these limitations, the research demonstrates that ILK includes spiritual and ecological dimensions, highlighting the deep understanding and interconnections that Indigenous Peoples and local communities in Namibia have with wildlife. Beyond human-animal relationships and myths, several themes related to fauna are also described in the literature, as discussed below. In a more comprehensive approach, Fisch (2008) delves into the traditions, myths and practices of the Mbukushu and Gciriku tribes along the Kavango River. She provides details on hunting methods – from stalking to gravity traps, for various species - as well as hunters' spiritual and religious perception of their environment. She documents a large number of poems, songs and proverbs.

Tracking

The tracking of wildlife is a central theme in ILK but has only been documented through very localised case studies. One of the earlier works, conducted by Stander et al. (1996) assessed the accuracy of spoor tracking among Ju/'hoansi trackers. The authors found that community trackers correctly identified animal species and interpreted spoor in 98% of cases. Beyond simple identification, trackers were also able to infer complex behavioural patterns—such as whether a predator had hunted or scavenged, whether an animal had died from illness, and how recently an event had taken place, based solely on spoor evidence. These assessments were made across a range of soil types in forest and shrub savanna

environments and involved species such as lion, leopard, cheetah, spotted hyena and wild dog. The study called for closer collaboration between scientists and holders of ILK, recognising the high level of skill and reliability demonstrated by local trackers.

Since the establishment of Nyae-Nyae Conservancy, track identification has formed part of the annual wildlife census and wildlife monitoring. Walters et al. (2024)'s contribution addresses key issues around the application of ILK in contexts where such knowledge is neither generated or held, such as in academia, industry, or governments. They examined the effectiveness of track identification by local inhabitants as a wildlife monitoring tool and found that, for carnivores, it was more effective than visual counts.

Local knowledge of elephant movements and migrations in the Kunene Highlands was compared to actual movements as identified through satellite tracking technology (Hauptfleisch & Wenborn, 2025). The local knowledge was remarkably similar to what the satellite tracking data showed (Figure 10), meaning its value as scientific knowledge should not be underestimated.

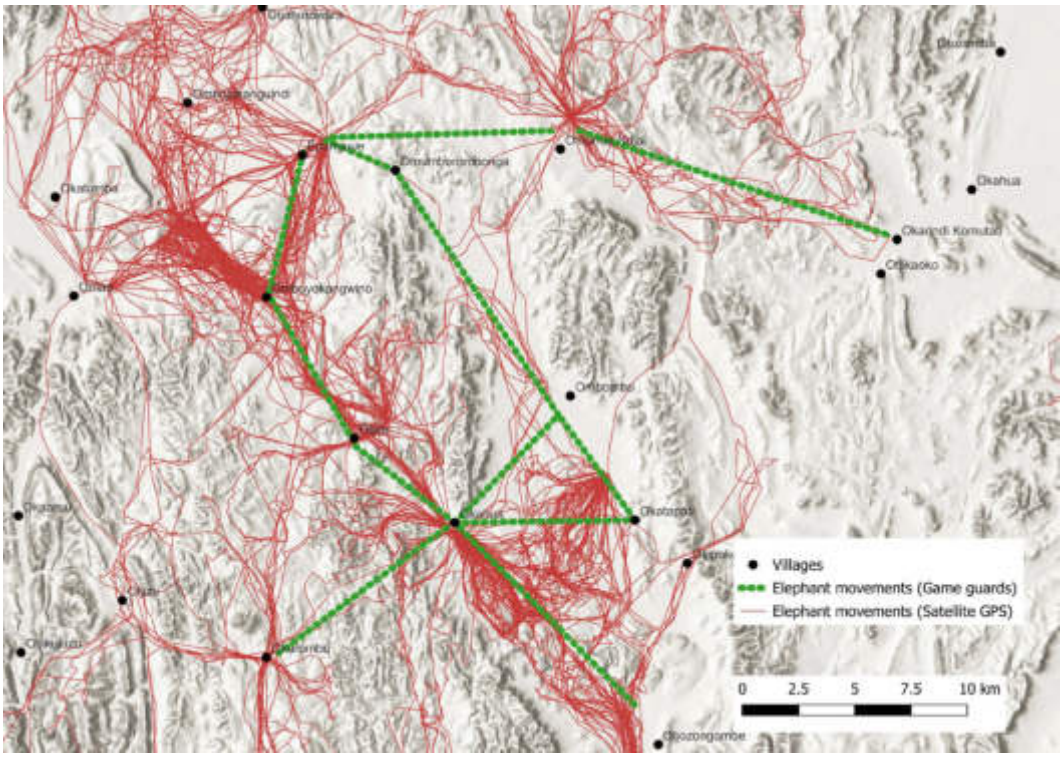


Figure 10. Elephant movement corridors comparing satellite tracking (red) to indigenous knowledge (green), as documented by Hauptfleisch and Wenborn (2025).

This method of comparing ILK with scientific findings to assess accuracy is used in many other studies as well and is particularly evident in the flora-related literature (See Section 3.4.2). However, an alternative and increasingly common approach is not to validate ILK using scientific frameworks and methodologies, but to connect

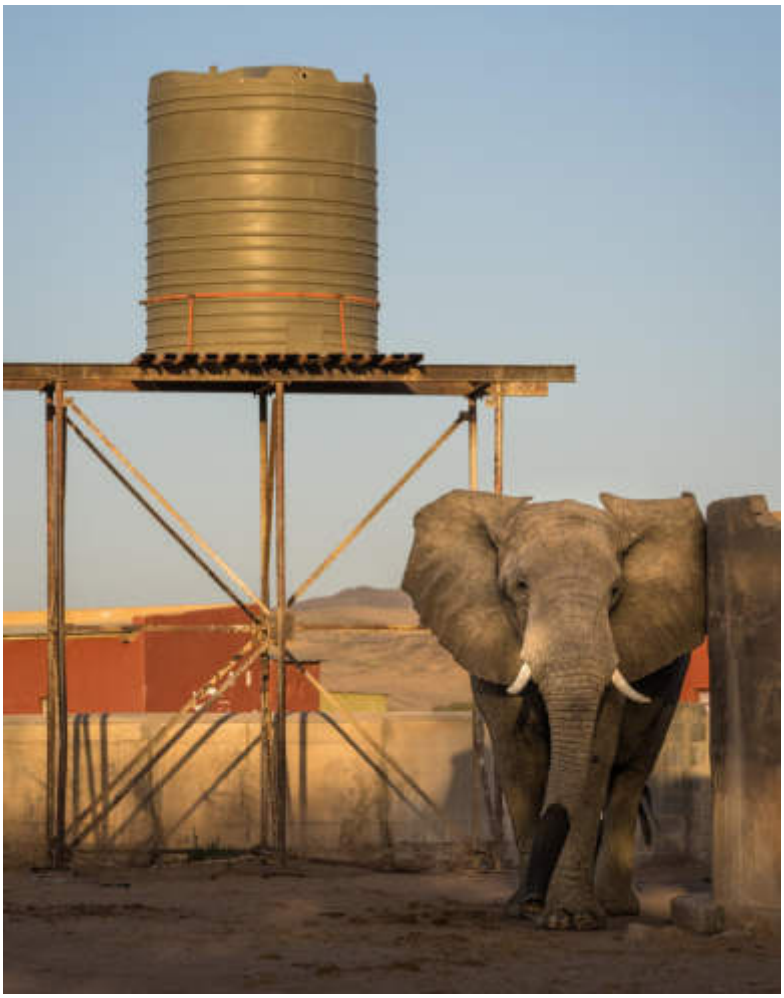
diverse knowledge systems for enhanced evidence and foster knowledge cross-fertilization. This is well elaborated in the multiple evidence base approach (Tengö et al., 2014), which has been adopted by international organisations and platforms, such as KMGBF, the Intergovernmental Science-Policy on Biodiversity and Ecosystem Services (IPBES) and UNESCO. Leveraging diverse knowledge systems, including ILK and science, aims is to generate a more comprehensive understanding of ecological dynamics. For example, Wenborn et al. (2025), working in the Kunene Region, used semi-structured interviews with community game guards to document elephant feeding behaviour. These local observations were complemented by a botanical survey of surrounding vegetation to assess resource availability. Rather than treating ILK as something to verify, the study positioned it as an essential source of ecological insight that enhanced the analysis.

Acknowledging the importance of ILK tracking system in biodiversity and wildlife conservation, in 2025, UNESCO launched an Indigenous-to-Indigenous cyber tracking peer-to-peer exchange between Jul'hoansi San of Namibia and Hadzabe of Tanzania, two hunter-gatherers' communities. Based on Jul'hoansi San Indigenous wildlife tracking knowledge, participants learned to use CyberTracker, an icon-based tool that blends traditional tracking knowledge with digital technology to record animal tracks, ecological signs, and biodiversity data. The training fostered intergenerational learning, reinforced Indigenous identity, and enabled elders to pass on language, traditions, and ecological knowledge to youth. Data collected supports biodiversity monitoring, endangered species protection, and anti-poaching efforts, while participants work toward international certification of competence. This initiative highlights Indigenous Peoples as custodians of natural resources and demonstrates how culturally grounded knowledge can advance sustainable development and conservation (UNESCO, 2025b)

Human Wildlife Conflict

HWC is currently a major concern in Namibia's rural landscape. Increasing incidences of HWC are a challenge to the success of Namibia's community-based conservation programmes. Innovative conservation approaches are becoming increasingly important, especially where communities are custodians of natural resources. As HWC is an issue communities have lived with for centuries, ILK has been critical for the ability to co-exist with wildlife. Despite this, there is very little documentation on ILK specifically related to HWC mitigation and human-wildlife-livestock co-existence.

The National Policy on HWCManagement (2018-2027) does not explicitly use the phrases "indigenous knowledge" or "traditional knowledge," nor does it set out a formal process for integrating customary ecological knowledge. However, it does promote community involvement, CBNRM approaches, use of local data and capacity building, which creates space for ILK to be used in practice even if it is not named or institutionalised in the text.



Picture: Depicting elephant-human wildlife interaction (© Marcus Westberg)

While the instances and effects of HWC in Namibia are rather well recorded – for instance via conservancies' Event Books, or in works such Khumalo and Yung (2015), ILK on HWC is much more sparsely documented (Smith, 2025). Moore (2009) appears to be one of the only studies currently published explicitly on ILK and HWC in Namibia. It examines the cultural and narrative dimensions of ILK in relation to human-elephant interactions. Focusing on Khwe communities in the Zambezi Region, the study explores how traditional knowledge, stories and everyday observations shape local understanding of elephant behaviour and conflict. Using a combination of qualitative methods, including formal and informal interviews, life histories, storytelling sessions and drawings by school children, Moore shows that knowledge of elephants and related conflicts is still embedded in community memory, even though it has been affected by historical and political disruption. The research highlights that Khwe trackers and elders retain detailed behavioural knowledge, such as the ability to interpret different elephant vocalisations and tracks and to identify signs of danger. Myths and origin stories surrounding elephants remain important as cultural reference points and continue to contain practical guidance for human–elephant coexistence. However, the depth and transmission

of this knowledge vary across locations and generations. The study argues that local knowledge has been eroded by several factors, including displacement during the war of independence, restrictions on elephant hunting, shifting land rights and changes in education systems that prioritised English over Indigenous languages. Moore concludes that ILK remains relevant for understanding and mitigating human–elephant conflict but also notes that community knowledge alone cannot address conflict in a context where elephant management is controlled by the state. Lendelvo et al. (2015) interviewed 51 commercial farmers and 48 farmers in communal areas living alongside the Etosha National Park in order to elicit their HWC mitigation strategies. While spoor, calls and sight are frequently used by all farmers for identifying potential dangers, practices to mitigate HWC vary widely between communal and commercial farmers. Without explicating specific practices or rituals, the authors find that communal farmers 'strategies include mainly the scaring off wildlife, including through noisemaking with drums or singing, kraaling livestock at dusk and herding them during the daytime and regular patrols. They also note that kraaling methods have evolved over time, shifting from the use of wooden poles alone to incorporating chicken mesh wire. Firearm use likewise differs. Communal farmers reported using firearm to scare off wildlife, whereas commercial farmers typically use guns only to deter wildlife. Although the study does not examine these practices in depth, it remains one of the few documented accounts of Indigenous HWC mitigation strategies. The strategies, as reported in the work, can be found in Table 3.

Table 3. Most common mechanisms used by farmers bordering Etosha National Park to manage HWC, as documented by Lendelvo et al. (2015)

Management action	Communal farmers %	Commercial farmers %
Scare-off wildlife	39	
Collect and kraal livestock	25	
Herd livestock	17	
Patrol farm camps and ENP fence	12	11
Trap, poison or kill predators		37
Maintain fences		20
Move to different grazing lands		8
No mechanism mentioned	7	24

Kansky and Kidd (2024) make the link between tolerance of wildlife (particularly wildlife causing HWC) and tangible and intangible benefits from wildlife (Figure 11).

They identified cultures and traditional practices underpinned by empathy towards wild animals, as well as ILK values, norms and habits as important in increasing tolerance towards damage and threats posed by animals to their livelihoods.

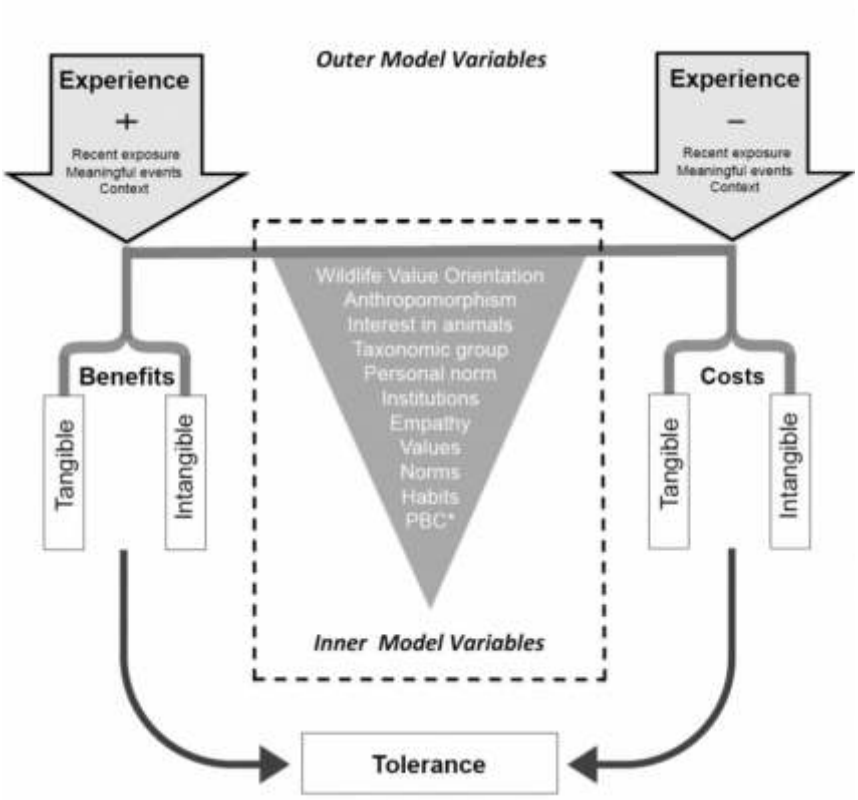


Figure 11. Wildlife Tolerance Model (WTM) as explicated by Kandy and Kidd (2024)

A PHD thesis on HWC and ILK is being written by Smith, as of 2025, and will greatly increase documentation on these practices and beliefs. Some initial findings are that elephants in the Kunene Region are important subjects of ILK in many respects. These include:

(i) Elephants as token animals (wise, majestic);
(ii) Elephant dung as medicine (also supported by attendees of Workshop 1 who stated that inhaling smoke from burned elephant dung helped treat Covid-19); and
(iii) Elephants as indicators of water.

ILK related to rhino was also identified by Smith. They were seen to be carrying messages from ancestors and often brought bad luck. Their meat is considered to have healing properties. Importantly there were no uses expressed for rhino horn.

It is noteworthy that very few of these beliefs and uses involve consumptive use of the animals.

Rangeland management

Community-based rangeland management in Namibia has been widely studied as a strategy to support pastoral livelihoods and sustain fragile ecosystems. However, the ILK documentation that guides these systems remains fragmented, and is often studied through scientific validation frameworks.

Coppock et al. (2022) evaluate a four-year programme designed to support community-based cattle and rangeland management. They found that most social and behavioural indicators improved, with eight out of thirteen showing positive change. Yet the picture is more nuanced when examining ecological and economic indicators: rangeland condition, cattle productivity, and household income were largely neutral or negative. This pattern illustrates a broader tendency in the literature: the success of community-based management is often measured against externally defined scientific criteria rather than through the lens of local priorities, adaptive strategies, or cultural values embedded in pastoral knowledge.

Perceptions of rangeland degradation provide further insight into community experiences and local interpretations of environmental change. Kahumba and Tefera (2023) examine how households in north-central Namibia perceive livestock management and constraints to production. Livestock are central to wealth, social status, and identity, yet communities face pressing challenges, including shrinking grazing lands, limited feed, water scarcity, and recurring droughts. Elderly respondents particularly identified overgrazing and climate variability as the main drivers of rangeland degradation, noting that these pressures have contributed to gradual declines in livestock numbers. While this work highlights that there is a wealth of local environmental understanding, it remains largely descriptive and does not systematically link traditional grazing strategies to rangeland management solutions.

Müller et al. (2007) took a more systems-oriented approach, modelling OvaHimba rangeland management to identify the variables that sustain ecological and livestock resilience under changing socio-economic conditions. Their stochastic model, drawing on earlier ethnographic work by Bolling (2000) and Behnke (1999)), shows that two strategies are central: resting dry-season pastures during the rainy season and expanding grazing areas during drought years. More specifically, herds graze near homesteads during the wet season and are moved to distant pastures during the dry season, leaving core grazing areas time to regenerate. While these practices reveal a nuanced understanding of the landscape, the evidence collected originally described behaviour from 1960–1995. This raises questions about the continuity of these strategies today, and whether the dated documentation is still relevant.

Indigenous and local knowledge and conservation management

While community conservation in Namibia is intended to draw on diverse ILK of biodiversity conservation and sustainable use of wild species, documentation of this knowledge is limited, and research indicates that ILK often plays a symbolic role rather than a decisive one in conservation management.

The development of the CBNRM Programme from the 1970's (Owen-Smith, 2011) was founded on ILK and associated sustainable wildlife use principles. Still today, the CBNRM Programme relies heavily on ILK. ILK contributes to CBNRM by informing:

(i) Wildlife tracking and monitoring: Traditional trackers and herders have deep knowledge of animal behaviour, migration routes, and ecosystem changes - crucial for wildlife management and quota setting:
(ii) Land use zoning: Traditional grazing systems and sacred sites often align with modern conservation zones; and
(iii) Fire and drought management: Local practices, such as controlled burning or shifting grazing, are based on intimate climate and vegetation knowledge.

Despite this, ILK and its function is not explicitly mentioned or documented in the CBNRM Programme.

Some academic works explicitly delve into how ILK and conservation management interact. Sullivan (1999) delves into the Damara practices related to food and honey gathering in southern Kunene. While these efforts are a form of documentation in themselves, and are described in the Section 3.4.2, they also aim to highlight which principles, knowledge and practices derived from Indigenous Peoples and local communities should be integrated in conservation policies. Firstly, the intricate ecological understanding of ecosystems, as illustrated by Damara practices with regards to seeds-ants interaction, is regarded as a critical learning for conservation works. Furthermore, Sullivan (1999) identifies that while local and scientific species classifications often align, certain distinctions arise that are meaningful only within the context of use, for instance, a single scientific species may be divided into two locally recognised types based on qualities relevant to harvesting or consumption. This observation remains high-level and in no way systematic but illustrates the potential value of ILK for local conservation management. Lastly, Sullivan argues that the conservancy model's strong focus on wildlife may inadvertently restrict people's broader engagement with their environment.

Complementing this, Newsham (2007) explores how ILK operates within Namibia's conservancy programme, focusing on the Tsiseb Conservancy. His research reveals a gap rhetoric and practice: while ILK is officially recognized as central to biodiversity management, in reality it occupies an ambivalent position. Definitions of "sustainability" and the terms of participation are largely shaped by external actors, such as government agencies, NGOs, and donors. Hence the conservancy approach, while supposedly placing Indigenous Peoples and local communities as the centre of decision-making, operates within externally defined frameworks, limiting Indigenous Peoples and local communities' agency.

While the above literature showcases some of the flaws of the current community conservation policy structure, Hoole and Berkes (2010) instead argue that the conservancy may be potential vector/route for Indigenous Peoples and local communities to increase their collective voices and reconnect to ancestral lands and lost ILK. They examine the relationship between Herero communities in Ehirovipuka Conservancy and the surrounding landscape. Their study explores how historical displacement from Etosha National Park led to a separation, or

"decoupling", between people and their ancestral land. Using a combination of surveys, interviews, transect walks, and participatory memory mapping with elders, they document how place names encode deep ecological and cultural meanings. The authors document names such as *Otjongejama* (place of lions) and *Okavao* (place of the shield), located within the now Etosha National Park, which express both environmental characteristics and cultural narratives tied to specific locations. The authors argue that the conservancy structure offers a means of "reconnecting" to ancestral land by enabling communities to re-engage and lobby through collective management. However, they also note that while the original displacement stemmed from colonial land policies rather than conservation per se, current park boundaries and management approaches continue to reinforce exclusion, generating local resentment toward the park.

Sindano et al. (2017) introduce a different yet complementary lens on ILK and conservation, focusing on spiritual and cultural dimensions of environmental protection, outside of the conservancy perspective. Based on ten interviews, observations, and focus group discussions, their qualitative study examines the concepts of *Ekongoro* and *Emumi*, which function as cultural mechanisms for environmental stewardship. *Ekongoro* is described as a non-human being resembling a giant snake with horn-like features, associated with the movement of water and symbolically linked to the rainbow. *Emumi*, by contrast, is depicted as a one-sided human-like figure with a single leg, arm, eye, and ear, said to inhabit forests. The fear and reverence associated with these beings act as powerful deterrents to overexploitation of wetlands and forests, contributing indirectly to their protection. Notably, the concept of *Ekongoro* has been incorporated into school curricula, reflecting an effort to bridge traditional ecological beliefs and formal environmental education. While Sindano et al. (2017) highlight the conservation value embedded in spiritual belief systems, the study's limited sample and lack of methodological depth restrict broader generalisation. Nonetheless, it underscores how ILK encompasses not only empirical ecological knowledge but also moral and cosmological frameworks that influence behaviour and environmental outcomes.

The value of ILK for environmental management, in particular in data-scarce contexts, has been explored in a participatory manner in two conservancies and community forests in Kavango: George Mukoya and Muduva Nyangana. Through a participatory approach, ILK was collected on environmental vulnerabilities, threats and related conservation strategies. The participants' knowledge and mapping proved to be in line with scientific assumptions. Authors argue for ILK to be embedded in environmental management not merely through community consultation, but through co-designing and co-production of knowledge. Authors explicitly recognize that the complexity of knowledge systems was not explored in its entirety, as the process only allowed for small elements to be extracted. They also recognise that existing power inequalities across communities (e.g., marginalisation San members) likely influenced the type of knowledge that was ultimately captured (Schick et al., 2018).

3.4.2 Flora

General plant use

Flora is the most extensively documented ecological component in Namibia particularly in Northern regions. However, at the national level the inclusion of ILK in academic and grey literature remains minimal, typically limited to the recording of vernacular plant names rather than broader cultural or practical knowledge. Major works providing an overview of biodiversity in Namibia include local names, sometimes systematically (Atlas of Namibia Team, 2022; Botanical Society of Namibia, n.d.; Curtis & Mannheimer, 2005; von Koenen, 2001) as well as some regional publications (Mannheimer, 2012). At the national level, only von Koenen (2001) systematically documents traditional uses, meanings or management of plant species, describing over 600 species, using knowledge from a range of traditional healers. However, von Koenen (2001) relies on data collected during the apartheid era, without appropriate FPIC engagement, raising concerns on the use of the resulting data.

Documentation of ILK of plants in the coastal regions is comparatively limited and often based on earlier ethnobotanical efforts. Studies include Van den Eynden et al. (1992) and Van Damme et al. (1992), which documented the ethnobotany of the Topnaar people along the lower Kuiseb River, with a focus on traditional plant uses adapted to hyper-arid environments. While valuable, these accounts are now dated and have not been systematically updated, reflecting a broader gap in contemporary research on Namibia's desert regions. Budack (1983), also provides details on the use of the !Nara plant by Topnaar communities, discussing its harvesting, symbolic meanings and consumption.

Picture: Den/ui hunters collecting berries (Grewia) (© Ben Begbie-Clench)

The general use of plants is also partly documented in other regions of Namibia. Several studies focus on specific regions, communities, or plant groups. The most dated piece is an Ethnobotany of the Kwanyama Ovambos (Rodin, 1985). Other works also include Cheikhyoussef and Embashu (2013), who document ILK of wild fruit trees in northern Namibia's Ohangwena and Oshikoto Regions. Through an ethnobotanical survey that combined structured interviews with 65 respondents and plant specimen collection, they examine 25 species used for food, medicine, and income. Species identified as most important for communities include brown ivory or bird plum (*Berchemia discolor*), makalani palm (*Hyphaene petersiana*), marula (*Sclerocarya birrea*), and jackal berry (*Diospyros mespiliformis*).

Leffers (2003) documents traditional plant uses among the Ju/'hoansi communities. The book, intended primarily for Ju/'hoansi teachers and students, draws on information gathered through extensive consultations with local plant users and was subsequently reviewed by botanical specialists. It outlines a wide range of plant applications, including in construction, cosmetics, cultural practices, tools, crafts, musical instruments, and leather tanning, and provides indigenous plant names alongside the descriptions of each species and its uses.

Medicinal plants

According to national records, approximately 2,400 traditional healers are officially registered under the National Eagle Traditional Healers Association (NETHA), though the true number of practitioners is likely higher (Cheikhyoussef et al., 2011). The widespread use of traditional medicine is reflected in the literature on ILK and flora, as the medicinal application of plants is a particularly prominent theme.

Between 2004 and 2005, the Multidisciplinary Research Centre (MRC) at UNAM undertook significant fieldwork in the Omusati, Omaheke, and Kavango Regions to document Indigenous technologies and medicinal plant knowledge. Using key informant interviews and snowball sampling, researchers collected a significant amount of data on medicinal plants. However, although these studies provided valuable initial insights, and documentation, the resulting data could not be retrieved. Additional unpublished studies and works were conducted by the MRC between 2011 and 2015, with results included below.

Apart from the above national-level initiative, the majority of the body of works on medicinal plants focus on localised case studies. Dan et al. (2010) for instance, focus on the San l th in Kavango West, and their use of medicinal plants. Through a combination of participant observation, structured and semi-structured interviews they provide a longlist of plants with medicinal uses important to the community. Interestingly, they were unable to botanically identify a few of the listed species. The uses of specific species are briefly described, with limited details, such as "*Naruba*, *//gam//gambe* and *tima* herbs are used to treat headaches by boiling the roots and drinking the infusion". Their uses are compared to the findings of Leffers (2003) and reveal some differences.

Chisembu and Heidimbi (2010) carried out an ethnobotanical survey in several locations in the Zambezi Region, documenting how local healers use a wide range of plant species to treat HIV/AIDS-related infections. Drawing on interviews with 14 traditional healers, they identified 71 plant species from 28 families, most commonly using leaves, bark, and roots, to manage illnesses such as herpes zoster, diarrhoea, malaria, and tuberculosis.

In a similar approach, combining questionnaires and interviews, but with a broader regional focus, Cheikhyousself et al. (2011) provide profile of the medicinal plant use and practices in Oshikoto. They find that 61 medicinal plant species are used for healing, with the greatest number of species being used to treat mental health condition, followed by treatments for skin conditions and external wounds. Trees are found to be the most commonly used (29 species), followed by herbs (5 species), shrubs (10 species) and climbers (4 species), for treating ailments such as leg and back pain, chickenpox, ear infections, sexually transmitted diseases, strokes, wounds, diarrhoea and skin disorders. They state that specific plants generate more consensus, on their efficacy, explicitly suggesting scientific validation as a future route.

Similarly, focusing on the Zambezi Region, Du Preez et al. (2011) conducted an ethnobotanical study across six constituencies interviewing 100 traditional healers and collecting 146 plant specimens for scientific identification. The research documented extensive use of leaves, bark, and roots to treat a wide range of ailments, with many healers using similar species across different areas. While the study confirmed the richness of local medicinal knowledge, it also noted challenges such as reluctance to share information, perhaps emphasising the need for enhanced knowledge sharing safeguards through FPIC and access and benefit sharing instruments.

In the Kavango East and West Regions, Cheikhyoussef et al. (2013) conducted 126 interviews were conducted and identified 174 plants. While they do not provide details on specific plants and uses, they note the range of diseases that are treated, and how mainly women healers are the ones to attend to gynaecological issues.

In the same region, Shirungu (2016) and Shirungu and Cheikhyoussef (2018) provide a detailed account of traditional healing practices for mental illness and the related use of medicinal plants. The detailed studies outline preparation techniques, differences between fresh and dried applications, and the use of various plant parts such as roots, leaves, and tubers. They include an inventory of plant species with local names and indicative recovery periods based on traditional beliefs. Data were collected through interviews and in-depth discussions with knowledge holders, with findings validated collaboratively to ensure accurate interpretation, an aspect of research practice that is rarely made explicit in the existing literature.

In Kunene, Cheikhyoussef et al. (2015) through structured questionnaires administered to 77 respondents, identified 199 medicinal plants that are used to treat various illness, either as standalone remedies or in combination. Plants are used mostly fresh, and the majority of healers report roots as the most used part.

In Hardap, du Preez et al. (2017) interviewed 100 healers, majority of whom were females. While specific species or diseases treated are not disclosed, the study provides a general overview of medicinal plant use. Leaves were identified as the most commonly used plant parts, usually in dried form, highlighting the wide variations in practices across regions.

Going beyond human health and showcasing another area of ILK, Chinsembu et al. (2014) explore the use of indigenous plants in livestock health management in Katima Mulilo and Onayena. From questionnaires and semi-structured interviews with 42 farmers, they report that 16 plants from 13 families are used to treat livestock disease such as skin rashes, diarrhoea, eye infections and wounds, using leaves.

Scientific validation and uses

A significant portion of the literature also examines the interface between ILK and scientific validation. A number of studies investigate the pharmacological efficacy of indigenous medicinal plants. These include research on treatments for HIV/AIDS (Chinsembu, 2015), malaria (Du Preez et al., 2015), cancer (Dushimemaria et al., 2015) and antimicrobial applications (Mumbengewi et al., 2015). Other research explores broader health benefits derived from indigenous plant use, specifically leafy vegetables (Mushabati et al., 2015). In studies where scientific validation is not the focus, authors also often call for it to take place (e.g. Dan et al. 2010; Cheikhyoussef et al. 2011), as an end in itself or as a means to ensure that Indigenous Peoples and local communities can benefit from any future marketed drug.

Beyond validation, Namibian ILK are also described useful for international scientific conservation efforts. Cunningham (1992), through the case study of Namibia, examines the role of ILK, in conserving species outside of their native environment. While the study does not specifically document detailed ILK, it indicates the type of information held by local communities that may be useful to ensure conservation success. Relying in secondary data collection, he indicates that Indigenous Peoples and local communities can identify relevant variations within specific plant species, for instance“ KwaNyama-speaking farmers in Namibia distinguish and can name 6 different varieties of Cucurbitaceae (*Citlullus lanatus*), based on qualities of fruit size, taste, skin colour, seed colour or whether or not the seed margins are ridged,” or plants toxicity and/or medicinal values and habitats. Verlinden and Dayot (2005) analyse local land classification knowledge in Namibia’s north-central regions, comparing the accuracy of indigenous land units with conventional vegetation analysis. They provide a description of indigenous land units and the criteria used by Indigenous Peoples and local communities to identify them, and find significant overlap between Indigenous and scientific classifications, with various degrees of accuracy. Both Cunningham (1992) and Verlinden and Dayot (2005) suggest that science can complement rather than replace or verify environmental classifications, as the interweaving of the two system leads to a more complex, but comprehensive understanding of environmental systems.

Specie-centric and practice-centric studies

Another, less widespread angle adopted by academic and grey literature is a focus on the use of a specific species, or practice among one or several Indigenous Peoples and local communities. Lisao et al. (2017) document traditional uses of baobab (*Adansonia digitata*) among several groups in Northern Namibia: Herero, Ovambo, San and Masubiya. Data was collected through a semi-structured questionnaire, administered through interviews completed by 64 respondents, selected around baobab clusters in 4 regions. The traditional uses, values and "baobab population dynamics" were documented, highlighting the role of this species beyond spirituality, food and medicine provision – as communities use it for livestock feed and fodder. It was noted that certain medicinal practices were not shared with the researcher as they were considered secret knowledge for the community. Some discrepancy between cultural groups was highlighted, with Ovambo communities using more baobab products than other groups, showcasing the importance of studying uses across groups.

Munzer and Simon (2009) look into the use rights surrounding ILK of biodiversity for a specific plant, *hoodia* (locally known a bushman's hat), and the San community, across various countries indirectly delving into some of its traditional uses for medicine, emergency source of food, with preparation and harvesting practices.

Picture: A baobab tree in Kwandu conservancy, Zambezi Region (© Marcus Westberg)

Nakapipi-Amakali (2010) delves into the practices and uses of dwarf sage (*Sagittaria subulate*) in Oshikoto and Khomas. Interviews with five practitioners and eight beneficiaries revealed that the plant is used in treating of wounds such as shingles. The preparation steps, the plant parts used, and the treatment procedures are explained. Practices can vary across healers. Perspectives of both healers and patients were collected and are distinct.

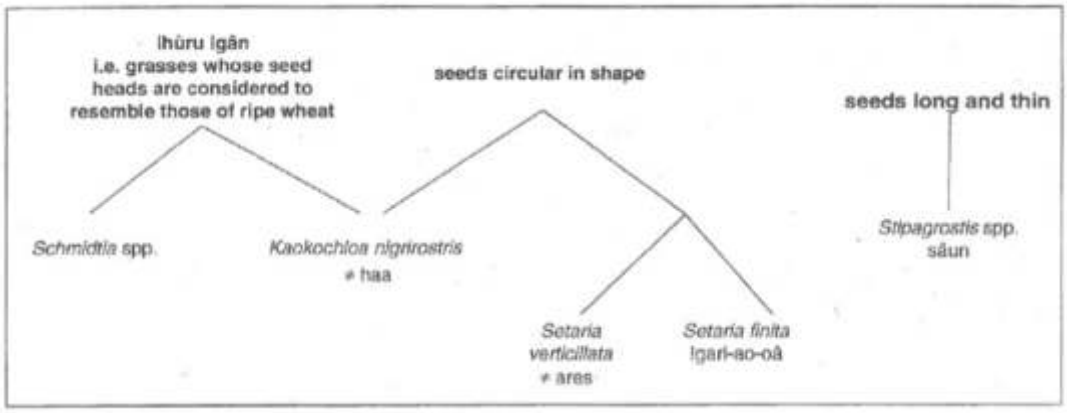


Figure 12. Damara classification of some species of edible grass seeds as documented by Sullivan et al. (1999)

Drawing on two years of anthropological fieldwork, Sullivan (1999) documents seed collection methods and honey gathering practices. She discusses a variety of local grasses, each identified by distinct names and preparation methods, and describes how particular seeds are selected. She provides details on how seeds are collected from harvester ant nests, and harvesting is informed by a nuanced understanding of the interconnections between plants and ants. This includes recognising differences in nest size and type, which indicate seed availability, and observing guidelines such as leaving enough seeds for ants and maintaining silence during collection to avoid disturbance. Honey-gathering practices and stories surrounding honey production are similarly grounded in environmental awareness, reflecting a system of knowledge that integrates ecological observation with cultural practice. Results are documented through a comprehensive table and simplified genealogy/ understanding of specie classification.

Table 4. Examples of seeds collected from harvester ant nests, documented in Sullivan et al. (1999)

Grass species	Damara name and ethnoecological information	Additional literature references
Aristida cf. *effusa*	Both the seeds and the plant are called '*ǂgaebiburu* ≠ *gabe*'. This species is one of a generic class of grasses or '*ǂgân*' called '*tĩnki*' which has awns which are not hairy or feathery like those of *Stipagrostis* spp. (classed as '*ǃhaburo ǂgân*', *vide infra*) The name '*ǂgaebiburu* ≠ *gabe*' describes the difficulty of preparing these seeds before cooking; '*buru*' refers to the process of winnowing and '≠ *gabe*' refers to putting the seeds into the ≠ *goub* or winnowing bowl.	In Pisani (1978), Schultze (1907) is recorded as asserting that seeds from *Aristida* spp. are collected from ants' nests and usually consumed with milk.
Chloris virgata	This species is called '*nanubé*' and its seeds are mixed with *sdun* in harvester ant nests and consumed with *sdun* as a consequence. This species has a terminal raceme and is therefore recognised as a '≠ *hara* ≠ *gai*' type of grass, literally translated as 'foot at the end'.	
Danthoniopsis ramosa (= *Loudetia ramosa*)	The similar species *Danthoniopsis dinteri* is called '≠ *namiti*' from which the edible seeds are collected directly from the plant. When 'cleaned' these are reportedly white like '≠ *u sdun*'.	*Loudetia ramosa* is referred to as "≠ *u-sati*", collected from harvester ant nests, by State Museum (n.d.).
Enneapogon desvauxii	The seeds and plant are referred to as '≠ *khari* ǃ*nabise*', i.e. 'small' ǃ*nabise*. This distinguishes it from the larger '*ǃnabise*', i.e. *Munelytrum leuderitzianum*, to which it is considered similar. Also referred to as '≠ *khari* ǃ*hiru*' (*vide* notes for *Kaokochloa nigrirostris*). Like *Chloris virgata*, the seeds are mixed with *sdun* in harvester ant nests and consumed with *sdun* as a consequence.	Eiseb *et al.* (1991: 21) record the name "ǂ*gari-i*" for this species.

Non-Timber Forest Products

Non-timber forest products (NTFPs) also feature in recent scholarship, particularly regarding their role in rural livelihoods. Nakanye (2024), for example, examines the socio-economic importance of NTFPs within selected Namibian communities, highlighting their continued relevance for subsistence and income generation. Cole (2014) provides some of a very comprehensive overview of local plant and their uses in the book "Indigenous Plant Products in Namibia". Originally part of an initiative to increase revenue for Indigenous Peoples and local communities through their indigenous products, the book provides valuable documentation of ILK. The book describes not only a scientific description of a range species but their history in terms of their use by communities, harvesting or cultivating processes as well as their current state in value chain, challenges and opportunities. Examined species include !Nara *(Acanthosicyos horridus)*, devil's claw *(Harpagophytum procumbens and zeyherii)*, marula *(Sclerocarya birrea)*, sour plum (*Ximenia caffra and Ximenia americana)*, resin from *Commiphora ssp*, mopane *(Colophospermum mopane)*, bushmen's candle (*Sarcocaulon marlothii)*, hoodia (*Hoodia gordonii*) and marama beans (*Tylosema esculentum*). The book also outlines certain elements of folklore, such as songs, provided in local language and translated in English (see Figure 13). No spiritual or sacred practices are mentioned in the publication.

Topnaar praise song for !nara

!Gubu ≠ūse
You round food

//khuxa /khase
with many thorns

≠gui samese
you many-breasted

≠Aoni-/gōan di gai-gai aose
foster-mother of the ≠Aoni children

!nūse ta ga
even if I am far away

xawe ta nī ≠eisi
I will think of you

ti //naon ≠ūse
you food of my ancestors

/urusi ta tite
I will never forget you

sas khemi ge deisi khois a /khai
there is no wet-nurse like you

Figure 13. Topnaar praise song for !Nara as documented in Cole (2014)

Picture: Drying sliced devil's claw (© Dave Cole)

3.4.3. Disaster Risk Reduction, Climate Change Adaptation and Conservation

As a country with high vulnerability to disaster, including floods and droughts, disaster risk reduction and climate change adaptation are important topics. Global evidence shows that ILK can be a particularly valuable source of knowledge in this context (Dorji et al., 2024). However, few academic papers document these practices in Namibia. The differentiated vulnerability to climate change among different communities has been studied through a gendered (Angula & Menjono, 2014; Siyambango et al., 2015) and household characteristics (Angula & Kaundjua, 2016) lens. These studies include a few elements on Indigenous practices, such as the movement of OvaHimba communities with their livestock in Kunene to ensure long-term grazing productivity even in times of drought (Siyambango et al., 2015), but they largely focus on the consequences of climate change.

When it comes to specific disasters, the limited existing documentation mainly focuses on indigenous and local coping strategies for floods in northern Namibia (Hooli, 2016; Mbukusa, 2015; Merron & Hocutt, 2025). Studies have also explored the agro-ecological knowledge of Ovambo farmers in north-central Namibia, highlighting how this knowledge supports adaptive capacity in the face of environmental change (Newsham & Thomas, 2011).

Ofoegbu et al. (2018) discuss ILK in Namibia within the broader context of how climate adaptation knowledge is produced, shared, and used among diverse actors. The study, based on fieldwork in the Omusati Region, finds that although ILK play a significant role in how communities understand and respond to climate variability, these are insufficiently integrated into national adaptation frameworks. Most adaptation knowledge in Namibia is generated by government agencies and international partners through top-down processes, with little collaboration with local communities or Traditional Authorities. The authors note that this creates a gap between scientific knowledge and community-level practices, contributing to low trust in scientific information and weak uptake of adaptation measures. In many rural areas, especially among elders, people rely on ILK, such as traditional weather prediction, because national forecasts are too general or mismatched to local contexts.

3.4.4. Biocultural Community Protocols and Co-creation Efforts

BCPs are more detailed than other forms of documentation explored above, as they move away from a species or ecosystem focus, instead articulating more general belief systems of specific communities. They explicitly aim to "articulate community-determined values, procedures and priorities. They set out rights and responsibilities under customary, state and international law as the basis for engaging with external bodies such as governments, companies, academics and NGOs" (Natural Justice, n.d.). These protocols are co-developed with communities, over lengthy consultations, with custodians of the process often being community

members instead of external researchers. Each process is distinct and shaped by the community itself, adhering only to broad guiding principles.

In 2014, the Khwe community of Bwabwata National Park developed Namibia's first biocultural community protocol, with assistance from the MEFT and Natural Justice. The protocol articulates the Khwe's values, priorities, and procedures for decision-making around their resources, setting out their rights and responsibilities under customary, state, and international laws. Lassen et al. (2018) documented challenges the BCP faced in acceptance and implementation, which have meant this BCP has not yet been adopted. Some of these issues stem from the complications of a community living within the National Park (which is a State land) as well as highly political relations with neighbouring groups. However, the process is ongoing and is expected to be resolved with the acceptance of the BCP in the near future.

The OvaHerero and the OvaHimba of Namibia and Angola also participated in a BCP process. The resulting document written in the first person, provides an overview of the OvaHerero/OvaHimba territory, connection with landscape features, way of life, relationships with nature, governance systems as well as challenges, threats and solutions to the continuation of their cultural practices (OvaHerero of the Kaokoland in Namibia and Angola, 2024). The core of the BCP does not delve into details on ILK of biodiversity, broadly mentioning the categories of that knowledge – "location and importance of sacred sites, the properties, uses and location of natural resources such as herbs, plants, wild fruits and vegetables, and the wisdom to predict weather and future events through reading animal intestines". Highlighting use of their knowledge, the BCP indicates: "We use our traditional knowledge to direct how we rotate cattle grazing, use water, hunt game and use plants for medicinal and other purposes". Also, information on customs and ceremony related to nature are described in high-level terms, through general principles, such as requesting the permission of ancestors before drilling new boreholes.

Furthermore, the annexure provides comprehensive tables, listing and describing practices on various topics, including those "that relate to nature and ways of being in the world". Each practice's name, description, specific community, location, custodian and risks are identified. These are mainly focused on mountains and locations of importance on both sides of the national border. An extract of this table (5) is provided. A longlist of traditional knowledge about plants, and animals is also provided, in a high-level table. The table only includes, traditional, common and scientific names of the species, and a broad consideration of its uses, for instance "medicinal" or "wood crafting and traditional practices". While over 60 plants are mentioned, only 5 animal species are described in the table, livestock (sheep, cattle, goats) and kudu and pangolins. An extract of this table (6) is provided (OvaHerero of the Kaokoland in Namibia and Angola, 2024). The BCP does not aim to be completely comprehensive but instead serve as a basis for advocacy tool for the community to solidify its rights to land and resources. A BCP process is also underway with the Ju/'hoansi community from Nyae Nyae. Some information on the drafting process of the OvaHerero of the Kaokoland BCP is provided in the box below.

Picture: Community workshop for the BCP of the OvaHerero of Kaokoland (© Natural Justice)

Development of the OvaHerero Bio-Cultural Protocol

The OvaHerero Bio-Cultural Protocol was developed among pastoralist communities in Namibia and Angola. With support from International Rivers and Natural Justice, guided by the principles of FPIC and aligned with the UNESCO 2005 Convention on the Protection and Promotion of the Diversity of Cultural Expressions, the BCP defines community-based rights to land, culture, and knowledge.

The participatory process engaged 150 villages in Kunene Region, Namibia, and 6 in Cunene Province, Angola, including 84 traditional leaders in Namibia and 15 in Angola. Community workshops used oral histories, mapping, seasonal calendars and group discussions with chiefs, elders, women, youth, and Conservancies. A legal expert ensured compliance with national and international frameworks, including the Nagoya Protocol, translating customary practices into legally recognized terms. Five verification workshops across Kunene validated findings in OtjiHerero, ensuring linguistic and cultural accuracy, and all narratives were translated collaboratively, protecting sensitive knowledge through FPIC.

The BCP process coordinator, Alphons Koruhama, is from the OvaHimba community and described some of the challenges: “Bringing communities together was not always easy, as many live in remote areas and follow their own schedules tied to cultural and social events. In some cases, we had to wait to hold data collection workshops. This required patience and adaptability.” Data interpretation was complicated by the fact that communities expressed their knowledge differently. Gathering data on sacred sites was particularly sensitive: “Traditionally, sacred matters are not discussed openly. At first some feared that speaking about them would anger the ancestors, but then we discussed importance of documenting this knowledge and, in some areas, asked those who manage the Holy Fire to seek ancestral permission before we continued.”

Integrating different legal frameworks into the BCP required merging traditional customary law with Namibian national law, as well as regional and international legal instruments. Alphons explained: "This process took time and careful explanation to ensure that communities understood and agreed with how these legal elements were being combined. It was important that the communities themselves recognized the BCP as their own legal and cultural document, not something imposed from outside."

There were practical lessons, for example funders initially asked why it was necessary to buy goats or sheep for meetings, but Alphons explained: "Sharing food is part of our culture and helps bring people together. When we provided meat, participation increased significantly, and people stayed engaged throughout the sessions."

Beyond the creation of the BCP, the outcomes included strengthened community awareness of cultural and legal rights, enhanced community cross-border collaboration and preservation of IKS for future generations.

Table 5. Extract from "Knowledge and practices that relate to nature and ways of being in the world" as documented in OvaHerero of the Kaokoland in Namibia and Anglola (2024)

OtjiHerero Name	Common Name	Scientific Name	Function and use
Okahunokondu	Potato-bush	*Phyllanthus reticulatus*	Medicinal.
Omutendereti	Shepherds Tree	*Boscia albitrunca*	Drought- resistance, shade and medicinal.
Omungwati	Wild Tamarisk	*Tamarix usneoides*	Erosion control, habitat for various species and medicinal.

Table 6. Extract from "Traditional Knowledge: Plants and Trees", as documented in Ovaherero of the Kaokoland in Namibia and Anglola

Name of the feature	Description and significance	Community concerned	Location	Custodian/ Knowledge bearer	Risks &Threats
Mountains					
5.1 Okarundu Kambeti mountain on the Angola side by Otjitaazu.	It is our traditional mountain. All of us as Herero are from there. That is where our ancestors align. It is where the Herero's separate and also our different languages. Before we separated, we were all the same. This is where we go for cultural ceremonies and traditional commemoration. On the mountain we go to a Mopane tree to collect its leaves. The leaves are placed in orunyara. The ancestors are then called. From there we kneel down and start crawling towards the holy fire. The leaves and water are placed in your mouth and spat it out. The elder person who went with them on the mountain will place it on the forehead of the father. The mountain connects us to our ancestors and forefathers and provides us with direction. It is where we get our inspiration. There are certain taboos that we are not allowed to do there e.g. No gunshots, No game hunting.	OvaHerero community	Ruacana borders Namibia and Angola	The elders of the OvaHerero	We are fighting over the mountain with other groups. There is an Ovambo tradition of using force to claim our mountain. We can access it currently, but there are some forces. They opened a dam by the mountain and there is now water over our graveyards. We are now unable to visit our graves.

Beyond BCPs, a few additional initiatives have focused on co-creating ILK documentation, according to the requirements of Indigenous Peoples and local communities. For instance, a research team from NUST has built an OvaHimba digital repository. This repository's explicit aim is to preserve customs and introduce OvaHimba culture to external audiences and was entirely co-designed with community members. The repository includes content on practices, narrated in local language around 3 categories of content: "Ovandu (people), Okuti (the environment) and Ovinamuinyo (livestock)". Content within the repository is curated, verified and narrated by the community, in a clear co-creation and community-ownership model (Mbinge et al., 2025). The NUST team collaborated with OvaHimba and San communities to develop interactive virtual reality experiences that allow users to engage with cultural practices such as hunting or housebuilding, further expanding the accessibility and preservation of this knowledge. (Mbinge et al., 2025). In addition, the NUST team collaborated with OvaHimba and San communities to develop interactive virtual reality experiences that allow users to engage with cultural practices such as hunting or housebuilding, further expanding the accessibility and preservation of this knowledge.

3.5. Reflections from the Current Literature

Common methodologies and their limits

The above review of academic and grey literature shows a consistent pattern in the methods and approaches used to document ILK in Namibia. The predominant ILK data collection methods are informant interviews, structured or semi-structured questionnaires – typically targeting community elders and often supplemented by focus group discussions and participant observations. Co-creation approaches or community led-research are still rarely used, despite the growing global momentum towards participatory and Indigenous-led approaches, such as multiple evidence base approach, walking workshops, participatory mapping, community-based monitoring, ILK dialogue workshops, Indigenous future-thinking, among others.

The duration of studies is highly variable, from multi-year studies, and short-term, to one-off field visits, with no pronounced dominance of one or the other. Despite these efforts, statistical representativity of samples or the statistical significance of results are most often not mentioned and studies tend to have limited temporal and geographical scope. The limited geographical scope does not prevent authors from often extrapolating findings to an entire cultural group, foregoing any intra-cultural variation. Even if the findings are indeed applicable to a larger group, the assumptions and reasoning of the extrapolation are not explicitly acknowledged. There are only a few instances where the entirety of an Indigenous/local community group is considered through the sample, with specific considerations for geographical discrepancies (Munzer & Simon, 2009; OvaHerero of the Kaokoland in Namibia and Angola, 2024).

Researcher positionality

While several recent studies have explicitly leveraged community researchers, community-member authorship is still limited, with only a handful of examples (Mbinge et al., 2025; OvaHerero of the Kaokoland in Namibia and Angola, 2024) Beyond authorship, the role of local actors in facilitating research is inconsistently described. While some studies specify their reliance on local enumerators and translators, some works also describes community members as having "assisted", with little detail on how their involvement shaped data collection and interpretation. This lack of acknowledgement of community knowledge holders not only diminishes their intellectual contributions to researchbut also reinforces existing power imbalances between science and ILK by further suppressing ILK systems.

Studies' objectives and audience

While the importance of documentation for safeguarding is sometimes acknowledged, in the main bodies of literature, the studies' objectives show an overall trend: research is not conducted with the goal of preserving ILK for future community use. Instead, studies often aim to validate ILK through scientific methods, explore avenues for Indigenous and local communities' monetary benefits, highlight traditional practices relevant for policies or conservation management, or increase the understanding of a particular cultural group for neophytes. As indicated earlier, research agendas and methods appear to be largely externally determined, with very limited co-design or collaboration with ILK holders, apart from a few examples (Mbinge et al., 2025; OvaHerero of the Kaokoland in Namibia and Angola, 2024).

Additionally, most publications do not specify whether feedback or final materials from the research have been shared back with communities. The approach of documenting ILK mainly when it is relevant for external interests is often referred to as the "utility" or "application" of ILK (McGregor, 2021). As McGregor (2021) notes, "Indigenous knowledge to date has been seen primarily by external agencies as having value and utility only when it serves these other purposes". Consequently, the target audience for most ILK documentation efforts appear to be mainly external to Indigenous Peoples and local communities. During the National ILK Outlook consultation workshop with selected Indigenous Peoples and local communities held in September 2025, participants reported little to no awareness of such documentation initiatives. The limited awareness of academic and grey literature on ILK underscores that such materials were primarily designed for external audiences rather than for Indigenous Peoples and local communities themselves.

Temporality

From a temporal perspective, the number of ILK-focused publications in Namibia has increased steadily and has been highest in the last decade, as shown previously in Figure 2. However, given the substantial rise in overall academic output in recent decades, this growth rate remains comparatively low (Fire & Guestrin, 2019).

ILK categorisation

In many cases, ILK is selectively extracted and categorised. This is visible through the results' presentation, most often summarized through a table, greatly simplifying potentially very complex practices. The use of drawings or other visual representations is very minimal. This selective and utilitarian treatment has been described as "cherry picking" and the "scientization" of ILK (McGregor, 2021). For instance, specific species are often studied in isolation and biomes independently examined. The interactions constituting a comprehensive ILK rather than a superposition of elements is often overlooked. As a result, ILK is often presented in a somewhat de-contextualised manner, focusing on several elements rather than its place within a comprehensive ILK system.

Free, Prior and Informed Consent

It must be acknowledged that early literature on ILK does not explicitly follow procedures on FPIC that were put in place much later, as stated in the introduction. Hence, the dissemination of results from earlier works needs to be conducted carefully, as information may have been extracted without appropriate processes and agreement from knowledge-holders. While recent works tend to include explicit mention of FPIC adherence, this practice is not applied systematically.

3.6. Other forms of Integration and Documentation

ILK is known to be mostly place-based and often orally inherited and to come in different shapes and forms, including stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws and local language. While a substantial part of the ILK around biodiversity in Namibia is not documented in a written way, it may be practiced, sung, danced, painted, carved, chanted and performed and integrated in other settings than the academic one.

3.6.1. Education System

While Namibia's education system acknowledges ILK, mainstreaming has yet to be realised. The National Environmental Education and Education for Sustainable Development Policy requires that learning support materials be developed "in all local languages," remain "cognizant of Indigenous environmental/ecological knowledge," and draw on "local sustainability examples," ensuring ILK is preserved and taught through curricula and resources (MEFT, 2019). The policy further highlights the need for contextualised pedagogical innovations that respond to specific learning environments and student needs and points to best practices such as EduVentures' Ombombo Mobile Classroom, which integrates heritage, culture and climate change into education. In addition, the National Environmental Education and Education for Sustainable Development Strategy and Action Plan 2022–2026 operationalizes this commitment by listing "Promote Indigenous Knowledge System" as an activity

under Policy Action Area number 5 (Promotion of Research, Innovation and Centres of Expertise) (MEFT, 2022).

Namibia also has practical experiences of ILK integration in schools through the Traditional Life Skills Project (TLSP) in the Karas Region. In this initiative, Nama elders and parents taught children traditional handicrafts, agricultural techniques, and medicinal knowledge as extracurricular activities in schools. The project was found to strengthen intergenerational communication, reduce discipline problems, and provide children with practical skills and confidence. It also contributed to cultural revitalisation, such as the renewed use of traditional Nama dresses and the transmission of knowledge on indigenous plants and medicines. Despite challenges of sustainability and uneven outcomes between communities, the TLSP demonstrated that ILK can enrich the education system by bridging schools and communities (Klein, 2011).

Sheya (2014) found that while teachers and communities generally support the inclusion of ILK in environmental education, the curriculum tends to "ignore and systematically undermine Indigenous knowledge as a potential source of knowledge for development". Instead, it often reinforces western values at the expense of local knowledge. The study further emphasized that although ILK is expressed in "songs, folklore, proverbs, dances, myths, cultural values, beliefs, rituals, community laws, local language, agricultural practices, and species knowledge", these dimensions are rarely given space in mainstream schooling. Teachers also face challenges in combining ILK with science due to curriculum design and pedagogical limitations. At the same time, Sheya argues that the recognition of ILK could "enrich the current environmental education programme and complement the strong subject-based focus of the empirical sciences", pointing to significant opportunities for deeper integration

3.6.2. Museums, Learning and Sharing Centers

Life in Namibia in the past has been and partly is deeply connected to the land and the natural resources. Therefore, it is no surprise that many of Namibia's 30 museums recognize ILK and biodiversity. In addition, other education centers offer learning opportunities and sharing information and experiences on ILK, partly for tourism but also for educational purposes.

National Museum of Namibia

The National Museum of Namibia is Namibia's oldest museum and was established by the imperial German administration in 1907. It is a historical and zoological museum in Windhoek, which manages and stores numerous national collections, including archaeological, anthropological, historical, and zoological artefacts. Additionally, the museum facilitates research on Namibia's national heritage through national and international collaborative projects. The National Museum of Namibia also plays a vital role in educating schools, universities, and the public. It offers various

on-site and outreach events and publications and have an affiliated organization, that provides for events to engage youth to actively participate in collecting data of real scientific value through hands-on learning activities, deepening the collective understanding of its natural and cultural heritage.

Zambezi Museum

The Zambezi Museum is located in Katima Mulilo and is at the heart of the Kavango-Zambezi Transfrontier Conservation Area. The Museum focuses on the environmental difficulties that face communities living in the Zambezi Region. The region has a complex history and showcases the way in which the landscape reflects the memories of the people who live here and the ways they have managed the environment. The museum also shows the ways in which people are developing strategies to co-habit with wildlife, prevent deforestation, manage fish stocks and cope with climate change. The museum aims to be an "eco-museum" and to develop into Namibia's first "Green Museum" (Museum Association of Namibia, n.d.).

Swakopmund Museum

The Swakopmund Museum is a privately-run museum whose exhibits include indigenous plants, animals, minerals and archaeological in Namibia, which give an insight into the culture and ILK on biodiversity, among others. It accommodates the Sam Cohen Library and Archives, which is home to a library on historical books, photos, travel reports and dictionaries in various national languages.

Living cultural museums

There are seven living culture museums - Ju/'hoansi (with two museums), Khwe, Mafwe, Mbunza, OvaHimba and Damara in Namibia. Their objectives include promoting the conservation and transfer of traditional culture, creation of a source of income in local communities and development of cultural and intercultural educational institutions. The relevance of each living culture museum in the context of ILK and biodiversity conservation is elaborated below.

The Ju/'Hoansi-San Living Museum, located near Grashoek in the Omaheke Region, is Namibia's first living museum and a model for community-led cultural preservation. Visitors learn directly from Ju/'Hoansi knowledge holders through interactive demonstrations of hunting, tracking, foraging, food preparation, and plant use. These practices keep ecological knowledge alive and relevant to contemporary livelihoods while showcasing detailed understanding of wildlife behaviour, edible plants, and sustainable harvesting practices.

Little Hunter's Living Museum is located north of Tsumkwe in the Nyae Nyae Conservancy, it is a community led cultural initiative of the Ju/'Hoansi-San that focuses specifically on traditional hunting culture and bush survival skills including

hunting techniques, bow-and-arrow making, snare setting, fire making, and the gathering of bush foods. Visitors are guided through a reconstructed village where elders, women, and youth share knowledge about survival skills, customs, and daily life in the Kalahari.

The Khwe Living Museum, located in the Bwabwata National Park area, offers insights into the ancient hunter-gatherer traditions of the Khwe San. Set in a reconstructed traditional village, the museum highlights the Khwe's deep ecological knowledge of woodland ecosystems, wildlife tracking, and plant-based medicine. Through storytelling, fire-making, and craft demonstrations, the museum preserves endangered knowledge systems while educating visitors about the close relationship between people and their natural environment. There are smaller alternatives to the Khwe Living Museum operating independently in Chetto and Bwabwata villages.

The Mafwe Living Museum near Kongola in the Zambezi Region illustrates the traditional lifestyle of the Mafwe people through demonstrations of fishing, craft-making, and dance. These activities reflect Indigenous ecological knowledge of riverine resources and seasonal cycles, providing both cultural and biodiversity education opportunities.

The Mbunza Living Museum, situated at Samsitu Lake, west of Rundu, is a traditional village of the Kavango built entirely from natural materials. Performers wear clothing made from self-tanned leather refined with Manketti-nut oil, a style that was reconstructed from old photographs. It presents pre-colonial Kavango culture through live demonstrations in an open-air setting. The museum offers visitors an authentic, detailed insight into traditional lifeways and material culture as part of Namibia's Living Museums network.

The OvaHimba Living Museum is located between Opuwo and Epupa Falls in the Kunene Region. The museum functions both as a traditional school for guests and for local children, while generating income for the community. It features a large homestead where daily routines such as food preparation, leather tanning, forging, pottery, and singing are demonstrated. Visitors learn about the Holy Fire, the significance of cattle, and other key elements of OvaHimba spirituality and social life. Through these activities, the museum preserves and shares Indigenous knowledge related to pastoralism, craftsmanship, and environmental adaptation in Namibia's arid northwest.

The Damara Living Museum, located near Twyfelfontein, is the first and only traditional Damara cultural project in Namibia. As one of Namibia's oldest nations, the Damara traditionally practiced a mixed livelihood system of hunting, gathering, and herding cattle, goats, and sheep. Within the museum, community members have reconstructed aspects of this "lost culture" through demonstrations of traditional skills, daily routines, and social customs.

3.6.3. Ju/'hoan San Tracker School

The Ju/'hoan San Tracker School was established through collaboration between the Ju/'hoansi Trackers Association, a community organisation, and CyberTracker, an NGO founded by Louis Liebenberg that developed CyberTracker software for mobile data capture and visualization in conservation. The Tracker School began in 2017, with the Association formally established in 2019. The school aims to reduce the decline in traditional tracking expertise, with estimates that 90% of elders with exceptional tracking skills have died over recent decades, with only 15 hunters actively hunting with bow-and-arrow at a highly skilled in Nyae Nyae by 2018. Nyae Nyae Conservancy remains the only area in Namibia, and one of few in Africa, where hunter-gatherers can legally hunt with traditional methods.

The certification framework, which aims to certify San as "Master Trackers", builds on earlier initiatives over the last two decades that have assisted the community and Cybertracker to develop assessment and certification systems for traditional tracking knowledge. The school has documented 45 experienced trackers in Nyae Nyae and issued 10 Master Tracker certificates. The school's objectives include preserving traditional hunting and gathering practices while creating employment opportunities in wildlife monitoring, conservation management, and training for both San youth and learning opportunities with non-San trackers, locally and internationally. The approach attempts to sustain traditional skills through their application in contemporary conservation approaches (Cybertracker, n.d.).

3.6.4. Ancient San Skills Academy

Established in August 2013, the Ancient San Skills Academy emerged from a partnership between the N/a'ankusê Foundation and the Nyae Nyae Conservancy. The concept is that San groups from Nyae Nyae come to N/a'ankusê to share their cultural knowledge with tourists, while N/a'ankusê offers hospitality training to San people seeking employment opportunities.

Visitors to the Academy, located about 40km east of Windhoek on the N/a'ankusê reserve, can learn traditional skills like fire-making, tracking, and medicinal plant use, and hear stories around the evening fire accompanied by traditional song and dance. The program provides income for San people, while also generating revenue for N/a'ankusê's private reserve (N/a'ankusê, 2020). While this might not be a community-governed model it does provide a range of benefits for both parties.

3.6.5. Guided Tours and Tourism Magazines

Guided tours and tourism media in Namibia play an important role in sharing elements of ILK on biodiversity with national and international audiences. Tourism platforms such as Travel News Namibia, the Gondwana Collection's magazine and social media pages, and other travel blogs regularly feature stories on traditional plant uses, Indigenous food systems, wildlife tracking skills, and cultural practices

linked to nature. Examples include articles on the traditional uses of local wild fruits, community harvesting practices highlighting the deep connection between people and the natural environment, and Bushman's hat *(Hoodia gordonii)*. The latter has been known for centuries among the San people of southern Africa as a hunger- and thirst-suppresser during extended hunts, Hoodia's traditional use has been the subject of ethnobotanical, legal, and policy analysis.

3.6.6. Folklores and Tales

Many tales and traditional stories are about biodiversity. Their documentation takes different shapes, such as story books, academic publications, and now emerging in blogs. Gondwana regularly publishes stories related to animals and plants that are based on traditional stories, such as:

- **A Tale of Ddi-xerreten, a Lioness and Children in Namibia (Gondwana Collection, 2019)**

The lioness had grown old and frail and could no longer do any of the hard work she needed to do each day. She went out and gathered all the children from the community in order for them to work and take care of her. Ddi-xerreten visited the lioness' home and he saw all the children she had gathered and was very disturbed that the children had been taken away from their people. Ddi-xerretten waited outside the lioness' home until she left to drink water at the river stream. He sat down and called the children. He said to the children, "O children, sitting here! The fire of your people is at the top of the ravine, which comes down from the top of the hill." Two of the children understood what Ddi-xerreten was saying and immediately arose from the fire and went back to their people. Ddi-xerreten looked at the remaining children and said again "O children, sitting here! The fire of your people is at the top of the ravine which comes down from the top of the hill." This time three children arose and quickly made their way back to their people. He looked around again and still there were more children and he said again, "O children sitting here! The fire of your people is at the top of the ravine which comes down from the top of the hill." This time one small child arose and went away to join his people. And still, there were more children and he again said, "O children sitting here! The fire of your people is at the top of the ravine which comes down from the top of the hill." Two more children arose and went away to their people. Once more he addressed the children and said, "O children sitting here! The fire of your people is at the top of the ravine which comes down from the top of the hill." Another two children arose and thus went away. Once more he implored the children, "O children sitting here! The fire of your people is at the top of the ravine which comes down from the top of the hill." Three children arose and went away to their own people. Finally, there were only two children left and Ddi-xerreten said to them, "O children sitting here! The fire of your people is at the top of the ravine which comes down from the top of the hill." The last two children left and went away to their people.

Ddi-xerretten then sat and waited for the lioness to return. Soon the lioness returned from drinking water at the stream. She looked around and saw that all the children had disappeared. She was enraged. In her rage she stammered "Why did the children do this to me? Why are the children not playing here as they should be?" Then she saw a man sitting next to her house and she realised that the man who resembled Ddi-xerreten must be responsible for the children's disappearance.

In her anger she approached him and demanded to know where the children were. Ddi-xerreten replied,"They are not your children." The lioness then demanded that he returned the children to her. She then grabbed hold of Ddi-xerreten's head with her teeth. She cried out in pain, "Oh dear! Oh dear! My teeth" as she did not realise that he's head was made of stone. He told her once again that the children were not her children. The lioness cursed at him for coming to her house. Ddi-xerreten arose and returned home while the lioness sat and stewed in her anger as she felt that she had been living peacefully with the children and she had loved them.

Story contributed by Fine Art Gallery in Swakopmund, written by Christine Lamberth, featured in Gondwana (2019)

- **A Nama legend: How the Fish River Canyon Came to Be (Gondwana Collection, 2015)**

This traditional Nama story provides a striking account of how the Fish River Canyon came to be. In contrast, geological interpretations present a more technical, yet equally compelling, narrative: the canyon's origins lie not in the battle of a serpent, but in the slow, dramatic breakup of an ancient supercontinent, a process unfolding over hundreds of millions of years rather than in a single moment.

Once upon a time a giant snake dwelled in southern Namibia. Every so often it devoured the people's sheep and goats and so finally they decided to kill the snake. Armed with spears and accompanied by their dogs the men set out for the hunt. They encircled the snake, keeping it at bay with fiery torches, shooting arrows at it and thrusting spears into its body. Even though it was a giant snake it stood no chance against their superior numbers. In its death throes the snake tossed and turned, tearing deep furrows into the ground.

- **The Stolen Water**

Folklores related to biodiversity were documented in "The Stolen Water and Other Stories: Traditional Tales from Namibia" by Davies (1993). The book compiles a diverse collection of stories drawn from various sources across Namibia. The tales are not explicitly attributed to particular cultural groups, nor is their origin specified. Rather, they were documented for young readers to help them "keep in touch with their past." The stories encompass a wide range of themes, featuring numerous species, aspects of daily life, moral lessons, healing practices, witchcraft, and relationships between animals, often conveyed through animal personification. The different tales are listed in Figure 14.

Figure 14. Tales documented in Davies (1993)

- **Sifwe Stories**

This paper documents stories told in Sifwe, one of the languages spoken in Zambezi region of Namibia, and which often include animals, such as lion, elephant, jackal, hare, crocodile, hippo, monkey, hyena and buffalo (Krishnamurthy et al., n.d.). See below a snapshot of the stories.

Malila

Long ago, there was a man called Malila. He was an elephant hunter and his name means 'elephant paths'. Malila used to dig some deep pits and put some sharpened sticks into the pits. He used to take a group of children with him when he went hunting. Malila, as an elephant hunter, knew the elephants' paths, so he would dig a deep pit in the elephant path. After that he would tell the children to hide near the dry trees and wait for elephants to pass on their way. When he saw the elephants, he would tell the children to make noise by beating on the dry trees and the sound this made was ngoo...ngoooo. Then the elephants became frightened and ran. The first ones would fall into the pit and after falling in, the hunters would start to skin the elephant and take the meat.

King elephant

A long time ago, the elephant was the king of all the animals and that year there was a drought. The king called all the animals to be taught about not forgetting things. The lessons started with the jackal who was very forgetful. He was sent to ask the name of a tree, and whether it could be eaten. Anyone who forgot, would be killed. The jackal forgot the name of the tree and was killed. Then the hyena was sent. On the way the hyena also forgot and was killed. Later the hare was sent. He did not forget, because he was clever. The best way he could do this was by singing all the way back to the leader. He fell down, but still shouted with a loud voice (mujeremba). The leader was happy, because the hare did not forget, even when he fell down.

The lesson is that children must not forget to retell the stories to the generations to come.

3.6.7. Cultural Events Around Biodiversity

Several cultural events and celebrations incorporate ILK of biodiversity in Namibia. Firstly, the National Heritage Week is an annual celebration, taking place in September, focusing on Namibia's cultural heritage. Led by the National Museum Association of Namibia, the National Heritage Council, and the National Art Gallery of Namibia, events take place all around the country, bringing together a range of stakeholders and participants. Initiatives include biodiversity-related components, such as the sale of crafts from natural products, performances with traditional attire and accessories and the celebration of local foods. Some events on ILK sharing are hosted, such as information sessions in living museums on different fruit and trees; traditional fire-making skills; training on animal tracking and hunting; or traditional fire storytelling by community.

In additionto the annual cultural event, there are few regional or community cultural events held:

The **Marula (Omagongo) Festival** is held twice a year, in rotation between eight Traditional Authorities in the North of the country -Oukwanyama, Ondonga, Uukwambi, Ongandjera, Ombalantu, Uukwaluudhi, Ombadja, and Uukolonkadhi. The celebration focuses on honouring practices surrounding the harvesting and consumption of marula, in particular recognizing the role of women, who traditionally prepare the marula juice. Additionally, spaces are organized for traditional storytelling by community members. The festival was listed on the UNESCO Representative List of the Intangible Cultural Heritage of Humanity in 2015 (Gondwana Collection, 2025).

The **Bream Festival** is an annual event in Namibia's Zambezi Region that celebrates the local bream fish, culture, and economy through food, music, dance, storytelling and cultural exhibitions, and aimed to promote trade and tourism, while also honouring the region's identity, pride with fish representing home, livelihood and tradition.

Lastly, trade fairs all around the country often feature products derived from biodiversity, made and sold by Indigenous Peoples and local communities.
These events support the transmission of ILK and could benefit from further documentation to amplify ILK. For instance, a short report on the 2018 edition of the Marula Festival highlighted cultural practices connected with marula harvesting and usage. Such cultural events help raise awareness among the public and tourists on the importance and value of ILK, while also fostering pride and continuity within the communities themselves. They also provide Indigenous bioeconomy opportunities while also serving as a platform for sharing and showcasing traditional knowledge, cultural practices and artisanal skills.

Pictures: (a) Squeezing marula fruits (© G. Shiimbi): (b) Pouring marula juice in a clay pot (© H. Kamati)

3.6.8. Films

Substantial portions of ILK documentation exist in video/film format, some of which are available in the public domain. Pending the definition of "formalized" documentation, films and videos are considered in this National ILK Outlook as essential publications. Some of the videos/films/documentaries reviewed include:

- **The River People** by the Namibia Nature Foundation (2023), documents community perspectives and Indigenous knowledge on the use and stewardship of freshwater resources, showing how local practices around rivers, wetlands, and seasonal flows guide sustainable harvesting, conflict management, and ecosystem care. By foregrounding community voices, the film illustrates the linkage between people, rivers, and biodiversity, and demonstrates how ILK continues to inform practical conservation decisions in Namibia's freshwater landscapes.

- **Hurinin - People of the Sea** by One Ocean Hub (2023) is a documentary highlighting the Topnaar sub-clan known as the Hurinin ("the sea-people"), whose cultural identity and coastal knowledge systems were shaped by centuries of interaction with Namibia's marine and shoreline ecosystems. The film shows how colonial displacement severed the Hurinin's access to the coast and disrupted their traditional reliance on ocean resources, leading to the erosion of ocean-based Indigenous knowledge practices. Through interviews, songs, poems and dances held in memory by a few remaining elders, the documentary reflects on the community's historical ocean stewardship, coastal harvesting practices, and cultural expressions linked to marine biodiversity.

- A UNESCO (2015) video documents a key form of ILK transmission among the Aawambo. The marula fruit festival is a celebration that lasts two to three days between March and April, uniting Aawambo communities of northern Namibia through the consumption of *omagongo*, a beverage made from marula fruit. The footage shows men carving goblets and horn tools, and women and youth gathering marula, weaving baskets, preparing clay pots, fermenting the fruit, and sharing songs, poems, and oral histories throughout the process. As a visual record, the film captures gendered roles, intergenerational learning, plant knowledge, and sustainable use practices associated with the marula tree that are difficult to convey in text alone.

- **Nyae Nyae Prize**, produced by Community Conservation Namibia (2019): Chief Tsamkxao ≠Oma of the Nyae Nyae Conservancy (Otjozondjupa Region) explains the importance of conservation hunting to the Ju/'hoansi San people and discusses the Edmond Blanc Prize awarded to the Nyae Nyae Conservancy and its stakeholders. The short film highlights how the Ju/'hoansi use Indigenous ecological knowledge to manage wildlife sustainably and maintain biodiversity in their ancestral territory.

- **Faces of Africa - Healers and Hunters of Nyae Nyae** by the China Global Television Network (2024) is a documentary following Ju/'hoansi elders, a master tracker (Ui) and a healer (Kaegce)-as they mentor apprentices in hunting, tracking, gathering and healing within the Nyae Nyae Conservancy. It documents intergenerational transmission of ILK under modern pressures and shows how these skills underpin sustainable wildlife use, ecosystem knowledge, and cultural continuity.

- **The Hunters** is an ethnographic film by John Marshall (1957) documenting a giraffe hunt and everyday life of four Ju/'hoansi men in Namibia's Kalahari Desert. One of numerous feature length and short productions on San anthropology from the 1950s to present day.

- **The Ways of the Ancestors**: Using Traditional Ecological Knowledge in Namibia (The Southeastern Channel, 2025) Records of a lecture by Dr. Kellen Gilbert from Southeastern Louisiana University presenting her own insights and stories about folk traditions and ecological knowledge in Namibia. The lecture explores how traditional belief systems, rituals, and resource-use practices shape people's relationships with their environment and biodiversity. Although not a community-produced documentary, it contributes to ILK documentation by providing scholarly interpretation and contextualisation of Namibia's Indigenous ecological knowledge from a cultural-anthropological perspective.

- **A quest for Mafwe roots culture and tradition** (Namib Research & Production Onscreen Media Namibia, 2024) is a series of 14 short stories describing cultural and traditional elements of daily life in the Mafwe culture, many of which are related to biodiversity conservation including rituals, healing practices, livelihood practices such as fishing knowledge of herbs, land-use customs and inheritance of cultural knowledge, many of which relate to biodiversity and conservation.

- Additionally, a series of documentaries was produced by the Ministry of Education, Information, Youth, Sports, Arts and Culture (MEIYSAC, formerly MEAC) and released between 2015 and 2017 under the Directorate of Namibia Library and Archive Services, in collaboration with theNational Commission on Research, Science and Technology (NCRST). One series documents practices of the Ovawambo communities in northern Namibia, including food preparation, basket weaving, pottery, and arrow-making. Another series focuses on the Nama community of Amber-bo, highlighting traditional fire-making techniques, medicinal practices, the crafting of skin bags, as well as customary makeup and perfume.

3.6.9. Arts and Crafts

Art is a way of documenting ILK on biodiversity, although this comes in very different shapes and varieties. Various galleries in Namibia promotes, exhibits and sells art pieces related to ILK and biodiversity, for instance:

i. The National Art Gallery of Namibia has a regular exhibition of artists relating cultural heritage and biodiversity or natural resources. Recently, it celebrated the Namibia annual heritage week in 2025 with a workshop on craftsmanship of basket making. They hosted a temporary exhibition on traditional medicine

and treatment of common diseases, such as wounds and malaria., the use of medicinal plants including the traditional names and procedures and practices at high level, as well of testimonies of people; just to name but a few.

ii. The Omba Gallery in Windhoek, a non-profit organisation that has been supporting the sustainable livelihoods of artisans and artists, living in rural communities in Namibia, offers a range of well-curated traditional crafts and products, including baskets and jewellery.

Paintings

There are a number of artists engaging in painting and printing ILK related to biodiversity, including natural resources and harvesting methods. Quite popular is linocut art, which was started by one of the most famous Namibian artis, John Muafangejo (1943–1987), who was internationally renowned for his powerful black-and-white linocut prints that depict scenes of daily life. Linocut art in Namibia nowadays still often depicts local natural resources, serving as a medium for artistic expression and a way to highlight conservation issues, as depicted in the example by Peter Mwahalukange (2015).

Figure 15. Linocut print of traditional fishing, by Peter Mwahalukange (2015)

Tools, crafts and jewellery

Many items of daily life used in Namibia, and especially rural areas, resemble ILK and biodiversity as they are made of natural resources using traditional techniques, including the well-known Kavango woodcarvers and their traditional patterns; woven baskets; traditional grain storages (Eshisha); traditional pestles and mortars etc.

Pictures: Jewellery and basket, Omba Gallery Windhoek, 2025; Eshisha (© Sakaria Gumede Kandenge)

3.6.10. Food and Recipe Books

Travel magazines, lodge social media pages and tourism websites frequently highlight traditional food as part of the cultural experiences promoted to tourists. Guides and lodge staff often narrate short stories about traditional preparation methods during cultural tours or meals. The booklet "Fish Recipes from the Wetlands of Namibia" (Namibia Nature Foundation, 2024) consolidates traditional fish cooking methods into a paper recipe collection.

In 2025, NNF published the Zambezi Cooking Club Recipe Book, a community recipe book developed with cooking clubs in the Zambezi Region. The book provides a range of recipes, cooking and preserving methods based on the handwritten recipe books of local cooking clubs. It brings together recipes using traditional and locally available ingredients. Currently available in English and Silozi, it is used as a practical tool during cooking demonstrations, nutrition sessions and community meetings. This kind of recipe book functions not only as a nutrition and behaviour-change tool, but also as a living record of ILK on food, farming, and biodiversity (Namibia Nature Foundation, 2025).

Another example is "Naturally Nourishing Namibia", Farming for Resilience (F4R), a GIZ-supported cookbook that compiles around 50 recipes and healthy drinks based on locally available ingredients. The book was developed with Namibian chefs and nutrition experts and is designed for use with basic cooking equipment, making it accessible for rural and low-income households. It combines traditional ingredients and food knowledge with more modern preparation methods and nutrition guidance (Farming for Resilience, 2022).

3.7. Gaps in Documentation of ILK

3.7.1. Gaps in Literature

Several shortcomings emerge when assessing the state of scholarship on ILK of biodiversity in Namibia. Beyond the methodological shortcomings discussed above, several thematic gaps also emerge. No sector appears to be comprehensively covered by the current documentation. This was echoed by the findings of the National ILK Outlook consultation workshop held in September 2025 with selected Indigenous Peoples and local communities. Although participants showcased a wealth of knowledge across all biomes and ecosystems, they noted the very limited state of its documentation. Some areas of knowledge, such as the use of species as indicators for danger, ecosystem dynamics and integrity, ecological management techniques or specific types of storytelling, such as myths, were unaddressed in the literature.

Documentation of ILK in the marine and coastal environment, documentation is close to non-existent, with only a handful of recent efforts. Similarly, Indigenous Peoples and local communities from coastal regions consulted in the September 2025 workshop primarily referred to ILK relating to the terrestrial environment and only highlighted the use of seaweeds and seal oil in the context of marine and coastal ecosystem system. This may suggest that use restrictions for communities living in the coastal National Parks led to further degradation of knowledge that was originally held by very few individuals.

Freshwater and inland fisheries are equally under documented. Only a couple of studies record specific aspects of ILK. Most existing information stems from the 2024 Fisheries Indaba, which remain unpublished and inaccessible to the wider public.

Documentation on fauna is also limited, though a few different aspects of ILK are at least partially covered. Some beliefs and folklore are recorded, selected practices on tracking, HWC and rangeland management are recognized. However, many additional practices were mentioned by Indigenous Peoples and local communities in the September 2025 workshop, such as the use of specific plants as animal repellents, cues in animal behaviour and other beliefs and knowledge. Livestock anecdotes around livestock disease prevention and management are also often discussed among farmers but our assessment found no specific documentation of this.

Although ILK related to flora, in particular medicinal plants, is relatively better covered, the evidence base is in no way comprehensive. While several dated ethnobotanical studies aim to provide an overview of relevant practices, showcasing however limited engagement with FPIC processes. The recent evidence base focuses on medicinal plants and herbs and the validation of their efficacy or provides details on practices related to a singular specie. During the September 2025 consultations, Indigenous Peoples and local communities. noted that while the use of some species appears to be documented, and even regulated usually for commercialisation

purposes, such as devil's claw or the use of wildlife skin for garments, this had often occurred without community involvement. Furthermore, knowledge-holders shared a number of species and uses absent from existing documentation.

Documentation on ILK related to disaster risk reduction and climate change adaptation remains scarce. Existing studies tend to focus on projected impacts of climate change on communities, rather than on the existing local adaptation strategies. Where such strategies are documented, focus is placed on floods in Northern Namibia, overseeing other relevant themes such as heat stress, land degradation or droughts. Several practices beyond flood control were described during the September 2025 National ILK Outlook consultation, such as maintaining grasses and reeds to prevent wind and water erosion by Indigenous Peoples and local communities in Kavango East and West and Zambezi, none of which have been published based on the literature review. As is still the case, climate forecasting would have been a critical skill for the livelihoods of fishermen, hunters and farmers. It is notably lacking in documentation of ILK.

Additionally, it is important to note that mechanisms of ILK transmission are rarely addressed. When discussed, they are often reduced to brief mentions, such as "word of mouth" (Lisao et al. 2017) or through family transmissions (Cheikhyoussef & Embashu, 2013). Furthermore, there is no overview of how ILK belief systems vary within or across cultural groups. These areas present foundational gaps in knowledge. Geographically, as mentioned in Section 3.2., ILK research in Hardap, Karas and Omaheke is close to non-existent.

Documentation mostly links ILK to language or ethnic groups but is seldom spatially explicit or georeferenced. Linking ILK to geographic areas or specific locations where possible would enable it to be captured in mapping publications (such as Atlases) or spatial databases such as the Environmental Information Service and ConInfo (the conservancy information database).

Finally, it is important to acknowledge that some gaps may be intentional, and even necessary for communities' knowledge cultures and belief systems. Both the literature and the Indigenous Peoples and local communities' consultation held in September 2025 indicate that certain practices are deliberately withheld due to their sensitivity, sacredness, or the dangers brought about by any misinterpretation. Several studies have noted interviewees' explicit refusals to disclose specific information.

3.7.2. Gaps in Other Forms of Documentation

Documentation in other forms is mostly driven by external agencies, who maintain the choice of topics, content, framing, narrative and selection of interviewees, thus much controlling the output

While national education strategies formally acknowledge ILK, its integration into curricula remains largely incidental. Communities strongly emphasized during

the September 2025 consultations that meaningful inclusion is a key priority for safeguarding and transmitting knowledge across generations.

Beyond the formal system, a range of non-academic ILK documentation initiatives have emerged in Namibia, helping to capture dimensions of lived practice, identity, and cultural pride that conventional literature often overlooks. Yet many of these efforts are led by external organizations that set the themes, framing, and selection of interviewees. As a result, the outputs often mirror external priorities rather than community-driven narratives. Much of this documentation is also oriented toward outside audiences, for instance, tourists engaging with "living museums", rather than serving knowledge holders themselves. Storytelling initiatives tend to remain broad and unstructured, with limited mechanisms to return documented knowledge to the communities of origin.

National Heritage Week is one of the few initiatives that meaningfully celebrates ILK and fosters cultural pride, though ILK is not its core focus and biodiversity features only partially. Regional events such as the marula and bream festivals also highlight iconic species but often overlook wider biodiversity themes, reinforcing a tendency to present ILK through narrow, species-specific lenses that limit its broader application and recognition.

Artistic expressions and crafts, despite their cultural richness, appear only intermittently in national platforms and lack sustained, structured engagement. Recent efforts to document traditional foods have begun to widen public access, but these initiatives are still in their early stages.

3.7. Risks, Threats, and Challenges to Namibia's Indigenous and Local Knowledge Systems

Namibia's ILK faces multiple threats that undermine the preservation, transmission and use of ILK. These challenges are largely the result of historical legacies, modern socio-economic changes, environmental changes and gaps in policy implementation. Most of the areas detailed below are interlinked to a greater or lesser extent, bringing in a high amount of complexity to the overall risk of ILK loss.

Historical Marginalisation

Historical marginalisation continues to influence ILK in Namibia. The colonial and apartheid rule of Namibia systematically degraded and suppressed ILK, languages and cultural practices. Colonial policies frequently characterised ILK as inferior to the colonial administration, leading to its exclusion from formal education, governance systems and resource management decisions. Namibia's first thematic report on benefit-sharing mechanisms for the use of biological resources for the CBD

acknowledges that "colonial policies and practices undermined customary systems of law and authority" and that "the transition to independence has not necessarily halted or reversed the trend of weakening Traditional Authority structures and customary law enforcement in Namibia" (Krugmann, 2001).

The apartheid system's forced removals, segregation policies and creation of "Bantustan's" (racially segregated homelands) disrupted traditional governance structures and severed many communities' connections to their ancestral lands. ILKs are inherently place-based and hence this undermined the foundations of many spheres of community knowledge. In addition, traditional leaders were co-opted or marginalised by colonial administrations, weakening the frameworks and key repositories through which knowledge, customary law and governance was held, transmitted and applied (Likuwa, 2014).

Many Namibian peoples, including Indigenous Peoples, and particularly the San and other marginalised groups, experienced acute historical discrimination over centuries that continues to affect their ability to maintain and transmit their knowledge systems. Despite post-independence efforts to address injustices, the legacy of marginalisation persists in terms of unequal access to education, land, economic opportunities, and political representation. Communities that were historically marginalised often lack the resources, institutional capacity, and political leverage and representation needed to protect and promote their knowledge in the contemporary political (Legal Assistance Centre & Desert Research Foundation, 2014).

Religious conversion, in Namibia's case largely to Christianity that was brought at first by colonial era missionaries, has sometimes resulted in the rejection of traditional spiritual beliefs and practices. Because many ILK systems combine spiritual and ecological understanding, conversion can fragment these frameworks. Rituals, ceremonies, and sacred sites that once passed on ILK to the broader community may be abandoned when they are viewed as incompatible with new religious doctrines.

Past assimilation policies and Western-leaning education systems have reduced usage of local languages and ILK, reducing their status and transmission. The psychological and cultural impacts of historical marginalisation include societal devaluation of traditional knowledge, where younger generations may perceive traditional knowledge as backward or irrelevant compared to formal Western education, leading to disinterest in learning from elders. This devaluation is reinforced when ILK is absent from school curricula, media representation, and public discourse, and with the lowered economic and livelihoods importance of ILK in day-to-day life.

Globalisation and Global Cultural Homogenisation

Globalisation creates pressures on ILK systems through cultural homogenisation, economic integration and the spread of dominant global cultural values and ways of life. Globalisation introduces economic and cultural models that erode traditional practices, languages, and values. Global media, consumer culture, and dominant languages increasingly shape aspirations and identities, particularly among youth.

Economic globalisation can bring market-oriented values and commercial resource exploitation that can clash with traditional cultural and resource management approaches that often have greater sustainability. Market pressures and opportunities can incentivise overharvesting of resources and the illegal wildlife and illegal plant trade, undermining traditional conservation practices. The commodification of nature transforms relationships with the environment from holistic and historic cultural and social connections to purely economic transactions. Related to this, in the first workshop that informed this report, workshop participants pointed out that there is no system for valuing ILK, and this severely undermining communities' negotiating position with commercial interests or researchers.

Global intellectual property systems, which are designed to protect individual ownership and innovation, rarely accommodate the collective, intergenerational, and adaptive nature of ILK. Namibia has sought to address these limitations through its ABS Act and participation in international frameworks such as the Nagoya Protocol, but challenges in implementation persist. Many communities remain unaware of their rights or lack the capacity to navigate complex legal and administrative processes to safeguard their knowledge from misuse.

Biopiracy continues to pose a threat despite existing legal protections. The *Hoodia gordonii* San intellectual property case showed how traditional knowledge can be commercialised without prior consent or fair benefit-sharing, even where communities hold clear historical claims. Although this case ultimately led to negotiated agreements, it also exposed deep vulnerabilities in protecting traditional knowledge from corporate exploitation. Similar pressures have been experienced with other indigenous plant species for example Devil's Claw (*Harpagophytum procumbens*), and threats remain too many.

Namibia's Access to Biological and Genetic Resources framework serves to highlight ongoing challenges such as inadequate participatory consultations, limited technical capacity at the local level, undervaluing the non-commercial cultural importance of traditional knowledge, and a narrow or unclear definition of "community" (Jauhiainen & Hooli, 2017). These implementation gaps mean that legal protections do not always translate into practical safeguards or ensure equitable benefit-sharing.

National Cultural Assimilation and Changing Social Values

Cultural assimilation operates through multiple pathways, including formal education, religious conversion, economic integration, and generational shifts in values and aspirations. Pressures from dominant cultures and religions, along with urban migration, weaken traditional practices and disrupt the intergenerational transfer of knowledge. Over time, these forces erode the cultural foundations that sustain ILK systems. In the first workshop, community participants raised many of these issues, stating that their ILK loss accelerates through multiple pathways. They stated that younger generations show less interest, and with that languages carrying unique ecological knowledge are disappearing and knowledge holders pass away

without transmitting sensitive practices. Traditional occupations tied to biodiversity also decline, removing the context for knowledge transmission.

Formal education systems, while vital, often function in non-Indigenous languages and prioritise Western knowledge frameworks and national economic priorities. On top of this, children spend considerable time away from their communities in order to attend school, hence opportunities for intergenerational learning are greatly reduced. Curriculums rarely include ILK systems, an oversight that devalues this knowledge as less valuable than academic or scientific learning. Research on Namibia's post-colonial education system shows that Western educational models continue to marginalise ILK despite official commitments to integrate it (Matemba & Lilemba, 2015).

Changing aspirations, especially among youth, further contribute to the erosion of traditional knowledge. The UN Namibia Office has reported that among Ju/'hoansi youth, rising urban migration, alcohol use, and the decline of traditional hunting and gathering roles have weakened the transmission of ILK (United Nations in Namibia, n.d.). Many young people now prefer urban employment and aspire modern lifestyles rather than agricultural, pastoral, or resource-based livelihoods that historically sustained their communities. While this shift partly reflects economic necessity, it also signals a broader change in what is regarded as desirable or prestigious.

Language loss is closely linked to the decline of ILK. Much of this knowledge is embedded in Indigenous and local languages, and when these languages fade, the concepts and vocabulary that express ecological and cultural knowledge disappear as well. Many terms for plants, animals, landscapes, and weather phenomena have no direct equivalents in dominant languages, making the loss of linguistic diversity a direct loss of ecological insight.

Gender dynamics also shape the transmission of knowledge in complex ways. Certain forms of traditional knowledge are gender-specific, passed along through male or female lines. As gender roles evolve in the direction of greater equality, of which Namibia should be applauded as a progressive example, ILK knowledge-sharing can be reduced unless deliberate efforts are made to adapt them to contemporary social contexts.

Climate Change and Environmental Degradation

Climate change poses serious threats to ILK by transforming the biodiversity and physical environment in which such knowledge developed and is applied. Because ILK is rooted in long-term relationships between people and their environments, rapid ecological change can make that knowledge harder to use or adapt. Shifting climates alter ecosystems, rendering some traditional practices less reliable and weakening the resource base on which ILK depend.

Changing rainfall patterns, for instance, disrupt traditional agricultural calendars and planting cycles. Long-established indicators such as animal behaviour and flowering

seasons may no longer align with new weather patterns. As these established traditional indicators lose reliability, communities may lose confidence in their traditional systems and as well as suffer harms to their livelihoods. Research on Namibian pastoral systems shows that rangeland degradation and declining forage quality have reduced the usefulness of Indigenous pastoral knowledge, threatening the very foundations of these systems (Ntombela et al., 2024).

Climate-driven biodiversity loss also endangers the living resources around which traditional knowledge is organised. As plant and animal species decline or migrate, the knowledge linked to them becomes increasingly difficult to apply or transmit. When medicinal plants grow scarce, communities can no longer harvest them sustainably or teach younger generations how to identify and use them. This erosion of biodiversity further weakens the ecological base upon which ILK systems depends, particularly in more remote communities with higher reliance on natural resources. Climate change drives increasingly extreme or unpredictable weather events such as droughts, floods, and heat waves. When faced with food or water insecurity, communities may be forced to overharvest or exploit resources unsustainably to meet their household needs, contradicting customary conservation norms. Climate-related scarcity can also intensify competition for land and water, straining customary governance systems and sparking local conflict (the same effects make also be seen from commercial exploitation).

At the same time, climate change highlights the adaptive strength of ILK. Studies of community resilience in northern Namibia have shown that traditional coping strategies and local ecological knowledge play key roles in managing floods and environmental variability (Hooli, 2016). Traditional insights into drought-resistant crops, water harvesting, fire management, and diversified livelihoods offer valuable guidance for adaptation planning. The challenge remains to ensure these systems are not lost before their full value is recognised and integrated into policy and practice.

Loss of Community Land and Natural Resources

Access to land and natural resources is central to ILK usage and sustainability because this knowledge is deeply rooted in traditional lands and maintained through continuous interaction with local ecosystems. Dispossession, resettlement, and land loss undermine this relationship, severing the connection between people and their past. Without access to their lands, communities lose both the context and opportunity to apply and transmit their knowledge.

Article 100 of Namibia's Constitution vests ownership of land and natural resources in the state unless otherwise lawfully owned. For communities with customary tenure or undocumented historical claims, this creates persistent vulnerability. The Traditional Authorities Act (2000) recognises customary leaders, and the Communal Land Reform Act (2002) provides some legal safeguards, yet tenure insecurity often remains due to mismanagement, corruption, national development priorities or lack of policy implementation.

Some San communities such as the !Xun (!Kung) San have seen their ancestral lands illegally occupied by cattle herders, reducing access to bush fruit, fields, and other vital resources, thereby undermining their knowledge base and subsistence systems (Namibia Daily News, 2023). Hence, the land loss directly translates into the loss of opportunities to practice and pass on ecological knowledge.

Commercial land acquisition, mining, infrastructure development, and the creation of conservation areas frequently lead to displacement or restricted access to resources. The growth of extractive industries and the commodification of nature threaten both the physical and cultural spaces essential to ILK. When communities lose access to hunting grounds, gathering sites, sacred areas, or fishing zones, the knowledge associated with those spaces fades. Younger generations cannot learn traditional management techniques if they are barred from using the resources that sustain them.

Protected areas, though critical for conservation, can create tensions when they restrict traditional practices such as hunting, gathering, or seasonal grazing that have sustained communities for generations. Policies such as the Tourism and Wildlife Concessions on State land (2007) aim to share benefits with local people, but implementation varies, and communities often have little influence over management decisions affecting their traditional lands.

Rising population pressures, land conversion, often for agricultural expansion, and climate stress further intensify competition for land and resources. Conflicts between different land uses including livestock grazing, crop cultivation, mining, and wildlife conservation can marginalise or overturn traditional management systems. Customary institutions often lack the authority or resources to mediate such conflicts effectively, especially when opposing interests are supported by the State or commercial power.

Lack of Documentation and Intergenerational Transmission

Because ILK is primarily oral, its survival depends on continuous practice and communication and transmission between generations. When this transmission is disrupted, knowledge can disappear within a single generation. Unlike written records, oral traditions require active use to be transmitted to the next generation. Elders who hold deep knowledge are aging, and many communities worry that youth are not learning from them. Several factors contribute to this, including migration to cities, long periods spent in formal schooling, attraction to modern lifestyles, ILK suppression, and the lack of spaces for intergenerational learning.

A study from UNAM states that ILK are “threatened with extinction” and emphasises the absence of “a clearly defined approach to document Indigenous knowledge systems accurately and in their entirety”(Shapi et al., 2011). Documentation itself faces multiple challenges. Limited resources, technical capacity, and institutional support constrain systematic recording and archiving. There is also tension between protecting knowledge from exploitation and ensuring its accessibility for learning

and application. Some knowledge is sacred or restricted, and communities may not wish to document it without clear assurances of control and consent.

External researchers may record traditional knowledge, but communities often have little control over how that information is used or shared. When documentation is not participatory, it risks reproducing extractive practices rather than empowering knowledge holders.

Language loss compounds these difficulties. A number of Namibia's smaller Indigenous languages are endangered, and with their decline, the conceptual and ecological vocabulary through which knowledge is expressed disappears. At times this can be linked to discrimination, as San people often adopt dominant identities and languages to avoid being viewed as primitive and to access economic opportunities, accelerating language and cultural erosion. Efforts to revitalise Indigenous languages are therefore crucial to preserving the knowledge systems embedded within them (Harris, 2024).

ILK are frequently undervalued in formal education, research, policy and planning. A review for southern Africa notes that ILK are "often marginalised or dismissed as inferior to Western scientific knowledge, in contexts where their rights are not fully recognised or respected"(Ncube et al., 2025). This institutional marginalisation means that even when ILK is rhetorically acknowledged, it may not inform actual decision-making processes.

Urbanisation and Migration

Urbanisation and migration create both physical and social distance from the landscapes where ILK is practiced. As people move to towns and cities in search of education and work, traditional community structures weaken, and opportunities for cultural practice and knowledge sharing diminish.

Migration fragments social networks and interrupts the informal learning processes that sustain ILK systems. Urban settings offer few opportunities to practice ecological knowledge such as plant identification, animal tracking, or traditional farming. Without regular application, ILK can become detached from daily life, and harder to pass on. A study in Windhoek's Havana settlement found that planning and policy exclude open spaces needed for cultural practices and that ILK in urban spaces are ignored or dismissed (Billawer & Nel, 2024).

Insufficient Recognition and Valuation

Despite legislative progress, ILK continues to be undervalued compared to Western scientific knowledge in practical decision-making. Institutions frequently acknowledge ILK rhetorically while privileging scientific data in policy and implementation.

Research funding overwhelmingly favours conventional science over community-based or ILK initiatives. Academic institutions may extract knowledge for research but provide little in return—limited benefit-sharing, capacity building, or recognition of community ownership. Scholarly publications are often inaccessible to the very communities whose knowledge they document.

Conventional economic valuation systems also fail to account for the full cultural, spiritual, and ecological importance of ILK. By focusing on marketable applications, they overlook non-monetary values, leading to underinvestment in protecting and promoting ILK, as highlighted by workshop participants.

CHAPTER 4:

Policy Mainstreaming

Up to 2.5 billion people depend on Indigenous and community lands, which make up over 50 percent of the land on the planet (Oxfam, 2016); and at least a quarter of the global land area is traditionally owned, managed, used or occupied by Indigenous Peoples (IPBES, 2019). While nature is under increasing pressure, it is declining less rapidly in areas managed by Indigenous Peoples and local communities (IPBES, 2019). Approximately 15% of global forests are managed as community resources by Indigenous Peoples and local communities, and areas with high biodiversity often coincide with Indigenous Peoples and local communities managed lands (IPBES, 2022b).

Despite this evidence, ILK is rarely incorporated into mainstream biodiversity policies and decision-making. During the late twentieth century, ILK and ILK systems were perceived to be close to disappearing. In the following decades however, shifts in policy have renewed attention to ILK, in part due to the recognition of its value in addressing environmental challenges (Gómez-Baggethun, 2022).

While no country constitutes an undisputed benchmark of ILK policy integration, several examples can generate learnings for the Namibian context. For instance, Canada's 2030 Nature Strategy explicitly commits to "giving equal weight to western science and Indigenous knowledge" (Government of Canada, 2024). Additionally, national funding is made available for Indigenous-Led Area-Based Conservation, embedding ILK in protected area management (Government of Canada, 2022). Furthermore, national guidelines are provided to include Indigenous Peoples and local communities in impact assessments and related decision-making (Government of Canada, 2020). In New Zealand, the National Policy Statement for Indigenous Biodiversity is a strong example of policy mandate explicitly directing relevant authorities to protect and restore biodiversity in an Indigenous Peoples and local communities' area (New Zealand Ministry for the Environment, 2024). The Bolivian Constitution explicitly recognizes Indigenous Peoples and requires the protection of their knowledge (Constitute, n.d.).

4.1. Global Policy and Mainstreaming Processes

A number of global treaties recognize the importance of ILK for biodiversity conservation and provide direction for the integration of ILK; this includes the following:

Table 7. International Treaties and ILK recognition

Treaty	Year	Ratified by Namibia	Recognition of ILK
UN Convention on Biodiversity (CBD)	1992	1997	Article 8(j), Kunming-Montreal Global Biodiversity Framework
International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)	2001	2004	Farmers' rights, traditional knowledge in plant genetic resources
Ramsar Convention	1971	1995	Traditional knowledge in wetland conservation
Convention on International Trade in Endangered Species of World Fauna and Flora (CITES)	1975	1991	Indigenous practices in sustainable use and trade monitoring
UNFCCC	1992	1995	ILK in climate adaptation and ecosystem-based approaches

Specifically relevant for this study is the CBD, which will be analysed in more depth.

UN Declaration on the Rights of Indigenous Peoples (UNDRP)

From a human-rights perspective, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), adopted in 2007, is particularly relevant. Given it is an agreement (not a treaty), it was not subject to ratification, but Namibia supported its adoption. The declaration delineates and defines Indigenous Peoples' individual and collective rights, including rights to self-determination; rights to participate in decision-making; rights to revitalize and practice their cultural traditions and customs as well as details to FPIC (United Nations, 2007).

Important aspects related to ILK and biodiversity include rights to traditional medicine (article 24); right to the lands, territories and resources including the right to maintain and strengthen their distinctive spiritual relationship with their lands and other resources as well as the right to the recognition of such rights (articles 25 – 27); right to the conservation and protection of the environment (article 29); rights to protect traditional knowledge on fauna and flora (article 31) and FPIC required for all decisions regarding their land and resources.

UNESCO Convention on Intangible Cultural Heritage

Adopted by the General Conference of UNESCO on October 17, 2003, International Convention on the Safeguarding of the Intangible Cultural Heritage" is about the "people, resilience and knowledge passed on from generation to generation" with the objectives to:

i. Safeguard intangible cultural heritage: Protect the viability of practices, expressions, knowledge, and skills, which includes identification, documentation, preservation, and transmission.;
ii. Ensure respect: Promote mutual respect among communities, groups, and individuals for their intangible cultural heritage, and ensure it is compatible with existing human rights instruments;
iii. Raise awareness: Increase public understanding of the importance of intangible cultural heritage at local, national, and international levels;
iv. Promote international cooperation: Encourage collaboration and assistance between countries to support safeguarding efforts; and
v. Support community involvement: Require that safeguarding measures are developed with the full consent and participation of the communities concerned (UNESCO, 2003).

4.2. Convention on Biological Diversity

The CBD is of particularly importance, as it is the primary treaty for biodiversity conservation with the three objectives:

1. The conservation of biological diversity;
2. The sustainable use of the components of biological diversity; and
3. The fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

Signed by 150 government leaders at the 1992 Rio Earth Summit and with currently 196 signatories, the CBD is dedicated to promoting sustainable development. Conceived as a practical tool for translating the principles of Agenda 21 into reality, the Convention recognizes that biological diversity is about more than plants, animals and microorganisms and their ecosystems – it is about people and their need for food security, medicines, fresh air and water, shelter, and a clean and healthy environment in which to live (CBD, n.d.b).

The Convention is manifested in 42 articles, and article 8j) is of particular interest for this study.

4.2.1. Article 8j

Under the CBD, ILK is not only considered a cross-cutting issue, but the interests of Indigenous Peoples and local communities are enshrined in the Convention text under Article 8j, which states that

> Each contracting Party shall, as far as possible and as appropriate: (j) Subject to national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application

with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge innovations and practices;

An open-ended working group considered aspects under article 8j until a new permanent Subsidiary Body on Article 8(j) and other Provisions of the Convention related to Indigenous Peoples and local communities was established at the sixteen Conference of Parties (COP16) in 2024 in a landmark decision (CBD/COP/DEC/16/5). This Subsidiary Body is expected to elevate issues related to the implementation of Article 8(j) and enhance the engagement and participation of Indigenous Peoples and local communities in all Convention processes. The first meeting of the Subsidiary Body on Article 8(j) (SB8J) took place in October 2025 in Panama.

Parties also adopted a new Programme of Work on Article 8(j) and other provisions of the Convention related to Indigenous Peoples and local communities in CBD/COP/DEC/16/4. This transformative programme sets out specific tasks to ensure the meaningful contribution of Indigenous Peoples and local communities towards the three objectives of the Convention as well as the implementation of the KKMGBF.

The new programme of Work includes general principles on the full and effective participation of Indigenous Peoples and local communities, taking into account the specific challenges faced by them, for the implementation of the CBD and the KMGBF. Relevant elements for this study include, in particular, the recognition of ILK in spatial planning processes and contributions of Indigenous Peoples and local communities towards sustainable use of natural resources, restoration and conservation of ecosystems; and in addressing drivers of biodiversity loss; as well as the involvement of Indigenous Peoples and local communities in planning and implementation of the NBSAPs. Through this Programme, rights, contributions and traditional knowledge of Indigenous Peoples and local communities are further embedded in the global agenda.

Traditional Knowledge indicators under CBD

While the establishment of the SB8J strengthens the ILK advocacy, progress of Parties in the implementation of aspects related to article 8j including traditional knowledge and customary sustainable use was measured before, based on four indicators as outlined in UNEP/CBD/WG8J/8/9:

a. Linguistic diversity and numbers of speakers of Indigenous languages

There is a fundamental linkage between language and traditional knowledge related to biodiversity. Indigenous and local communities have elaborated complex classification systems for the natural world, reflecting a profound understanding of their local environment. This environmental knowledge is embedded in Indigenous names, oral traditions and taxonomies, and can be lost when a community shifts to another language. COP 7 adopted trends of linguistic diversity and numbers

of speakers of Indigenous languages as a proxy indicator for status and trends in traditional knowledge in decision VII/30.

Namibia is home to 26-30 languages, depending on the source of information, of which 23 are Indigenous languages (Ethnologue, n.d.; Simataa & Simataa, 2018). Some languages or dialects are only spoken by a few individuals. A recent initiative included the Draft Namibian National Action Plan for International Decade of Indigenous Languages, to empower Indigenous languages and knowledge systems.

b. Land-use change and land tenure

The indicator on land-use and tenure captures the relationship between traditional knowledge, customary sustainable use and land-use change and land tenure. For example, changes in land use from Indigenous forests to agriculture imply decreasing opportunity to practice traditional knowledge and customary sustainable use, including traditional occupations. The land indicator is related to areas traditionally owned, used or occupied by Indigenous and local communities. Recently this traditional knowledge indicator was added at COP 16 as part of the monitoring framework the KMGBF (new indicator, as per COP 16 Decision, and will as such be incorporated into the national monitoring framework of NBSAP III, forthcoming.

The Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWL) under its Division of Land Boards, Tenure and Advise administers the Namibia Communal Land Administration System (NCLAS), which captures all communal land rights registered (Mazambani, 2024) and informs about land tenure, whereas the Remote Sensing Unit under MEFT monitors land use changes, especially in the context of projects like the Land Degradation Neutrality Project under the UN Convention to Combat Desertification (UNCCD) (Hengari, 2018). Global datasets are provided by initiatives like the Landmark if no national information is available.

c. Practice of traditional occupations

Practice of traditional occupations can serve as a proxy indicator for the preservation of traditional knowledge. Some Indigenous and local communities are pastoralists, hunter-gatherers, forest dwellers, or shifting cultivators. Furthermore, many traditional occupations are closely linked to customary sustainable use of biodiversity. This indicator also forms part of KMGBF monitoring framework (as agreed in COP 15, Decision 5), for Target 9 as headline indicator 9.2 (Percentage of the population in traditional occupations). However, agreed up-to-date methodology does not exist for this indicator and is yet to be developed.

In Namibia, it is the National Statistics Agency that reports on demographic development including employment rate, however, so far traditional occupation is not included in the classification but rather considered self-employed for subsistence purposes (Namibia Statistics Agency, 2023), which is not exactly aligned.

d. Degree to which traditional knowledge and practices are respected through the full integration, participation and safeguards in national implementation

This traditional knowledge indicator dates back to CBD/COP/DEC/XI/3 and was accommodated in target 22 of KMGBF, which is to "Ensure the full, equitable, inclusive, effective and gender-responsive representation and participation in decision-making, and access to justice and information related to biodiversity by Indigenous Peoples and local communities, respecting their cultures and their rights over lands, territories, resources, and traditional knowledge, as well as by women and girls, children and youth, and persons with disabilities and ensure the full protection of environmental human rights defenders." So far, this indicator has not been operationalized globally. In Namibia, the NBSAP would stipulate inclusive and equitable participation in its previous versions, but with no means of measuring achievements systematically (CBD, 2024).

4.2.2. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

IPBES, established in 2012 and with now about 150 member states, is an independent intergovernmental body established by States to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development. ILK is enshrined in the objectives and deliverables, and the IPBES conceptual framework explicitly considers multiple knowledge systems and values. IPBES has been at the forefront in ILK recognition in policy and scientific circles and provides guidance on the inclusion of Indigenous Peoples and local communities and ILK in all its scientific assessments.

The 2030 work programme includes "enhanced recognition of and work with Indigenous and local knowledge system" and dedicated Technical Support Unit on ILK and Task Force on ILK Systems have been created, both coordinated by UNESCO LINKS, to ensure this inclusion (IPBES, 2017, 2021).

An "approach to recognizing and working with ILK in IPBES" was approved by the member states at the 5th IPBES plenary meeting in 2017, and IPBES has also developed a methodological guidance to enhance implementation of this approach and participation by Indigenous Peoples and local communities (IPBES, 2024a).

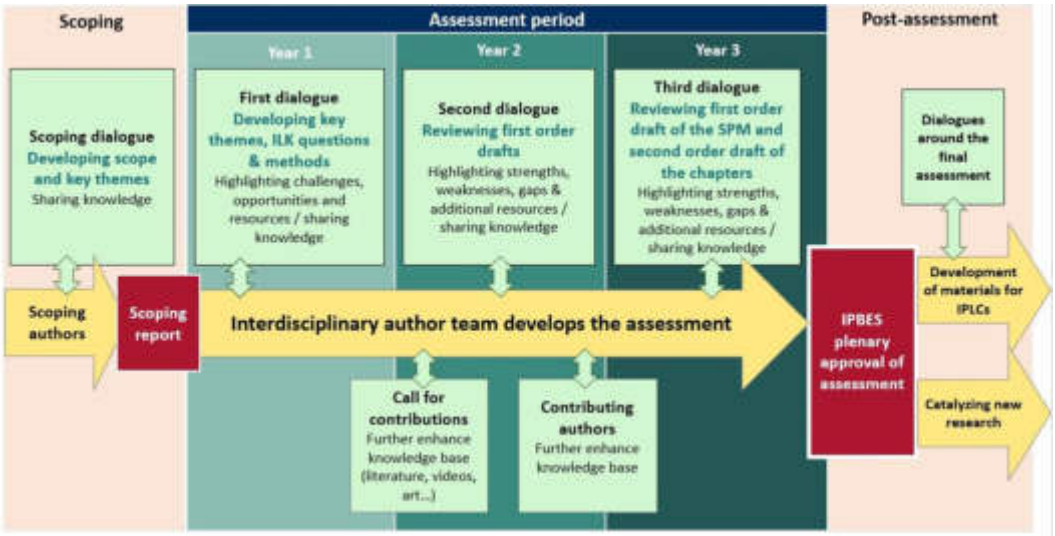


Figure 16. IPBES approach to ILK Assessment (IPBES, 2024a)

The Transformative change assessment

The IPBES Assessment Report on the Underlying Causes of Biodiversity Loss and the Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity also known as the Transformative Change Report (IPBES, 2024b), builds on the first IPBES Global Assessment (IPBES, 2019) and the IPBES Values and Valuation of Nature Assessment (IPBES, 2022a) which reiterated that the only way to achieve global development goals is through transformative change. The Transformative Change Assessment explains what transformative change is, how it occurs, and how to accelerate it for a just and sustainable world.

Key messages from the Transformative Change Assessment include:

- Nature and its vital contributions to people are deteriorating worldwide;
- Direct and indirect drivers of change have accelerated during the past 50 years;
- Goals for conserving and sustainably using nature and achieving sustainability cannot be met by current trajectories and may only be achieved through transformative changes across economic, social, political and technological factors.

Highlighted challenges to transformative change comprise economic and political inequalities; inadequate policies and unfit institutions; unsustainable consumption and production patterns including individual habits and practices; limited access to clean technologies and uncoordinated knowledge and innovation systems, and relations of domination over nature and people, especially those that emerged and were propagated in colonial eras and that persist over time, which are shaped by the continued undervaluing and misrecognition of ILK.

The following four principles were identified to be pivotal to address the underlying cause of biodiversity loss and to leverage transformative change: equity and justice; pluralism and inclusion; respectful and reciprocal human-nature relationships; and adaptive learning and action. It was highlighted that weaving together insights from diverse approaches and knowledge systems, including ILK, enhances strategies and approaches for transformative change.

Especially the principles of pluralisms and respectful human-nature relationships are closely related to ILK. Six broach approaches for transformative change were identified, and the role of ILK in each approach as suggested below (IPBES, 2022a):

APPROACHES	MAIN ACTIONS AND INTERVENTIONS ASSOCIATED WITH THE APPROACH	ROLE OF INDIGENOUS AND LOCAL KNOWLEDGE
System	Interventions that alter the relationships and feedbacks that block or can help accelerate systemic change, including changes to the structure, rules and networks in a system, and the overall goals or underlying intent of the system.	Sharing and providing encompassing and interconnected views of human-nature relationships and complex relations among beings (material and non-material).
Structural	Altering economic, social, political and cultural rules, either through governance interventions or through communities reforming predominant rules.	Challenging colonial structures and institutionalizing local governance for promoting and enhancing sustainable practices associated with Indigenous and local knowledge.
Inner transformation	Relational activities that nurture human-other-than-human relationships; intra- and inter-generational relationships; self-other relationships and relationships with oneself leading to shifting inner beliefs, views and practices.	Highlighting spiritual, emotional, cultural, social and historical dimensions of self-other relationships to trigger and leverage inner potentials for transformative change.
Empowerment	Fostering social movements and building grassroots networks, envisioning alternative pathways using critical tools, self-reflection and historically denied agency to gain recognition, representation, and rights in legal structures and other key arenas of power.	Asserting agency, power and rights of Indigenous Peoples and local communities to their Indigenous and local knowledge and overcoming historical legacies and marginalized situations.
Knowledge co-creation	Collaborative research-action interventions that build individual and collective capacities to promote desirable futures through visioning, dialogues, reflection and feedback sessions, including sharing knowledge in accessible ways.	Collaboratively generating knowledge and co-designing new products, practices and solutions through an interactive process of weaving knowledge systems.
Science & Technology	Use of new technologies and innovations, in conjunction with inclusive innovation processes; increased funding for research, education, outreach and science-policy interface.	Source of knowledge for science, technology and innovation, which often draws on traditional knowledge, associated practices and biological resources that have been preserved and maintained through Indigenous and local knowledge.

Figure 17. Role of ILK in Transformative Change (IPBES, 2022a)

4.2.3 Kunming-Montreal Global Biodiversity Framework

The KMGBF was adopted during the COP 15 of the CBD (CBD/COP/DEC/15/4). This historic Framework (2022-2030), following the Aichi Biodiversity targets (2011-2020), supports the achievement of the Sustainable Development Goals and builds on the Convention's previous Strategic Plans, and sets out an ambitious pathway to reach the global vision of a world living in harmony with nature by 2050. Among the Framework's key elements are 4 goals for 2050 and 23 targets for 2030.

The KMGBF stresses the importance of integrating scientific evidence and ILK to reverse biodiversity loss with an increased recognition of the role of Indigenous Peoples and local communities and their ILK across various sections, as presented below:

Section C – Key principles and Cross-Cutting issues:

- ***Contribution and rights of Indigenous Peoples and local communities:*** "The Framework's implementation must ensure that the rights, knowledge, including traditional knowledge associated with biodiversity, innovations, worldviews, values and practices of indigenous peoples and local communities are respected..."
- ***Science and innovation:*** "Implementation of the Framework should be based on scientific evidence and traditional knowledge and practices, ..."
- ***Formal and informal education:*** "Implementation of the Framework requires ... education ... at all levels, ... recognizing diverse world views, values and knowledge systems of Indigenous Peoples and local communities".
- ***Human rights-based approach:*** The implementation of the Framework should follow a human rights-based approach, respecting, protecting, promoting and fulfilling human rights..."

Section G: Goals

Goal C: The monetary and non-monetary benefits from the utilization of genetic resources and digital sequence information on genetic resources, and of traditional knowledge associated with genetic resources, ... are shared fairly and equitably, including, as appropriate, with indigenous peoples and local communities, ... while ensuring traditional knowledge associated with genetic resources is appropriately protected....

Section H: Targets:

- **TARGET 3:** Ensure and enable that by 2030 at least 30 per cent of terrestrial and inland water areas, and of marine and coastal areas, ... are effectively conserved and managed .... recognizing indigenous and traditional territories .... while ensuring that any sustainable use, ... is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities...

- **TARGET 4:** Ensure urgent management actions to halt human induced extinction of known threatened species and for the recovery and conservation of species.... including through in situ and ex situ conservation and sustainable management practices and effectively manage human-wildlife interactions to minimize human-wildlife conflict for coexistence.

- **TARGET 5:** Ensure that the use, harvesting and trade of wild species is sustainable, safe and legal, preventing overexploitation ... while respecting and protecting customary sustainable use by indigenous peoples and local communities.

- **TARGET 9:** Ensure that the management and use of wild species are sustainable, thereby providing social, economic and environmental benefits for people,

especially those in vulnerable situations and those most dependent on biodiversity, ... and protecting and encouraging customary sustainable use by indigenous peoples and local communities.

- **TARGET 10:** Ensure that areas under agriculture, aquaculture, fisheries and forestry are managed sustainably, in particular through the sustainable use of biodiversity, including through a substantial increase of the application of biodiversity friendly practices, ... conserving and restoring biodiversity and maintaining nature's contributions to people...

- **TARGET 13:** Take effective legal, policy, administrative and capacity-building measures at all levels, as appropriate, to ensure the fair and equitable sharing of benefits that arise from the utilization of genetic resources and from digital sequence information on genetic resources, as well as traditional knowledge associated with genetic resources....

- **TARGET 19:** Substantially and progressively increase the level of financial resources from all sources, ... to implement national biodiversity strategies and action plans, ... including by.... (f) Enhancing the role of collective actions, including by indigenous peoples and local communities, Mother Earth centric actions and non-market-based approaches including community based natural resource management and civil society cooperation and solidarity aimed at the conservation of biodiversity.

- **TARGET 21:** Ensure that the best available data, information and knowledge are accessible..... Traditional knowledge, innovations, practices and technologies of indigenous peoples and local communities should only be accessed with their free, prior and informed consent ....

- **TARGET 22:** Ensure the full, equitable, inclusive, effective and gender-responsive representation and participation in decision-making, and access to justice and information related to biodiversity by indigenous peoples and local communities, respecting their cultures and their rights over lands, territories, resources, and traditional knowledge, as well as by women and girls, children and youth, and persons with disabilities and ensure the full protection of environmental human rights defenders.

Section K. Communication, education, awareness and uptake

22 (a) Increasing awareness, understanding and appreciation of the knowledge systems, diverse values of biodiversity and nature's contributions to people, including ecosystems functions and services and traditional knowledge and worldviews of indigenous peoples and local communities as well as of biodiversity's contribution to sustainable development; at the national level, KMGBF parties are meant to update their NBSAPs with these global priorities.

Monitoring Framework

A transformative change compared to the Aichi Biodiversity Targets- the previous Strategic Plan, a monitoring framework was developed to measure progress on targets and towards goals of the KMGBF. Section 12 specifically invites the Ad Hoc Open-ended Working Group on Article 8(j) (which is now SB8J) and Related Provisions to continue the development and operationalization of indicators related to traditional knowledge, and Indigenous Peoples and local communities, and to report on this work to the COP.

4.3. National Legislative and Policy Frameworks

Namibia has a well development legal framework, though this is not always matched by implementation of its laws. The key statute for the recognition and protection of ILK in Namibia is the Access to Biological and Genetic Resources and Associated Traditional Knowledge Act (2017) (Act No. 2 of 2017), which establishes clear community rights over knowledge, innovations, and practices linked to biological and genetic resources. It requires prior informed consent from local communities before access or use of their knowledge, and it provides for access and benefit-sharing agreements to ensure that communities receive both monetary and non-monetary benefits. The Act recognises customary law as the basis for determining ownership and use of traditional knowledge, giving legal standing to community protocols. It also sets up a dedicated office within MEFT to manage permits, compliance, and benefit-sharing, aligning Namibia with international obligations under the CBD and the Nagoya Protocol.

The Traditional Authorities Act (2000) (Act No. 25 of 2000) affirms the authority of recognised traditional leaders to administer customary law within their communities. Although primarily concerned with governance, land allocation, and dispute resolution, the Act provides an indirect framework for ILK. Traditional Authorities play an important local role in regulating access to natural resources, maintaining customary practices, and overseeing cultural expressions tied to land and heritage, as key custodians of knowledge relating to sustainable land use, resource management and cultural traditions.

The National Heritage Act (2004) (Act No. 27 of 2004) focuses on safeguarding Namibia's cultural heritage, and establishes the National Heritage Council, which is mandated to identify, protect and manage heritage resources. While it is primarily oriented towards monuments, sites and artefacts, its scope extends to including intangible elements such as oral traditions, rituals, and cultural practices central to ILK. However, the Act does not devolve strong rights to communities themselves, leaving them dependent on state-led processes of recognition and management.

The Namibian Constitution (1990) supports the above laws by recognising customary law and guaranteeing cultural rights, while Namibia's ratification of international treaties strengthens the normative basis for protection.

4.3.1. The Namibian Constitution

The Namibian Constitution (1990) does not provide specific recognition of ILK but includes four articles that offer implicit or indirect protection through provisions related to culture, language, traditional leadership, and the environment.

Article 19: the right to culture, language, custom and tradition

Article 19 establishes that every person has the right to enjoy, practice, profess, maintain and promote any culture, language, tradition or religion, subject to the Constitution and provided these rights do not impinge upon others' rights or the national interest.

While the article does not explicitly mention ILK, it provides the constitutional foundation that underpins all subsequent ILK protection in Namibian law. This constitutional protection supports arguments that traditional knowledge custodianship and customary practices merit recognition and protection in national policy and law. Traditional ecological knowledge, for example understanding of seasonal patterns, resource management practices, medicinal plant use, exists within cultural contexts, and Article 19 protects the right of communities to continue these cultural practices and traditions through which knowledge is maintained and transmitted.

Article 19 also provides constitutional legitimacy for statutes like the Traditional Authorities Act (2000), which recognises the Traditional Authorities and customary governance structures through which ILK is often managed and expressed at community level.

Article 91(c): The functions of the Ombudsman

Article 91(c) gives the Ombudsman a duty to investigate complaints concerning the over-utilisation of living natural resources, irrational exploitation of non-renewable resources, and degradation and destruction of ecosystems. This provides another constitutional hook relevant to ILK in biodiversity management, as communities can use this mechanism to raise concerns about resource management that conflicts with sustainable traditional practices.

Article 95(l): State Policy on the Promotion of the Welfare of the People

Article 95(l) requires the State to maintain ecosystems, essential ecological processes, and biological diversity, and to utilise living natural resources on a sustainable basis for the benefit of all Namibians, both present and future.

The provision's focus on sustainable use for present and future generations aligns with ILK promotion. ILK typically embodies such long-term, sustainable relationships with natural resources. This constitutional mandate also aligns with

Namibia's international commitments under the CBD, the Nagoya Protocol, and other frameworks that emphasise ILK. However, Article 101 clarifies that principles in Chapter 11 are not directly legally enforceable by courts but guide government in making and applying laws. Courts can consider these principles when interpreting related legislation.

Article 100 – State Ownership of Natural Resources

Article 100 establishes that land, water, and natural resources belong to the State where they are not otherwise lawfully owned. This creates a default state ownership of natural resources in areas without documented legal ownership. While contested legal interpretations exist, this may mean the State has authority over the resources about which communities hold traditional knowledge, which is a considerable factor in ILK maintenance and promotion.

4.3.2. National Laws

Underpinned by the constitutional framework, Namibia has developed legislation that addresses ILK in biodiversity and natural resource management, ranging from explicit recognition and protection to implicit acknowledgment through community-based management structures. The Constitution enables these laws by recognising customary law and guaranteeing cultural rights and, especially as a state with an almost monist system, Namibia's ratification of international treaties strengthens the normative basis for protection.

Access to Biological and Genetic Resources and Associated Traditional Knowledge Act (Act 2 of 2017)

The ABS Act (2017) is the key statute for the recognition and protection of ILK in Namibia. The ABS Act (2017) (2017) is the key statute for the recognition and protection of ILK in Namibia. Administered by MEFT, it establishes clear community rights over knowledge, innovations, and practices linked to biological and genetic resources. The Act regulates access to biological and genetic resources and their associated traditional knowledge, establishes mechanisms for prior informed consent, and provides for fair and equitable benefit-sharing.

The Act recognises local communities as rights holders over their genetic resources and associated traditional knowledge. These rights are inalienable, meaning they cannot be transferred or taken away. Prior informed consent from local communities is required before access or use of their knowledge. The Act mandates access and benefit-sharing agreements to ensure that communities receive both monetary and non-monetary benefits through mutually agreed terms between access seekers and rights holders. A significant feature of the Act is its recognition of customary law as the basis for determining ownership and use of traditional knowledge. This gives legal standing to community protocols, allowing communities to apply their own customary rules and decision-making processes in determining access to their

knowledge. Traditional knowledge receives protection regardless of whether it has been formally registered. The Act acknowledges that non-registration does not render traditional knowledge unprotected.

The Act establishes a dedicated Access and Benefit Sharing Office within MEFT to manage permits, compliance, and benefit-sharing. This institutional setup provides a specific administrative mechanism for implementing the Act's provisions. The legislation explicitly aligns Namibia with international obligations under the CBD and the Nagoya Protocol.

The development of the ABS Act was significantly influenced by the *Hoodia gordonii* case. The San people's traditional knowledge about Hoodia's appetite-suppressant properties was commercialised without their prior consent or benefit-sharing (Wynberg et al., 2009). The subsequent negotiated agreement between the San and relevant parties established benefit-sharing arrangements and demonstrated both the value of traditional knowledge and the need for protective legislation. This case was instrumental in driving momentum toward enacting the ABS Act, alongside similar concerns about Devil's Claw and other instances where communities' traditional knowledge was exploited without fair compensation.

While the Act provides robust legal protection on paper, implementation faces challenges. Definitions of "local community" remain ambiguous. Communities have limited capacity to engage with complex permit processes. Gaps exist in effective enforcement of benefit-sharing arrangements. Implementation challenges identified in research and during our 2025 ILK Workshops included limited participatory consultation and technical capacity at local level, the narrow and ambiguous definition of "community," inadequate recognition of the non-commodity cultural value of traditional knowledge and gaps in coverage. The Act's focus on genetic resources means that cultural expressions, traditional aquaculture knowledge, and practices not directly tied to genetic resources may remain inadequately covered. Participants felt that export control mechanisms for traditional knowledge products also remain underdeveloped.

Traditional Authorities Act (Act 25 of 2000)

The Traditional Authorities Act (2000), administered under the Ministry of Urban and Rural Development, affirms the authority of recognised traditional leaders to administer customary law within their communities. Although the Act is primarily concerned with governance, land allocation, and dispute resolution, it provides an indirect but important framework for ILK. Traditional Authorities play an important local role in regulating access to natural resources, maintaining customary practices, and overseeing cultural expressions tied to land and heritage. They serve as key custodians of knowledge relating to sustainable land use, resource management and cultural traditions. While the Act does not itself define or regulate traditional knowledge, it gives legal recognition to the institutions and leaders who often manage customary knowledge and resource use at the local level.

This statutory recognition of Traditional Authorities creates a formal channel through which local knowledge may be expressed in community decision-making about land use, grazing patterns, customary natural resource rules, and other matters governed by customary law. The Act's recognition of Traditional Authorities is essential infrastructure for any policy framework that seeks to work with ILK, as these authorities are often the de facto custodians and interpreters of that knowledge within their communities.

National Heritage Act (Act 27 of 2004)

The National Heritage Act (2004), administered by the National Heritage Council under the Ministry of Education, Innovation, Sports, Arts, and Culture, focuses on safeguarding Namibia's cultural heritage. The Act establishes the National Heritage Council, which is mandated to identify, protect and manage heritage resources. While the Act is primarily oriented towards monuments, sites and artifacts, its scope extends to intangible elements such as oral traditions, rituals, and cultural practices that are central to ILK. This creates a potential avenue for protecting traditional ecological knowledge when it is expressed as cultural heritage practices, ceremonies, or oral traditions about natural resource use.

However, the Act does not devolve strong rights to communities themselves. Communities remain dependent on state-led processes of recognition and management. The National Heritage Council determines what qualifies as heritage worthy of protection, and communities must work through this state institution rather than having direct control over their heritage resources. This means that while the Act can protect certain expressions of ILK framed as cultural heritage, the protection is mediated through state institutions rather than being community controlled. The Act's orientation is more toward heritage preservation than toward the kinds of access, use, and benefit-sharing concerns that arise when traditional knowledge has commercial applications.

Environmental Management Act (Act 7 of 2007)

The Environmental Management Act (2007) is relevant to ILK but is limited in scope. It requires Environmental Impact Assessments for activities with significant environmental impacts, creating a formal mechanism through which ILK could inform project planning and environmental decision-making. However, the Act requires only a basic standard of consultation and does not define community processes and requirements in great detail, hence in practice, notification of environmental impact assessment (EIA) processes often fails to reach affected communities adequately, with initial scoping reports frequently lacking identification of impacts relevant to Indigenous knowledge systems and resource use. In theory the Act establishes the legal framework for environmental governance that overlaps with community resource management practices, particularly regarding natural resources that communities depend on for livelihoods and cultural practices. However, the Act's implementation may in some cases provide protections for communities, and at

other times projects affecting communities may only become well known after key decisions have been made.

Inland Fisheries Resources Act (Act 1 of 2003)

The Inland Fisheries Resources Act (2003) recognises traditional knowledge indirectly by exempting traditional fishing gear from licensing restrictions and other regulatory requirements that apply to fishing operations using modern gear. This acknowledgment respects customary fishing practices sustained through generations of local ecological knowledge, however the absence of a clear definition of subsistence use and thresholds informed by ILK gives rise to commercial exploitation which compromises the ability to support equitable livelihoods for riverine communities. Traditional Authorities could enforce ILK and its rules, including regulating access to fishing by outsiders, however the shift from customary to statutory laws discouraged traditional leaders to continue enforcing it, leaving a power vacuum not filled by the ministry in charge of fisheries.

The Act also provides for the establishment of community-based fisheries reserves and requires fisheries management plans for these reserves. These management plans are fundamentally grounded in local knowledge. Communities draw on their traditional understanding of fish behaviour, seasonal patterns, sustainable harvest levels, and ecosystem dynamics to develop management strategies. By recognising traditional gear and enabling community-based management, the Act creates space for local knowledge to inform fisheries governance at local level. The extent to which this occurs in practice depends on implementation and genuine community participation in planning processes.

Forest Act (Act 12 of 2001)

The Forest Act (2001) makes indirect provision for traditional use of forest resources and establishes the legal framework for community forests. While it doesn't explicitly name traditional knowledge, the Act recognises it in two ways: The Act acknowledges customary subsistence use of forest resources but does not provide thresholds or a clear definition of subsistence use across various forest produce, which opens avenues for commercial exploitation at the expense of the wider local communities. Communities have long-standing practices of harvesting forest products for household needs based on traditional ecological knowledge about sustainable use levels, appropriate harvesting techniques, and seasonal patterns.

Community forests require management plans that, in practice, incorporate communities' traditional knowledge about forest ecology, resource availability, regeneration cycles, and sustainable harvesting practices. The management planning process creates opportunities for local knowledge to be documented and applied, though the degree to which this happens depends on how participatory the planning process is. Community forests have become significant vehicles for applying local knowledge in forest management. Communities use traditional knowledge to guide

decisions about harvesting quotas, protection of sacred sites, fire management, and sustainable use of non-timber forest products.

Nature Conservation Ordinance (Ordinance 4 of 1975, as amended)

The Nature Conservation Ordinance (1975), particularly through amendments that enabled the conservancy program, provides for the establishment of communal conservancies. While the Ordinance doesn't explicitly reference traditional knowledge, the conservancy model recognises it as integral to conservation and wildlife management. Conservancies operate on the principle that communities living with wildlife have valuable knowledge about animal behaviour, movement patterns, habitat use, and sustainable offtake levels. Conservancy management plans and practices draw heavily on this traditional ecological knowledge, combined with scientific monitoring.

Traditional knowledge about wildlife corridors, breeding areas, seasonal movements, and human-wildlife coexistence strategies informs conservancy management decisions. This knowledge is often informal rather than being explicitly documented in management plans. An explicit encouragement to integrate ILK in management plans would endorse and support the legitimacy of ILK in wildlife management.

Intellectual Property Legislation

Several intellectual property related laws and agreements provide additional protection for traditional knowledge, particularly in relation to commercial exploitation. The Industrial Property Act (2012) (Act 1 of 2012) includes provisions requiring disclosure of origin for patents based on genetic resources. This requirement serves as a monitoring and transparency tool to prevent biopiracy by making it mandatory for patent applicants to declare if their invention draws on genetic resources. This creates a paper trail that can be used to enforce benefit-sharing obligations. While disclosure of origin is valuable, it does not automatically trigger benefit-sharing or prevent misappropriation if communities are unaware of patent applications or lack resources to challenge them. Namibia signed the new World Intellectual Property Organisation (WIPO) Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge in 2024. The treaty creates a mandatory requirement for patent applicants to disclose the origin of any genetic resources and associated traditional knowledge used in their inventions. This international instrument strengthens protection beyond national borders by harmonising disclosure requirements across jurisdictions. Namibia is currently domesticating this treaty into national law. The domestication will need to align with existing provisions in the Industrial Property Act and the ABS Act to create a coherent framework for monitoring and enforcing rights related to traditional knowledge in patent applications.

The Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore (2010), adopted under the African Regional Intellectual

Property Organisation (ARIPO), provides regional protection for traditional knowledge and folklore. The Protocol recognises communities as beneficiaries and holders of rights in traditional knowledge. It prohibits unauthorised use of traditional knowledge that causes economic or moral prejudice. Traditional knowledge doesn't need to be fixed in material form to receive protection. The Protocol provides for equitable benefit-sharing when traditional knowledge is used commercially, and regional consistency in protecting traditional knowledge across ARIPO member states, though effectiveness depends on national implementation and cross-border enforcement mechanisms.

4.3.3. Policies and Strategies

Namibia has developed a broad range of policies and strategies that engage with ILK. The level of recognition varies, ranging from explicit provisions for documentation and benefit-sharing to implicit acknowledgment through participatory and devolved resource management frameworks. These policy instruments complement the legal framework by providing practical guidance for incorporating ILK into biodiversity management, natural resource governance, and rural development.

Draft National Indigenous Knowledge Systems Policy

The Draft National Indigenous Knowledge Systems Policy, led by the Ministry of Education, Innovation, Youth, Sport, Arts and Culture in collaboration with the NCRST, represents Namibia's effort to create a comprehensive national framework specifically for ILK. The policy aims to safeguard and promote ILK and to enable the sustainable utilisation of knowledge resources to the benefit of the holders of such knowledge.

When finalised, the policy will provide overarching guidance for ILK integration across sectors, addressing current gaps where ILK is only partially recognised. The draft policy's objectives to ensure equitable benefit-sharing align with the Access to Biological and Genetic Resources and Associated Traditional Knowledge Act (2017), while its safeguarding provisions complement the National Heritage Act (2004) and intellectual property legislation. Its promotion and coordination functions will help reinforce the sectoral policies that currently or in the future promote ILK application in agriculture, fisheries, forestry, and biodiversity management. The draft policy's focus on ensuring benefits flow to knowledge holders aligns with and would link with the benefit-sharing provisions in the ABS Act.

National Biodiversity Strategy and Action Plans

Namibia's NBSAP II (2013–2022) (2014) explicitly acknowledged the role of ILK in biodiversity conservation and sustainable use. The NBSAPs call for the participation of local communities in planning and implementation, creating programmatic space for ILK and community participation mechanisms to be integrated into ecosystem management and reporting under the CBD.

The NBSAP framework translates Namibia's international commitments under the CBD, including Article 8(j) on traditional knowledge, into national policy and planning. In recent years, this framework has evolved through efforts to make ILK more visible and better integrated into biodiversity policy. This aims to shift the status quo from acknowledging ILK to actively documenting it, analysing its relevance and including it systematically in planning and reporting. By linking community knowledge with national and international biodiversity goals, Namibia's NBSAPs have become a key platform for bridging traditional and scientific approaches to environmental stewardship.

The National Biodiversity Task Force has been active since the late 1990s as a multi-stakeholder forum involving eight ministries, tertiary education institutions, parastatals, the private sector, NGOs and unions. This Task Force established 21 working groups to address priority biodiversity issues and develop the NBSAP. Research indicates that while Namibia's biodiversity policies increasingly recognize ILK and align with international agreements such as the CBD and IPBES, the translation of these commitments into concrete actions remains inconsistent, with many policies still lacking specific mechanisms for ILK inclusion.

NBSAP2 set a 2020 strategic goal to enhance implementation of NBSAP2 through participatory planning, knowledge management and capacity building, with "traditional knowledge and the innovations and practices of indigenous and local communities relevant to the conservation and sustainable use of biodiversity recognized, respected and promoted." While important steps were taken, for example most the ABS Act and growing acknowledgement of ILK in GRN, implementation has lagged behind contributing to the continuing limitations detailed in this report.

The Task force was converted into the National NBSAP Steering Committee, which was then merged to the Rio Conventions Steering Committee as explained in Section 4.2.

Community-Based Natural Resource Management

The CBNRM approach, originating from Namibia's post-independence natural resource reforms in the 1990s and framed in the Policy on Wildlife Management, Utilisation and Tourism in Communal Areas (1995) remains one of Namibia's most significant policy frameworks relating to ILK, even though it was not explicitly designed as an ILK mechanism. CBNRM empowers local communities to participate in shared governance arrangements, generate economic benefits through conservation, strengthen local institutions, and promote rural development. The approach is based on devolution of rights over natural resources, promotion of sustainable use, and local knowledge management.

By devolving rights to communities, CBNRM creates conditions where communities are encouraged to develop place-based management plans that draw on their traditional ecological knowledge. This is particularly evident in community forests

and community fisheries reserves, where management plans engage with or build on local knowledge about biodiversity, seasonal patterns, sustainable harvest levels, and ecosystem dynamics. The conservancy model under CBNRM has become a practical means for communities to apply ILK in wildlife management, though this application is often informal rather than explicitly documented or institutionally recognised as ILK integration. While communities are free to use their discretion to apply ILK when taking decisions, a specific mention reference in the CBNRM policy would elevate the relevance and encourage its application.

Human-Wildlife Conflict Management Policy

The HWC Management Policy (2007), issued in 2009 and revised in 2018, establishes mechanisms to promote coexistence between people and wildlife and to provide compensation for damage. It adopts an integrated and flexible approach, offering a framework that meets Namibia's national and international commitments to biodiversity conservation while considering the rights and development needs of communities.

Although not framed as an ILK policy, it creates opportunities for traditional knowledge about wildlife behaviour, seasonal movement patterns, and coexistence strategies to inform conflict mitigation approaches. Communities living with wildlife have generations of knowledge about predicting animal movements, protecting livestock and crops, and managing landscapes to reduce conflict. The policy's emphasis on stakeholder participation complements the CBNRM and NBSAP objectives of linking biodiversity conservation with community wellbeing. As with the closely related CBNRM policy, acknowledging ILK in the policy would encourage the use of often efficient and cost-saving methods.

Policy on Tourism and Wildlife Concessions on State Land

Issued by MEFT in 2007, the Policy on Tourism and Wildlife Concessions on State Land (2007) provides principles and guidelines for allocating concessions to communities living adjacent to or within protected areas. By recognising the interests and potential benefits for these communities, the policy acknowledges their longstanding relationships with wildlife and landscapes. The allocation of concessions to local communities creates economic incentives for conservation and opportunities for communities to apply place-based knowledge in tourism and wildlife management enterprises.

As with many of the policies detailed, limitations in the implementation of this policy mean that while routes for community inclusion are established, they are not always followed. There is no formal recognition of ILK nor requirement in the policy to consult with or involve ILK holders, to document or protect sacred sites or cultural practices, or to integrate ILK into wildlife conservation, tourism planning, or benefit-sharing regimes.

Guide to Indigenous Peoples' Rights in Namibia (Office of the Ombudsman)

The Office of the Ombudsman's Guide to Indigenous Peoples' Rights in Namibia (2008) highlights that access to land for Indigenous Peoples is regulated by Article 16 of the Constitution and by legislation such as the Communal Land Reform Act (2002) (Act 5 of 2002). This guidance document is significant because it connects land rights to Indigenous Peoples, specifically, providing interpretation of how constitutional and statutory provisions apply to Indigenous communities. Secure land access is essential for the maintenance and application of traditional ecological knowledge, as knowledge systems are typically place-based and depend on continued connection to territory. The guide also references the Traditional Authorities Act (2000) (Act 25 of 2000) as part of the customary governance framework underpinning land and knowledge systems.

Draft White Paper on the Rights of Indigenous Minorities in Namibia

The Draft White Paper on the Rights of Indigenous Minorities (currently referred to as Marginalised Communities) in Namibia represents a significant policy development specifically addressing the rights of Indigenous Peoples in the country, though this White Paper has not yet been approved by Cabinet and hence is not a public document. The draft White Paper addresses historical marginalisation and aims to provide a framework for recognising and protecting Indigenous Peoples' rights, including their rights to land, culture, and traditional knowledge. When finalised, this policy instrument will complement existing legislation and policies by providing specific guidance on Indigenous Peoples' rights that goes beyond the general cultural rights protections in Article 19 of the Constitution. The White Paper's attention to Indigenous Peoples as distinct rights holders has implications for how their traditional knowledge is recognised and protected within biodiversity governance and natural resource management frameworks.

Revised National Food and Nutrition Security Policy (2021)

The Revised National Food and Nutrition Security Policy (2021) explicitly incorporates ILK in its strategies. It promotes the production and consumption of locally grown, indigenous, nutrient-rich foods and supports climate-smart, conservation, and organic agricultural practices that often align with traditional farming methods and community-based adaptation strategies. By emphasising Indigenous and locally adapted foods, the policy recognises that traditional food systems contain knowledge about locally adapted crops and livestock breeds, seasonal cultivation patterns, food preservation techniques, and nutritional values. This creates incentives for maintaining agricultural biodiversity and the knowledge it supports. The policy's focus on climate adaptation also opens pathways for traditional knowledge about drought-resistant crops, water management and resilient farming systems.

While highly relevant to ILK this policy is not well publicised, and the scale of its implementation remains limited. Despite supporting locally grown and indigenous foods, the policy does not explicitly recognise ILK as a knowledge system. ILK holders, traditional authorities, and community experts are not identified as stakeholders in policy design or arrangements. The policy promotes climate-smart and conservation agriculture, but does not specify how traditional farming methods, seed systems, seasonal knowledge, food preservation techniques, or wild food use should be documented, protected or integrated.

Strategy for the Transformation of the Agri-Food Sector (2025/26–2030/31)

The Strategy for the Transformation of the Agri-Food Sector (STAS) (2024) led by the Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR), explicitly promotes the breeding and consumption of adapted indigenous species and encourages the documentation and dissemination of ILK and coping practices to support climate change adaptation. The strategy links to Namibia's Vision 2030 goals and acknowledges that traditional knowledge holds valuable insights for climate resilience. Indigenous breeds are typically adapted to local environmental conditions, including drought, heat and diseases. Traditional farming practices often include strategies for managing climate variability. By encouraging documentation and dissemination, the strategy moves beyond protecting ILK to promoting its use in agricultural transformation.

Namibia Sustainable Bioeconomy Strategy (2024–2029)

The Namibia Sustainable Bioeconomy Strategy (2024) explicitly integrates ILK. It aims to enhance the quality and market potential of bio-based Indigenous products and services, promote bio-innovation from indigenous biological resources, and establish a platform for marketing indigenous innovations and their benefits. The strategy recognises that indigenous biological resources and the knowledge associated with them can serve as foundations for sustainable economic development. The strategy aligns with regional commitments under the Southern Africa Development Community (SADC) Bio-Innovation Strategy and the principles of the Nagoya Protocol on benefit-sharing, creating linkages between national policy and regional and international frameworks for protecting and promoting traditional knowledge.

The Namibia Sustainable Bioeconomy Strategy 2024-2029, while explicitly aiming to promote indigenous products and protect ILK, lacks direct community representation in governance, has budgetary constraints, and no specific benefit-sharing pathways. It does not address community control over biological resources and positions ILK as a cross-cutting issue rather than maintaining it as a distinct strategic focus, despite its progressive language.

White Paper on the Responsible Management of the Inland Fisheries of Namibia (1995)

The White Paper on the Responsible Management of the Inland Fisheries of Namibia (1995) recognises traditional fishing gear and practices as sustainable. This early policy foundation, dating from 1995, informed the Inland Fisheries Resources Act (2003) (Act 1 of 2003), which exempts traditional fishing gear from licensing requirements. The White Paper's acknowledgment that traditional methods are sustainable validates local knowledge about appropriate fishing techniques that minimise environmental impacts while meeting subsistence needs. However, Namibia's Fisheries White Paper focuses on industrial and commercially oriented marine fisheries, hence systems and quota structures tend to favour larger operators.

National Intellectual Property Policy (2019-2024)

The National Intellectual Property Policy (2019) lapsed and will be updated. As it stands it recognises the value of traditional knowledge and the need for its protection. However, it does not provide a dedicated legal mechanism specifically for traditional knowledge protection, relying instead on broader intellectual property frameworks that may not address the nature of Indigenous knowledge systems.

Namibia Arts, Culture and Heritage Policy (2025/26 to 2029/30)

The Namibia Arts, Culture and Heritage Policy was approved in 2025 and acknowledges the importance of traditional knowledge and cultural expressions as integral components of Namibia's cultural heritage. It recommends further development of protective systems for traditional knowledge and cultural practices, though specific implementation mechanisms are not specified. The policy is not widely available and has not been successfully disseminated.

National Policy on the Utilization of Devil's Claw (2010)

Devil's claw represents a rare example of a species-specific policy framework in Namibia. This policy regulates the harvesting and trade of Devil's Claw (*Harpagophytum ssp*), which is Namibia's most established commercial indigenous plant product. The policy was developed through the Devil's Claw Working Group established in 1999 as a forum for stakeholders to develop policies regulating harvesting and trade, and to serve as the focal point for international consultations including proposals to list devil's claw under the Convention on International Trade in Endangered Species of World Fauna and Flora (CITES). It addresses sustainable harvesting practices and trade regulations. At the time of writing consultations are being held to update the policy (Ministry of Environment and Tourism, 2010).

Strategy and Action Plan: Promoting Indigenous Fruit in Namibia (Indigenous Plant Task Team)

Established in 2000 as the Indigenous Fruits Task Team and renamed in 2003 to cover all indigenous plant products, the Indigenous Plant Task Team (IPTT) is a government-mandated multi-stakeholder forum coordinating the development and promotion of indigenous plant resources, with the IPTT Secretariat located at the National Botanical Research Institute. The IPTT prioritizes resources with product development potential for technical and financial support at appropriate stages.

The IPTT's governance approach encourages stakeholder participation in pilot-scale projects for sustainable commercialization. In fulfilling its commercialization roles, the IPTT handles cases where access to genetic resources of indigenous plants is arranged for universities, research institutes, or private entities, contributing to national debates on access and benefit sharing under the CBD.

The IPTT operated with a Strategy and Action Plan using a flexible "pipeline approach" where resources with product development potential are prioritized for technical and financial support. This market-driven approach has supported development of products from devil's claw, marula, !Nara, Ximenia, *Commiphora wildii*, Kalahari melon, morama bean, and other species. The IPTT provided coordination rather than formal regulation, with most species governed through customary law at community level and incremental governance arrangements developed through pilot projects. Unlike devil's claw, most indigenous plants do not have dedicated national policies, with the IPTT approach leaning towards flexible management over species-specific regulatory frameworks. See Section 4.2.2. for current challenges to its operations.

Governance of Indigenous Plant Products through Customary Law

For most indigenous plants beyond Devil's Claw, governance relies heavily on customary law and community norms rather than formal state policies. Marula, for example, is governed primarily through customary rules which remain strong at community level, with limited formal state regulation. The IPTT has facilitated incremental governance arrangements for various species including Kalahari melon *(Citrullus lanatus)*, Ximenia (*Ximenia americana)*, and Namibian myrrh through pilot projects and multi-stakeholder collaboration, but comprehensive species-specific protocols remain limited. This reliance on customary governance reflects the practical reality that communities retain detailed traditional knowledge about sustainable harvesting, processing, and use of these resources, and formal policies risk disrupting effective local management systems. At the same time, this can be a challenge for ABS implementation under the Nagoya Protocol, as international buyers need transparency for supply that customary governance may not provide.

4.3.4. Gaps Relating to Policy, Systems and Processes

Namibia has developed relatively progressive policy frameworks acknowledging the importance of ILK in biodiversity conservation and sustainable resource management. However, significant gaps persist between policy commitments and practical implementation, limiting the meaningful integration of ILK into national decision-making processes.

Policy and Legal Framework Gaps

ILK remains largely implicit rather than explicit in biodiversity-related policies. While traditional practices underpin conservation and sustainable use across Namibia's policy landscape, ILK is rarely systematically defined, protected, or mandated as a distinct knowledge system requiring specific governance arrangements. The NBSAP, CBNRM Policy, and sectoral policies acknowledge community participation but do not establish clear mechanisms for integrating this into biodiversity management.

Legal protections do not provide holistic protections for ILK. The ABS Act focuses on genetic resources, with cultural expressions, traditional practices and traditional fisheries knowledge less covered. The draft NIKS Policy has been repeatedly delayed since 2016, and even when finalised, it will have to be converted into enforceable legislation. Export control mechanisms for traditional knowledge and resources do not exist. Sacred natural sites, cultural landscapes, and spiritually significant areas have no significant legal protection despite serving as critical nodes for ILK transmission and practice.

Lastly, mechanisms for integrating customary governance with formal frameworks have not been well developed. Customary resource management systems for plants like marula may be more effective than state regulation, but policies provide no guidance on how these systems will be recognized, supported or protected. The Bioeconomy Strategy presentation of ILK as a cross-cutting issue rather than a distinct strategic focus signals that ILK may be viewed primarily as a resource input for commercialization and production, rather than an established knowledge system that requires protection.

Systems and Institutional Gaps

In general, in Namibia, governance structures exclude primary producers and indigenous knowledge holders. Multi-stakeholder bodies like the IPTT are comprised of government ministries, NGOs and academic institutions. This reproduces historical power imbalances where decisions about knowledge systems are made by those outside the communities that hold and practice the knowledge.

Coordination mechanisms have not been successful in the long-term, and policy implementation requires cross-ministry dialogue for issues tied to ILK but concrete mechanisms for this coordination have not been developed. For example, the

IPTT transformed from a successful coordination platform into an implementation body with overly broad functions that stretched resources thinly. Inter-ministerial coordination remains weak; MEFT and MAFWLR do not coordinate effectively on competing land uses in communal areas, and mining exploration proceeds without protections for communities despite threats to ILK sites.

Monitoring and evaluation systems do not yet track ILK integration. The Bioeconomy Strategy includes generic indicators for biomass production but lacks specific measures for ILK protection effectiveness, benefit-sharing outcomes reaching knowledge holders or community empowerment. There is limited scope for accountability mechanisms to allow communities to challenge decisions affecting their knowledge and resources, which principally rely on petitioning the government or costly and time-consuming approaches through the courts.

No system exists for valuing indigenous knowledge economically. Communities lack frameworks for determining what their knowledge is worth in commercial contexts, severely undermining their negotiating position with researchers and commercial interests. This makes it problematic to assert fair compensation or benefit-sharing arrangements.

Urban planning systems exclude ILK. Research in Windhoek's Havana settlement showed that no mechanisms exist to integrate ILK into urban planning, zoning, or land-use schemes. Urban TAs lack formal recognition and cultural practice spaces are not designed or protected in town planning systems.

Lastly, the national curriculum does not meaningfully integrate indigenous knowledge in the formal education system. Boarding schools and academic calendars disconnect young people from cultural seasons and transmission contexts. No formal system exists to accredit or compensate ILK experts as educators. This limits intergenerational transmission at its foundation.

Process Gaps

Communities highlight that consultations focus on securing buy-in more often than integrating knowledge. While Namibia emphasizes consultations with Traditional Authorities and communities when developing legal frameworks, these processes typically do not explicitly call for ILK to be shared or incorporated into policy substance. Communities are consulted in later implementation phases rather than involved as co-designers from the outset. The process becomes about acceptance rather than meaningful consideration of alternative knowledge systems.

The EIA procedures do not explicitly include ILK. The Environmental Management Act requires consultation but does not define higher levels of requirements for consultations such as FPIC. EIAs do not systematically require ILK contributions or embed ILK indicators in impact assessments and mitigation plans. Traditional Authorities and communities often receive EIA notices late or not at all. In practice,

communities may not learn about projects affecting their territories until after key decisions are made.

Documentation is inadequate. Publicly available ILK documentation sources are limited, with highly uneven regional coverage. Omaheke, Hardap, and Karas have very few sources. Marine, coastal, desert, and climate adaptation knowledge are poorly represented or absent. Existing documentation typically describes what plants are used for but not preparation methods, measurements, timing, or cultural protocols that constitute actual knowledge. Much documentation is produced by external researchers who take materials away without communities retaining control over narratives or attribution.

No data sovereignty frameworks exist. Namibia has no structured system for ILK data governance, community-controlled repositories, protocols for digital archiving, or data access controls. As universities, NGOs, and companies digitize ILK, communities lack mechanisms to control how their knowledge is stored, accessed, or used.

Translation and language access remain inadequate, and policy materials, legal information, and capacity-building resources are rarely available in local languages. While oral presentations are effective for communication, some community members have highlighted that this results in a lack of written resource material for their use. Language barriers prevent communities from understanding and asserting their rights under existing frameworks.

While the ABS Act establishes principles of benefit-sharing, no mechanisms ensure that monetary or non-monetary benefits reach individual knowledge holders. Communities do not receive transparent accounting of benefit flows. Monitoring of ABS agreements is lacking in practice. People continue to report that researchers and filmmakers document their culture and take materials away while communities receive minimal returns.

Implementation Gaps

Land tenure remains a fundamental barrier given the intrinsic ties between ILK and specific geographic areas. Communities cannot control access to biological resources or ILK practice sites without secure group land rights. In southern regions, knowledge holders cannot legally reach sites on private land and risk arrest to access ancestral areas.

Funding remains uncertain and inadequate. Policies like the Bioeconomy Strategy acknowledge funding gaps but provide no concrete budgets or secured commitments beyond aspirational statements about seeking donor support. Workshop participants expressed skepticism that capacity-building translates to implementation, with some questioning why policies take years to finalize and whether government can sustain work beyond one-off activities. At the same time,

projects often operate according to donor timelines that are incompatible with ILK transmission cycles.

While community conservation and CBNRM incorporate aspects of ILK, conservation objectives are principally driven by external theory rather than local knowledge. Relations with communities in or neighbouring protected areas vary dramatically between Bwabwata, Etosha, and Namib-Naukluft and highlight a lack of consistent policy application towards communities. Namibia's climate policies reference ILK but do not integrate it into vulnerability assessments, adaptation indicators or resilience frameworks.

Commercial extraction continues without adequate protections, with products and practices documented by outsiders not attributed to knowledge holders. The greater benefits of commercialization of devil's claw, Marula oil, !Nara products, and cosmetics are often not fairly shared with the knowledge custodians despite policy commitments to equitable benefit-sharing and prior informed consent.

Many ILK systems rely on gender-specific knowledge roles for plant knowledge, healing, and ceremonies. Policies do not address gendered ILK systems, barriers facing women knowledge holders, gendered access to land and resources, or how schooling and migration undermine female-led transmission. This represents a significant gap aligned with international CBD guidance on gender-responsive approaches.

The disconnection between progressive policy language and implementation reality remains the critical overarching gap. Namibia has developed relatively strong frameworks acknowledging the importance of ILK, community rights, and benefit-sharing principles. However, persistent barriers continue in the form of political momentum, adequate resourcing, enforcement, power-sharing versus consultation, and addressing fundamental barriers like land tenure. Communities in the first workshop expressed frustration based on past experiences that institutional mechanisms often fail despite stated commitments, leading to skepticism about new initiatives to promote ILK.

4.4. Mainstreaming Indigenous and Local Knowledge into Policy and Implementation

This section examines current and ongoing processes to mainstream ILK into biodiversity policies and decision-making in Namibia, highlighting the many achievements and the persistent implementation challenges.

Access and Benefit Sharing Implementation

Namibia passed the Access to Biological and Genetic Resources and Associated Traditional Knowledge Act in 2017, which recognizes and protects community

intellectual property rights over genetic resources and associated traditional knowledge. Implementation challenges include limited participatory consultation and technical capacity at local level, narrow and ambiguous definition of community, and inadequate recognition of the non-commodity cultural value of traditional knowledge. The Act's focus on genetic resources means that cultural expressions, traditional aquaculture knowledge, and practices not directly tied to genetic resources remain inadequately covered. Export control mechanisms for traditional knowledge products remain underdeveloped. Workshop participants reported that people come to film or document culture and take materials away while communities receive only small returns, and that products and practices documented by outsiders are not attributed to knowledge holders.

Biocultural Community Protocols

Namibia has seen development in biocultural community protocols as tools for asserting Indigenous rights and knowledge systems. As discussed in Section 3.4.4., the OvaHerero of Kaokoland BCP was concluded in June 2024 after a four-year participatory process. The BCP provides clear terms for regulating access to traditional knowledge and natural resources while giving insight into important social and cultural values and as such is an opportunity for mainstreaming ILK.

4.5. Implementation Challenges

Land Tenure

The lack of secure group land tenure affects ILK preservation and mainstreaming. Communities cannot easily exclude others from territories or control land use decisions, especially communities who are more marginalized. In southern regions, traditional knowledge holders cannot legally reach sites and resources because large areas of pre-colonial community lands are under private ownership. People risk arrest to access ancestral sites. Workshop participants stated that traditional knowledge is nearly dying out in these areas as a result. Communities lack the physical access necessary to practice and transmit knowledge even where policies exist to protect and promote ILK.

National Park Management and Indigenous and Local Knowledge

A number of Namibian communities have a deep knowledge of biodiversity linked to ancestral land areas that are now protected areas/national parks. Integration of ILK into national park management shows different approaches across parks, and park residents or communities bordering parks rarely have established rights over access to land and resources.

In Bwabwata National Park, after a 1990 survey of people living in the park, management approaches were developed that incorporate residents' needs

through zoning systems and provide some, albeit limited, role in park management decisions. Hunting and tourism concessions have been awarded to the Kyaramacan Association representing the majority Khwe San residents of the park. However, the Khwe's presence remains legally ambiguous under land and conservation laws (national parks are state land), and their residential rights are not formally recognized despite de facto acceptance.

The Hai||om people were forcibly removed from Etosha National Park in 1954, ending their hunter-gatherer lifestyle in their ancestral territory (Dieckmann, 2012). Government has purchased freehold farms adjacent to the park for Hai||om resettlement. The Hai||om descendants of the Etosha area maintain they do not wish to lose their right to their ancestral land and in 2015 brought a representative action in the High Court seeking recognition of their rights over Etosha National Park. The case was subject to repeated delays and then dismissed by the Court of technical grounds before the issues were considered (*Tsumib and Others v Goverment of the Republic of Namibia and Others (SA 53 of 2019)*, 2022). A tourism concession has been awarded to the Hai||om for a culturally significant site in southern Etosha.

The Topnaar Nama continue to live in the Namib-Naukluft National Park along the Kuiseb River. They have been allowed to remain but do not have formal recognition of residential rights. Two tourism concessions have been awarded by MEFT to the Topnaar, though both have proved problematic in implementation. Apart from these concessions, they do not have means of benefitting from the park beyond grazing their own livestock and use of local natural resources.

Court Order Implementation

Court orders protecting land rights have not been implemented in a number of cases. San communities in both Nyae Nyae and N‡a Jaqna Conservancies won court cases against illegal grazing and fencing, but the orders to remove illegal fences and reduce illegal grazing were not implemented (The Namibian, 2021; *The Njagna Conservancy Committee v The Minister of Lands and Resettlement (A 276-2013)*, 2016). These issues rest upon the lack of implementation of laws and policies, not their absence, and this includes the need for local government officials to implement the national law, and for courts to ensure that rulings are implementable and of appropriate weight.

Valuation of Indigenous Knowledge

There is no system in Namibia for assessing the economic value of a given ILK. Participants in the workshop held in 2025 identified this as severely undermining communities' negotiating position with commercial interests or researchers, as they have no framework for determining what their knowledge is worth in commercial contexts.

Capacity and Resources for Policy Implementation

Participants in the multi-stakeholder workshop held in November 2025, under this project, questioned whether government could fund sustained implementation beyond one-off activities, noting that policies take years to finalize. Communities requested for effective written information in local languages, clarity on how filming and external documentation will be regulated to prevent exploitation, mechanisms to control export of traditional knowledge and resources, and clear answers on how to protect communities in mining areas.

4.6. Lessons from African Contexts

The African Context: Policy Development and Implementation Challenges

Over the past decade, several African countries have developed legislation recognizing ILK, though most progress has occurred at the policy level rather than in practical implementation (Filho et al., 2023; Ncube et al., 2025). This gap between legislative frameworks and operational outcomes has been documented across the continent and reflects the concern raised by the workshop participants in Namibia regarding implementation capacity. For Namibia, the primary lesson concerns the need to ensure that policy frameworks include clear enforcement mechanisms, adequate resource allocation, and structured community participation.

South Africa: Legislative Framework and Implementation Experience

South Africa has developed the most comprehensive ILK legislation in Africa through the Indigenous Knowledge (2019) which established the National Indigenous Knowledge Systems Office (NIKSO) and created legal frameworks for ILK protection (Ncube et al., 2025; Rivers et al., 2023). The country has integrated ILK provisions into sectoral laws including the Traditional Health Practitioners Act (2007), Marine Spatial Planning Act (2018), and Integrated Coastal Management Act (2008).

However, research indicates that implementation remains uneven. Despite increased documentation activity, practical integration in education and environmental management has been limited (Ncube et al., 2025; Seleke et al., 2025). Rivers et al. (2023) found that in the Algoa Bay marine governance project, integrating ILK required addressing resource access rights and establishing participatory governance structures in addition to policy recognition. These challenges are relevant to Namibia, particularly concerning coastal and marine knowledge systems.

The South African experience suggests that enacting IKS legislation represents a necessary but insufficient step. Namibia will need to ensure its draft IKS Policy

becomes enforceable legislation supported by dedicated institutional structures (whether NCRST or another body comparable to NIKSO) and designated budget allocations, while addressing the resource access constraints that affect ILK practice.

Regional Outlook on Indigenous and Local Knowledge Policy

Ghana has incorporated ILK into its National Climate Change Policy and agricultural frameworks, though implementation has been constrained by coordination challenges, resource limitations, and the absence of detailed operational strategies (Yeleliere et al., 2023). Zimbabwe shows similar patterns of policy recognition with implementation gaps (Nyahunda, 2024). Across the continent, relatively few countries - Benin, Burkina Faso, Somalia, South Africa, Zimbabwe - have explicitly integrated ILK into national adaptation plans and development strategies (Zvobgo et al., 2022).

Kenya and Ethiopia have initiated processes to integrate ILK into parliamentary frameworks and education systems, though these efforts remain at early stages (Hassen, 2025; Jumba & Mwiti, 2022). The barriers documented across these contexts parallel those identified in Namibia: limited institutional commitment, insufficient funding, constrained community participation mechanisms, and the continued predominance of conventional scientific frameworks in policy formulation (David, 2024; Filho et al., 2023; Gbadegesin & Gbadamosi San, 2024).

The regional experience indicates that policy references to ILK in climate, agriculture, and education sectors require supporting mechanisms including cross-ministerial coordination structures with clear mandates, designated budget allocations, and systematic monitoring frameworks. These elements are currently absent or underdeveloped in most African ILK policies.

Implementation Constraints: Documented Challenges

Systematic reviews demonstrate that most African policies acknowledge ILK without establishing mechanisms for practical integration and enforcement (Filho et al., 2023; Nyahunda, 2024; Yeleliere et al., 2023). Community participation often remains consultative rather than involving substantive decision-making authority (Williams et al., 2020; Yeleliere et al., 2023). Sectoral integration has been weakest in education and climate adaptation, despite their identification as priority areas (Jumba & Mwiti, 2022; Seleke et al., 2025; Zvobgo et al., 2022).

Research in Southern Africa found that government support for Indigenous knowledge remains limited relative to policy recognition (Ncube et al., 2025). Conventional scientific knowledge systems continue to predominate in actual decision-making processes (David, 2024; Gbadegesin & Gbadamosi San, 2024). Significantly, monitoring and evaluation of ILK mainstreaming represents a substantial research gap, with few countries implementing systematic assessment mechanisms to measure the translation of policy into practice.

Lessons for Namibia

Namibia can draw several lessons from African and international experiences when integrating ILK into national systems:

- **Ensuring Legal Status:** South Africa's 2019 Act offers a regional model of moving from policy to law, while the Philippines' Indigenous Peoples Rights Act shows how FPIC can be made legally binding and enforceable;
- **Institutional Architecture:** Creating a dedicated ILK office with executive powers, such as South Africa's NIKSO or Peru's National Institute for the Defence of Competition and the Protection of Intellectual Property, would strengthen coordination and implementation;
- **Resource Allocation:** Effective ILK integration requires clear budgets. Ghana's Traditional Medicine Practice Council and Panama's Indigenous Development Fund show the value of designated funding and community-managed benefit systems. Namibia could include ILK budget lines in the MEFT, NCRST, and other key ministries;
- **Participatory Structures:** Namibia could go beyond consultations to shared decision-making. Representatives from Indigenous Peoples and local communities could hold seats on NBSAP committees and approve ILK-related research;
- **Documentation Approaches:** Systems like South Africa's National Recordal System and India's Traditional Knowledge Digital Library protect ILK while supporting patent oversight. Namibia could adopt a similar tiered documentation model;
- **Land Access Integration:** Recognizing ILK is closely tied to land rights. Bolivia and Colombia illustrate how linking cultural and land-use rights can support this integration. In legislation development Namibia could connect this to Article 19 of the Constitution on cultural rights and Article 100 on resource access to create such linkages;
- **Monitoring Frameworks:** Nepal's Indigenous Peoples Act requires annual cross-ministry reporting with independent oversight, which is a common gap. Namibia's NBSAP III could include ILK indicators and reporting at the ministry level.

CHAPTER 5:

ILK Institutional Bodies

This section outlines Namibia's institutional arrangements for ILK, covering the key OMAs of government and other actors that carry ILK responsibilities. It also assesses the roles of Traditional Authorities as custodians of customary law and knowledge, the Business and Intellectual Property Authority (BIPA) in protecting traditional knowledge through intellectual property and related frameworks, and the Office of the Ombudsman in safeguarding human rights and ensuring fair, lawful administration where ILK, land, and natural resources are concerned.

5.1. National Commission on Research, Science and Technology

NCRST is the host of the National Indigenous Knowledge Systems Council (NIKSC), whose role and relevance will be outlined here.

NCRST is Namibia's lead institution for coordinating research, science, and innovation policy. As part of this mandate, NCRST is responsible for developing the National Indigenous Knowledge Systems Policy and associated mechanisms for documenting, protecting, and promoting ILK.

To guide this work, NCRST established the NIKSC in 2024, that is mandated to assist NCRST in the overall implementation of the Indigenous Knowledge Systems programmes. The Council brings together representatives from government, academia, Traditional Authorities, and community-based organisations to provide expert advice on the safeguarding and sustainable use of ILK. Its key functions include:

- Advising the NCRST Board on Indigenous knowledge policy and guide development and implementation of the national IKS programme;
- Steering the national IK database, ensuring ethical documentation, supporting fair access and benefit-sharing and protection of Indigenous Peoples/related rights;
- Promoting integration of IKS in the education curriculum and advising on capacity-building for Indigenous knowledge holders, researchers, teachers, and institutions;
- Awareness and value-promotion activities and assisting with resource-mobilisation;
- Guiding research development and innovation involving Indigenous knowledge, and encourage application across biodiversity, agriculture, health, climate, and other sectors;
- Provide liaison across OMAs, Traditional Authorities, academia, and communities; foster regional and international cooperation;
- Support monitoring of IKS policy and programme implementation.

5.2. Ministry of Environment, Forestry and Tourism

MEFT is responsible for environmental sustainability, biodiversity conservation, and tourism growth, in line with its mission "to promote biodiversity conservation in the Namibian environment" and its mandate is "to ensure the sustainable management of the country's natural resources and ecosystems, which includes promoting biodiversity conservation and responsible tourism development". As such, MEFT is pivotal for all aspects of biodiversity and ILK. It is the lead ministry for environmental conventions, policies and laws, access-and benefit sharing as well as the CBNRM program, devolving rights over natural resources to local communities. MEFT is also the custodian of forestry, wildlife, ABS related laws and regulations.

Access to Biological and Genetic Resources and Associated Traditional Knowledge Act (Act 2 of 2017)

MEFT is the custodian of the Access to Biological and Genetic Resources and Associated Traditional Knowledge Act, 2017 (in short ABS Act) and as such has a focal point for ILK including the clearing house mechanisms for use of traditional knowledge; the roles, functions and mechanisms will be outline here.

The ABS Act ensures that the use of genetic resources results in fair and equitable sharing of benefits with resource custodians, while incentivising their sustainable use and conservation. The ABS Act operationalises Namibia's commitments under the CBD and the Nagoya Protocol on Access and Benefit Sharing. It establishes the legal framework for regulating access to biological resources and their associated traditional knowledge and ensures that communities benefit fairly when their knowledge and resources are used. The Act gives MEFT responsibility for:

- Regulating access to genetic resources and associated traditional knowledge through a permit system;
- Ensuring that traditional knowledge holders provide prior informed consent before their knowledge is accessed;
- Requiring mutually agreed terms for benefit-sharing between users and communities, which may include both monetary benefits and non-monetary benefits;
- Overseeing the national ABS Clearing-House Mechanism to track permits, document knowledge where communities agree, and provide a transparent record of access and benefit-sharing arrangements;
- Recognising traditional knowledge as a form of intellectual property and protecting it from misappropriation and unauthorised use;
- Monitoring and ensuring compliance of users with national law and international agreements.

Community-Based Natural Resource Management

The MEFT also anchors ILK in biodiversity and natural resource governance through the CBNRM Programme. Under this programme, rights over wildlife and forest resources are devolved to conservancies and community forests, in line with the Nature Conservation Ordinance (1975), the Forest Act (2001) and the Inland Fisheries Resources Act (2003).

National Committee for the Rio Conventions

MEFT and its Department of Multilateral Environmental Affairs is in charge of coordinating the implementation of the Rio Conventions. To create synergies and to promote efficiency, the steering committees for the three Rio Conventions: CBD, UN Framework Convention on Climate Change (UNFCCC) and UNCCD) were merged to a National Committee for the Rio Conventions, bringing together government and non-governmental partners to guide the planning and implementation of the strategies and action plans, and to review progress. Sub-units for the respective conventions such as CBD and its NBSAP were meant to be maintained, however this has proven to be difficult to implement. While Indigenous Peoples and local communities are pivotal in the implementation of NBSAPs, they are not officially represented in the steering committee.

5.3. UNESCO-Chair

NUST hosts the UNESCO Chair for Digital Technology Design with Indigenous Peoples. The Chair is a new initiative in which “Indigenous communities are not only recipients of technology; they are architects of it”. It promotes community-led, participatory design processes where Indigenous knowledge holders co-create technologies that preserve, strengthen, and transmit ILK.

The Chair’s work is aligned with UNESCO’s LINKS Programme, which promotes the recognition and inclusion of ILK in biodiversity, climate, and policy processes. Through this collaboration, the NUST team works directly with communities such as the OvaHimba and San to co-design digital archives, mobile applications, and virtual reality tools that document oral histories, ecological knowledge, and cultural heritage in community-controlled formats.

Picture: Launch of UNESCO Chair in Digital Technology Design with Indigenous Peoples, 2025 (© NUST)

5.4. Traditional Authorities

Traditional Authorities represent a critical institutional framework within Namibia's governance structure for the management and protection of ILK. Established under the Traditional Authorities Act of 2000, they serve as custodians of customary law and traditional knowledge systems. Their functions include managing communal land, resolving local disputes, preserving cultural heritage, and promoting sustainable use of natural resources within their traditional jurisdictions. Traditional Authorities also serve as the link between communities and the formal government structure, ensuring that local voices and indigenous perspectives are represented in national development processes.

5.5. Business and Intellectual Property Authority

BIPA is Namibia's national focal point for the registration, administration, and regulation of intellectual property, operating as an agency under the Ministry of Industrialisation and Trade (currently the Ministry of Industrialisation, Mines and Energy (MIME)). In the context of ILK on biodiversity, BIPA carries a critical mandate to protect traditional knowledge through intellectual property mechanisms. Namibia adopted the Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore on 9 August 2010 in Swakopmund, within the ARIPO framework. The Protocol is a landmark regional instrument aimed at preventing misappropriation, misuse, and unlawful exploitation of African traditional knowledge and traditional cultural expressions.

BIPA's institutional role includes promoting the use and protection of traditional knowledge in Namibia and provides a working definition of traditional knowledge as knowledge originating from a local or traditional community, resulting from intellectual activity in a traditional context covering know-how, skills, innovations, practices, and learning embodied in traditional lifestyles or codified systems passed across generations, this explicitly includes agricultural, environmental, and medical knowledge, and knowledge associated with genetic resources.

5.6. The Office of the Ombudsman

The Office of the Ombudsman serves as an independent constitutional body tasked with protecting human rights and investigating complaints of violations or maladministration by public authorities in Namibia, including matters affecting Indigenous Peoples, local communities and their traditional knowledge systems. In the context of ILK, the Office explicitly includes environmental protection in its work investigating over-use of natural resources and failures to safeguard ecosystems alongside broader human rights oversight.

The Ombudsman has produced a Guide on Indigenous Peoples' Rights in Namibia (Office of the Ombudsman, 2008) that addresses land and natural resource rights, participation in decision-making, and protection of cultural heritage and traditional knowledge. The guide underscores that Indigenous land rights encompass the total environment of occupied areas and the cultural and spiritual values attached to land core to the intergenerational stewardship of biodiversity.

5.7. Other Relevant Institutions

Indigenous Plant Task Team

As outlined in the previous section, IPTT is a government-mandated multi-stakeholder forum coordinating the development and promotion of indigenous plant resources, which was lauded for its innovative approach in the region.

At the time of writing the IPTT has faced significant challenges that have undermined its effectiveness. The IPTT transformed from its intended coordination role into an implementation body, taking on overly broad functions that stretched its limited resources thinly and caused its original information-sharing focus to diminish. It failed to establish an enterprise ownership model for transferring publicly funded pilot projects to private entities, creating tensions over benefit distribution. Power imbalances emerged with governance dominated by government ministries, NGOs, and academics, while primary producers, private actors, and quality standardization bodies remained underrepresented. The focus on explorative studies came at the cost of support to small enterprises. These structural and functional problems led to inactivity, though the body still exists through the National Botanical Research Institute and remains with an important role should it be reestablished.

Participation of primary producers, private actors and quality standardization bodies remains limited in indigenous natural products governance structures. The 2025 ILK Workshop confirmed that communities feel inadequately represented in governance structures and that documentation processes are often extractive rather than community-controlled, with researchers taking materials away while communities receive limited returns.

Role of Non-Governmental Organisations

Integrated Rural Development and Nature Conservation (IRNDC), established by Garth Owen-Smith and Margaret Jacobsohn, has played a foundational role in Namibia's CBNRM programme since the 1980s. When Namibia gained independence in 1990, IRDNC's community-based approach resonated with the new government, and they were invited to help change national conservation legislation. By 1996, community-based conservation was integrated into government policy, and in 1998 the first four communities formed communal conservancies.

The approach laid the foundation for what became Namibia Association of CBNRM Support Originations (NACSO), involving 14 non-governmental organisations (NGOs) and the University of Namibia. Community-based conservation and participatory landscape management are central to Namibia's efforts to mainstream ILK, with methods such as the Adaptive Management of vulnerability and risk at conservation sites approach demonstrating that community assessments can complement scientific data and inform policy. These participatory processes have led to improved landscape management and greater legitimacy of decision-making and local ownership, which in turn have supported ILK use and preservation, though challenges remain in terms of coordination and capacity.

CHAPTER 6:

Conclusion and Recommendations

6.1. Conclusion

This National ILK Outlook ILK of biodiversity in Namibia highlights sources of documentation of biodiversity-related knowledge held by Indigenous Peoples and local communities, the systems which support their use and documentation and gaps that remain in their documentation and policy integration.

An initial desktop review and consultations with holders and custodians of ILK found that its documentation in Namibia is uneven across ecosystems, regions and themes. Terrestrial knowledge, particularly ethnobotanical information, has received the most attention from researchers, while marine and coastal systems, freshwater fisheries, and climate adaptation practices remain scarcely recorded. Geographically, regions such as Hardap, Karas and Omaheke are notably underrepresented in literature, a pattern that appears to correlate with lower population density and the absence of commercially significant plant species that have attracted research interest. Much of what has been documented focuses on listing species and uses rather than capturing the processes, practices and cultural contexts that give this knowledge meaning and reflects the knowledge held by communities in question.

The body of documented ILK is growing, but slowly, and remains predominantly driven by external researchers rather than by communities themselves. Co-creation processes have emerged only recently and remain limited in scope. Earlier works often lack explicit adherence to FPIC principles, community authorship is rare, and findings are frequently generalised to entire cultural groups without adequate justification. A substantial portion of existing knowledge remains unpublished or exists in formats and media that are not easily accessible, especially to communities themselves.

Beyond written outputs, ILK continues to be embedded and transmitted in oral traditions, cultural performances, living museums, festivals, films and everyday practice. These forms of knowledge transmission remain vibrant but vulnerable to being diminished or lost. Communities across Namibia report declining ILK transmission due to language loss, formal education systems that do not incorporate ILK, restricted access to ancestral lands, and socio-economic pressures that draw younger generations away from traditional livelihoods. Several groups noted that knowledge once embedded in daily life is disappearing as elders pass away without adequate mechanisms for intergenerational transfer. This signals an urgency to safeguard ILK, not only as a cultural asset, but as a rapidly diminishing knowledge reservoir relevant to biodiversity governance, use and conservation.

From a policy perspective, Namibia has made notable progress towards ILK mainstreaming. The ABS Act provides a legal foundation for protecting traditional knowledge, while the draft NIKS Policy signals government commitment to a more comprehensive framework. The CBNRM programme has created institutional space for community participation in natural resource governance. There is growing recognition of ILK in policy circles, though translating this recognition into substantive integration, and moreover implementation, will take time.

However, ILK remains poorly mainstreamed in biodiversity-specific policies. The policy analysis conducted for this National ILK Outlook found that while involvement of Indigenous Peoples and local communities in consultative processes is reasonably established, and the quality of such consultations is improving, these processes do not yet tap into ILK itself in meaningful ways. While communities are consulted, their knowledge systems are not systematically drawn upon to inform policy content, management decisions or monitoring frameworks. Explicit inclusion of ILK in biodiversity policy remains limited, and implementation of existing protections faces ongoing challenges including limited resources, capacity constraints and a lack of defined coordination mechanisms.

Promising initiatives were however found to be emerging. Digital documentation tools, Biocultural Community Protocols, community-led living museums and knowledge exchange indicate a shift toward more ethical, participatory and community-led approaches. The ongoing development of NBSAP III and national reporting under the KMGBF provide an important opportunity to embed ILK into national targets, monitoring frameworks and implementation strategies.

The enthusiastic consultations held during this National ILK Outlook process demonstrated strong community interest in documentation, provided it is community-led or co-led, culturally appropriate and accompanied by clear protections for intellectual property and benefit-sharing. Communities emphasised that ILK integration should not be symbolic. It should shape policy content, guide local management decisions and support stronger rights over land, resources and cultural heritage. They also stressed that not all knowledge should be documented, and that sacred or sensitive practices must remain protected according to customary protocols.

Namibia is approaching a pivotal moment for ILK integration within the processes of NBSAP III, strengthening of biodiversity governance and responses to climate change. ILK offers practical, place-based and culturally grounded strategies that can enhance resilience, equity and ecological integrity. Moving from disjointed documentation toward coordinated, community-led processes is essential. Likewise, transitioning from policy acknowledgement to meaningful inclusion will determine whether ILK can play an active role in national conservation pathways.
The recommendations outlined in this National ILK Outlook map a suggested pathway for achieving these goals. If implemented, they can position Namibia as a regional leader in community-led, transformative ILK mainstreaming, acknowledging its international commitments while safeguarding the knowledge

systems that have sustained its people and landscapes for generations. This report therefore aims to present a foundation to develop a long-term, collaborative national process to safeguard and elevate Indigenous and local knowledge for generations to come.

6.2. Recommendations

Fourteen National-level recommendations are split according to 6 key topics.

Topic 1: ILK Documentation, Knowledge Safeguarding, and Access

To address the lack of systematic documentation of ILK and potential repercussions for access-and-benefit sharing mechanisms, it is suggested to put mechanisms in place to ensure that documentation is done procedural and in line with agreed protocols, according to mutually agreed terms, as well as agreement on access to ILK for future use.

Recommendation 1: Establish a coordinated, community-led national documentation framework

- **a.** Create a national ILK documentation programme co-led by communities, in partnership with institutions such as NNF, NCRST, MEFT, UNESCO, UNAM, and NUST, leveraging multimedia methods (video, oral storytelling, photos, craft, AR/VR) to capture living practices, rituals, and ecological knowledge.
- **b.** Identify and address critical documentation gaps.
  - **i.** Prioritise underrepresented ecosystems: marine/coastal, and freshwater fisheries.
  - **ii.** Focus on poorly covered regions: Omaheke, Hardap, and Karas.
  - **iii.** Capture methods and processes (e.g., house construction, food preparation, tracking, medicinal dosages) rather than just lists of uses.
  - **iv.** Include gendered and youth knowledge, spiritual dimensions, and intergenerational transmission practices.
  - **v.** Account for regional priorities expressed by communities in the September 2025 consultation (See Section 1.1).
- **c.** Build regional documentation hubs at community-based organisations (CBOs), libraries and/or living museums, managed by local documentation teams pairing elders with youth.
- **d.** Develop a data governance framework to guide access and control to documented ILK.
- **e.** Digitize and archive ILK materials in a tiered-access national database (public / restricted / confidential), building on the work of the National Archives.

Recommendation 2: Apply ethical and protective protocols to ensure documentation is conducted responsibly and with community consent in line with the national access and benefit sharing Act and regulations

- **a.** Uphold FPIC at all documentation stages.

b. Apply a three-tier classification system (public / restricted / confidential) for documentation.
c. Protect the right not to document sensitive or sacred knowledge.
d. Ensure co-authorship, attribution, and benefit-sharing for all publications and outputs.
e. Require feedback processes, community validation and approval before external publication or use.
f. Create a protocol consolidating community engagement and documentation processes around ILK (e.g. how to get FPIC from communities).

Topic 2: Policy, Legal, and Institutional Mechanisms

To address the limited mainstreaming of ILK in policy, it is proposed that measures be introduced to strengthen institutional coordination and ensure that ILK is meaningfully integrated across relevant sectors and to encourage equitable participation in biodiversity-related planning and implementation processes. This includes establishing governance structures, appointing focal points, and addressing barriers to the participation of Indigenous Peoples and local communities /ILK holders in national decision-making.

Recommendation 3: Fast-track and operationalise the National IKS Policy

a. Finalise the NIKS Policy and develop enforceable legislation.
b. Establish a National IKS Office to coordinate research ethics, access permits, financing, and policy integration.

Recommendation 4: Enhance Institutional coordination and mainstreaming

a. Appoint ILK focal points in all relevant OMAs with a broad biodiversity mandate (MEFT, MAFWLR), MEIYSAC, the Ministry of Health and Social Services (MoHSS) and the Office of the Ombudsman).
b. Nominate an ILK focal point under CBD – Article 8j as suggested by SCBD/SSSF/JL/OR/QC/TM/91951 in January 2025 in reference to UNEP/CBD/COP/DEC/X/40.
c. Mainstream ILK in strategies and processes (NBSAP III, National Adaptation Planning (NAP).
d. Ensure that ILK is included in sectoral policies implementation and Environmental Management Act.
e. Institutionalize ILK in policy development processes
f. Embed ILK indicators in national monitoring systems (linguistic diversity, land tenure, traditional occupations, participation in policy processes).
g. Convene annual ILK forums and publish progress dashboards.
h. Develop framework that articulate the value of ILK, integrating dimensions of wellbeing, cultural identify and sustainability in addition to financial value.
i. Appoint a Champion to ensure ILK mainstreaming throughout all policy processes.
j. Nominate an ILK focal point under CBD – Article 8J as suggested by SCBD/SSSF/JL/OR/QC/TM/91951 in January 2025 in reference to UNEP/CBD/COP/DEC/X/40.

Recommendation 5: Increase representation of Indigenous Peoples and local communities and their knowledge in national and sub-national decision-making and capacity to equally participate

a. Provide targeted capacity development including training on policy advocacy, legal literacy, and documentation of ILK.
b. Ensure meeting materials are available in appropriate formats and languages.
c. Remove practical barriers to participation, such as facilitating transport and holding meetings in accessible locations.
d. Create feedback loops between community input and policy processes, ensuring that Indigenous Peoples and local communities are informed of how their contributions have been incorporated.

Topic 3: Land, Resource Rights, and Heritage Access

To address the constraints undermining the transmission and application of ILK, it is proposed that measures be established to safeguard access to cultural and spiritual sites, strengthen the integration of ILK within conservation and land-use systems, encourage practical use and ensure legal and policy coherence. This is of particular importance as mechanisms under the ABS Act require a form of documentation of ILK, for which the IKS policy provides guidance in terms of protocol and sequencing of actions.

Recommendation 6: Secure cultural and spiritual sites access

a. Acknowledge ILK as inseparable from land and resource access, as highlighted in the report of the Commission of Inquiry into the Claims of Ancestral Land Rights and Restitution.
b. Develop mechanisms to access cultural and spiritual sites, especially where traditional sites fall under private ownership or protected areas.

Recommendation 7: Integrate ILK in land-use and conservation planning

a. Integrate relevant ILK in CBNRM policy, management plans and allocation, conservancy, community forest, and fisheries frameworks.
b. Require ILK-informed assessments in EIA and land zoning and land allocation processes.
c. Create a registry of culturally and ecologically significant ILK sites (sacred sites, hot springs, gathering grounds).

Recommendation 8: Harmonise ILK-related laws and access rights

a. Align the IKS Policy, ABS Act and land tenure legislation, to ensure comprehensive ILK protection.
b. Recognise BCPs as legally valid governance tools; and, drawing on Bwabwata-Khwe and Kaokoland examples, expanding to other communities.

Topic 4: Sustainable Livelihoods, Commercialisation, and Benefit-Sharing

To strengthen the role of ILK in sustaining local livelihoods, it is proposed that additional measures be introduced to complement existing ABS legislation and ensure that benefits from the use and commercialisation of ILK are more equitably shared. This includes addressing the limited reach of current benefits, responding to the increasing commercialisation of ILK-based products, and creating clearer pathways for communities to participate meaningfully in ILK value chains.

Recommendation 9: Support ILK-based enterprises

a. Strengthen community enterprises based on ILK products (Marula, !Nara, Mopane worms, Devil's Claw, perfumes, crafts).
b. Promote certification and traceability schemes to ensure recognition and fair benefit-sharing.

Recommendation 10: Create benefit-sharing and export control mechanisms

a. Ensure equitable partnerships between communities, government, researchers, and private sector actors by for instance developing ABS templates and community contract guidelines.
b. Create an ILK Trust Fund supported by product royalties, levies, and conservation finance mechanisms.
c. Enforce export permits for ILK-based products leaving Namibia.

Topic 5: Education, Language, and Intergenerational Transmission for ILK on biodiversity

To preserve ILK on biodiversity, it is proposed that measures be introduced to enhance its role within education and community learning. This responds to community concerns about the limited inclusion of ILK in school curricula and the need to engage youth as active participants in sustaining Indigenous knowledge. The approach includes building local capacity for co-creation and documentation, supporting mentorship and cultural programmes, and integrating ILK and Indigenous languages into formal and informal learning spaces.

Recommendation 11: Integrate ILK into education systems

a. Include ILK and Indigenous languages in school curricula, beginning with San and marginalised languages.
b. Develop illustrated ILK textbooks and teaching aids in vernacular languages.
c. Include ILK in existing subjects (science, agriculture, health) teaching.

Recommendation 12: Support cultural and mentorship programmes

a. Support living museums, cultural performances, and festivals (e.g., Marula) as active teaching spaces.

b. Design mentorship program bringing together knowledge holders and youth

Recommendation 13: Build local capacity for documentation and storytelling

a. Train youth and local researchers in digital recording, ethical documentation, and storytelling.
b. Encourage community-led authorship and publication in local languages.

Topic 6: Communication and funding

Limited access to information and guidance on ILK frameworks can make it difficult for Indigenous Peoples and local communities to engage fully in relevant processes. To address this, measures are proposed to improve the accessibility of documentation and support structures. Additionally, developing a multi-partner financing strategy to sustain ILK documentation and mainstreaming efforts.

Recommendation 14: Support information dissemination

a. Develop policy summaries, FPIC guides, and workshop reports into major local languages, disseminated through Traditional Authorities, conservancies, and school, not only through digital platforms.

Recommendation 15: Develop a financing strategy

a. Develop a financing strategy including multiple partners (Government baseline, UNESCO, Global Environment Facility, private sector levies, conservation finance) for ILK documentation and mainstreaming.

Appendix

7.1. ILK Dialogue Workshop with Communities

To strengthen the conclusions of the desk-based research and assess how ILK is collected and included in decision-making from a community-level perspective, NNF in collaboration with UNESCO hosted a 2-day workshop in Windhoek, in September 2025, attended by 63 participants (44 men and 19 women).

To ensure the inclusion of the most relevant community representatives, NNF's and the project team's extensive network of communities and partner civil society organizations operating across Namibia was leveraged. Selection criteria for participants were established to ensure a fair and equitable representation of ILK across the country. Priorities were ranked based on factors such as Indigenous Peoples, representatives from living museums, local communities (through CBNRM associations), Traditional Authorities, language diversity, ensuring that all regions of Namibia were represented.

The goal of this workshop was to understand core areas of ILK held by the communities, the current level and format of documentation of ILK across the ecosystems and regions, and the need for further documentation, but also rights and responsibilities in the process of documentation, including aspects of intellectual property and authorship.

At the onset, participants were informed about FPIC to ensure procedural correctness. The results of the literature review, resembling already documented ILK, was presented as well as the known ongoing initiatives beyond written documentation. The relevance of documentation was explained, both for its intrinsic value but also for aspects of ABS under the respective legislation. Initiatives of ILK being already used for commercial purposes were listed and flagged to be a risk for communities and their rights if remained undocumented but continue to be exploited. Plant-based products that are commercially developed and in line with ABS include Marula oil (e.g. Eudafano production), Kalahari melon seed (used in cosmetics), Nara melon products (cosmetics/soaps; seen in local and overseas shops), Devil's claw (wide community harvesting) and Hoodia (reported as not active now). Other ILK-based products that have started being semi-commercially marketed include other plants, ochre, resins, mushrooms but also traditional attire made from natural products including skins and reeds, and jewellery from natural products.

To assess ILK beyond existing documentation, participants collaborated in ecosystem-based groups terrestrial (desert, savanna, and woodland), freshwater, marine, and coastal, reviewing available information from their respective regions

to identify what knowledge has been recorded, how it has been documented, and where significant gaps remain. The exercise emphasized mapping existing knowledge rather than collecting sensitive or new information and touched on ethnobotanical knowledge covering herbs and plant parts used such as:

- Medicinal preparations from roots/leaves/bark;
- Food for medicine, but also on food & beverages;
- Plant, natural materials used to make drums, plates/bowls, and other items;
- Stones, such as tones, soil, wood, water, grass, and cow dung were listed as materials used in local construction.

Across all regions, participants reported that ILK related to biodiversity-covering plants, animals, ecosystem practices, materials, and cultural expressions-remains predominantly oral and practice-based, with very limited written or visual documentation. Most written sources are produced by external researchers and tend to describe *what* is used rather than *how* it is prepared, practiced, or transmitted.

- **Kunene Region:** Rich knowledge of multipurpose plants, traditional house construction using cow-dung mixtures, and craft-making were highlighted, though largely undocumented beyond oral transmission.
- **Northcentral (Omusati, Oshana, Ohangwena and Oshikoto):** there is rich knowledge but largely undocumented, on plants and vegetation including for construction materials, food medicines, oils, clothing and beers/ spirits; daily-life tools such as: household items, basketry and jewelry; events such as the Marula festival were
- **Omaheke and Otjozondjupa:** Communities retain extensive herbal, hunting, and craft-related knowledge, including plant uses, tracking, and cultural rites; however, documentation is patchy and often authored by outsiders. Some knowledge is considered sensitive and not for public recording.
- **Karas, Hardap and Erongo (Marine and Desert Systems):** Shared selected traditional uses of seaweed, Nara, Hoodia, and aromatic plants, with emphasis on confidentiality and intellectual property protection. Access restrictions to ancestral lands on private farms were identified as a key factor in knowledge loss.
- **Kavango and Zambezi (including Freshwater Systems):** Presented extensive traditional conservation practices (e.g., erosion control, elephant deterrents, floodplain fisheries, herbal remedies). Knowledge is transmitted orally through festivals, songs, and daily practice.

Overall, the session revealed that while ILK is vibrant and integral to biodiversity stewardship across Namibia's ecosystems, formal documentation remains limited, fragmented, and often detached from its cultural context. Participants called for community-led approaches to record, protect, and transmit ILK in ways that respect cultural protocols and intellectual property rights.

The assess the wish for further and future documentation of ILK, participants engaged in group work to identify which ILK items should be prioritized for documentation, who should carry it out (community members, scientists, or partnerships), and whether local skills were sufficient or external support was needed. They also determined appropriate methods and tools, including written sources, craft and physical artifacts, living museums, films and videos, audio recordings, online platforms, and practical tools such as cameras, drawings, and audio devices.

Regional priorities included:

- **Omaheke and Otjozondjupa:** Language preservation, cultural performance and attire, traditional medicines, natural/traditional foods, and jewellery; documentation via community consultation, photography, interviews, and written notes;
- **Kunene:** Medicinal plants and healing practices, Indigenous foods, traditional housebuilding methods, perfumes and scents, and arts/crafts/attire; methods involved interviews with elders, community collaboration, step-by-step recordings, and photos with contextual information;
- **Karas/Hardap:** Nara plant uses and Warmbad Hot Spring healing practices; documentation through collaboration with knowledge holders, photos, audio/video recordings, and validation with specialists;
- **North Central:** Practices tied to nature (rituals, permissions, prohibitions) and traditional attire; documented through elder-led audio recordings, photos, and questionnaires;
- **Kavango & Zambezi:** Plants and medicinal herbs, animals (including sacred species), farming methods, and fish cooking techniques; documentation focused on recording uses, rituals, and traditional practices.

Across all regions, the groups emphasized community-led approaches, respecting cultural protocols and intellectual property, and combining local knowledge with external support and tools to ensure accurate and culturally appropriate documentation.

The workshop also discussed the ways and processes through which ILK is included in decision-making at community and regional level. It also served as platform for ILK holders of different regions to interact, share knowledge and ideas, including the Indigenous Knowledge System Policy currently developed.

7.2. Multistakeholder ILK-Policy Dialogue and Capacity Building Workshop

The ILK Policy Mainstreaming Workshop held on 5 and 6 November 2025 brought together 36 participants, 20 women and 16 men from government officials, Indigenous Peoples and local communities, academic institutions, and civil society organizations to advance the integration of ILK into Namibia's biodiversity policies and decision-making processes. Building on a previous workshop held in September 2025, this event focused on the National ILK Outlook findings, identifying gaps in ILK documentation and policy integration, and developing practical strategies for mainstreaming ILK across sectors. The workshop emphasized the importance of ILK for cultural preservation, biodiversity conservation, sustainable livelihoods, and climate resilience, while highlighting the need for ethical, community-led documentation and equitable benefit-sharing.

Opening remarks were delivered by the Head of Office for the UNESCO Windhoek Office, MEFT, and a representative from ILK holders, and the Ombudsman's Office. Speakers highlighted ILK's practical value in conservation and resource management, its centrality to community identity and cultural heritage, and the importance of embedding it in national policies and governance frameworks. UNESCO reaffirmed its commitment to supporting ILK initiatives in partnership with national institutions, while MEFT emphasized the role of the ABS Act and the Nagoya Protocol in protecting traditional knowledge. The Indigenous Peoples and local communities representatives underscored the need to safeguard oral traditions, indigenous languages, ceremonies, and cultural practices, while the Ombudsman highlighted the links between ILK, land, and human rights, advocating for legal recognition and policy inclusion.

The first day featured sessions on ILK and global biodiversity frameworks, highlighting international instruments such as the UNDRIP, the CBD, its Article 8(j) and the KMGBF, the IPBES conceptual framework, and UNESCO's LINKS Programme. These frameworks recognize ILK as vital for ecosystem stewardship, intergenerational knowledge transmission, and inclusive governance. Participants discussed the KMGBF and its relevance for national implementation, stressing the importance of integrating ILK into NBSAPs.

A presentation on the National ILK Outlook in Namibia reviewed current documentation practices, identifying significant gaps in coverage and accessibility. Existing records are largely focused on plants, with minimal coverage of freshwater fisheries, marine and coastal systems, and underrepresented regions such as Karas, Hardap, and Omaheke. The documentation largely excludes women, youth, and spiritual dimensions of knowledge. Communities had expressed preferences for co-created, multimedia documentation methods including videos, oral storytelling, and cultural events, emphasizing ownership, trust, and local control over knowledge. Barriers identified include limited resources, restricted access to ancestral lands, research fatigue, and the need for clear guidance on intellectual property and

benefit-sharing. Discussions highlighted the intrinsic value of ILK—its sacredness and cultural significance beyond scientific validation or commercial use.

Subsequent sessions addressed ILK integration into national biodiversity frameworks and policies:

- Namibia is developing its third NBSAP, which seeks to domesticate the Global Biodiversity Framework while ensuring active participation of Indigenous Peoples and local communities. Lessons from previous NBSAP iterations highlighted the need for clear monitoring, financing plans, and validation processes. The ongoing IKS Policy, under the NCRST, seeks to protect knowledge from misappropriation, support intergenerational transmission, build institutional capacity, and facilitate community-led governance. The policy is guided by principles of respect, self-determination, protection, equitable benefit-sharing, sustainable use, social justice, and capacity building, and its objectives include safeguarding IKS, strengthening human and institutional capacity, integrating ILK across sectors, promoting ethical commercialization, and supporting community-led knowledge governance.

- An Interactive group work session evaluated ILK mainstreaming in agriculture, forestry, wildlife, and environmental policies. Participants identified areas where ILK is included, gaps in integration, and opportunities for improvement. Across sectors, integration of ILK in national policies and sectoral frameworks scored low. Although ILK remains crucial for seed and soil management, fire use, non-timber forest product utilisation, early warning systems, adaptation strategies, and community-led resource governance, most policies lack structured mechanisms for documenting, applying, or protecting this knowledge. Common gaps across sectors include weak institutional systems for ILK, insufficient community participation, limited capacity within government to assess or incorporate ILK, and the absence of ILK champions or coordination platforms. Integration efforts tend to be ad hoc rather than systematic, resulting in fragmented recognition of ILK's role in biodiversity conservation, climate resilience, and sustainable livelihoods. Despite these challenges, all groups identified substantial opportunities to strengthen ILK mainstreaming through improved consultation processes, policy harmonisation, capacity development, and clearer benefit-sharing and governance frameworks, positioning ILK as a key contributor to more inclusive and effective environmental management. Participants emphasized the importance of simplifying documentation and consultation processes while maintaining cultural sensitivity. Discussions also noted that ILK must be valued substantively, not just symbolically and that many rural voices remain excluded due to logistical barriers, such transport and funding, infrastructure and network as well as domestic duties.

Case studies, including the OvaHerero BCP, illustrated successful participatory approaches to safeguarding sacred sites, establishing community custodial committees, and aligning local knowledge with broader legal and ABS frameworks.

Participants stressed the importance of FPIC as a safeguard for communities, highlighting that consent may take multiple forms—full, conditional, or withheld—and must be respected in both research and policy applications. The ARIPO Swakopmund Protocol was also presented as a regional legal instrument to protect traditional knowledge and ensure benefit-sharing.

The workshop's reflective and fishbowl discussions explored themes including the preservation of cultural identity, the role of land in ILK, challenges of commercialization versus cultural continuity, youth engagement, and the practicalities of embedding ILK into governance. Participants emphasized that documentation should strengthen community ownership and sustainability rather than serve external interests, and that benefits of ILK integration extend beyond financial profit to well-being, cultural resilience, and environmental stewardship. Issues of power, colonial legacies, and education were discussed, highlighting the need to teach ILK in schools and empower communities to reclaim knowledge and practice.

The workshop concluded with a call to action to finalize the Namibia ILK Outlook, publish and disseminate findings, brief government stakeholders, launch national initiatives, and develop communication materials to share key messages. The outcomes of the workshop provide suggestions for embedding ILK into policy, research, and biodiversity governance, ensuring that Namibia's Indigenous and Local Knowledge systems are recognized, safeguarded, and sustainably integrated for the benefit of communities and the nation.

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