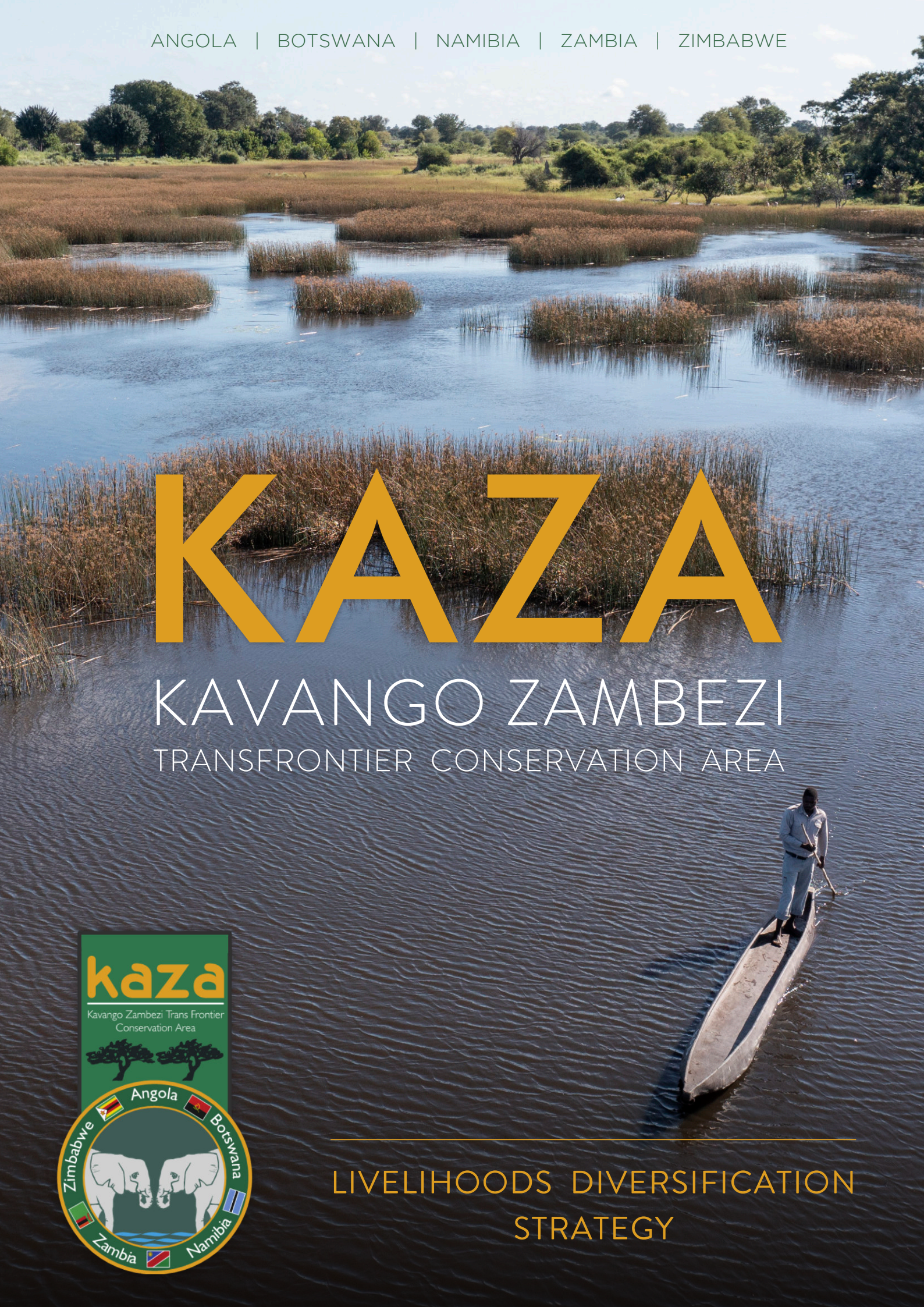
ANGOLA | BOTSWANA | NAMIBIA | ZAMBIA | ZIMBABWE



KAZA

KAVANGO ZAMBEZI
TRANSFRONTIER CONSERVATION AREA

kaza
Kavango Zambezi Trans Frontier Conservation Area
Angola
Botswana
Namibia
Zambia
Zimbabwe

LIVELIHOODS DIVERSIFICATION STRATEGY

CONTENTS

ACKNOWLEDGEMENTS

This Livelihood Diversification Strategy has been shaped by the efforts of many people. The support and feedback provided by the KAZA Secretariat has been invaluable in guiding the Strategy development. The members of the KAZA Community Working Group have provided valuable contributions at each step of the process and through the review of previous submissions. Particular thanks must go to those participants in the two workshops held for this project which were facilitated and organised by the KAZA Secretariat which allowed for engagement with the KAZA Partner States, community representatives, and civil society organisations. Further advice and feedback were provided through peer review by academia and by the USAID Resilient Waters Program team members. Finally, we acknowledge and appreciate the inputs of all relevant stakeholders consulted during the course of the development of this Strategy.

Funding for the development of this Strategy has been provided by the USAID Resilient Waters Program. Additional funding for the two workshops held as part of the Strategy development was provided by WWF DE under the BMZ Bengo Global Programme, facilitated by the KAZA Secretariat.

The support of all Partner States is recognised.

ABBREVIATIONS

CBNRM	Community Based Natural Resource Management
CBI	Conservation Basic Income
CBO	Community Based Organisation
CBT	Commodity Based Trade
CF	Community Forest
CECT	Chobe Enclave Community Trust
CNP	Chobe National Park
COMACO	Community Markets for Conservation
CORB	Cubango Okavango River Basin
COSO	Committee of Senior Officials
COVID-19	Coronavirus
CRB	Community Resources Board
CRIDF	Climate Resilient Infrastructure Development Facility
CSA	Climate Smart Agriculture
DFID	Department for International Development
FFI	Fauna and Flora International
FMD	Foot and Mouth Disease
GMA	Game Management Area
Ha	Hectare
HNP	Hwange National Park
HWC	Human Wildlife Conflict
IDP	Integrated Development Plan
IIED	International Institute for Environment and Development
IRDNC	Integrated rural Development and Nature Conservation
KAZA TFCA	Kavango Zambezi Transfrontier Conservation Area
LUCIS	Land-Use Conflict Identification Strategy
NGO	Non-Governmental Organisation
NNF	Namibia Nature Foundation
NP	National Park
NTFP	Non-Timber Forest Product
PES	Payment for Ecosystem Services
REDD	Reducing Emissions from Deforestation and Forest Degradation
SADC	Southern African Development Community
SMME	Small-Micro and Medium Enterprise
TBNRM	Transboundary Natural Resource Management
TFCA	Transfrontier Conservation Area
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WDA	Wildlife Dispersal Area
WWF	World Wildlife Foundation

EXECUTIVE SUMMARY

The Kavango Zambezi Transfrontier Conservation Area (KAZA TFCA) is the largest terrestrial transfrontier conservation area in the world spanning five countries and covering an area of approximately 520,000km^2 with a wide range of land uses and considerable interconnectivity. Within the KAZA TFCA landscape, there is an estimated human population of between 2.5 and 3 million people living alongside wildlife within a strikingly diverse and resource rich environment. However, this human population experiences high rates of poverty, human wildlife conflict (HWC) and increasing pressures from environmental variability exacerbated by climate change.

The Strategy outlined in this document provides a collective vision and integrated approach to enhancing livelihood options in the KAZA TFCA with a set of strategic priorities for the period 2023-2033. These strategic priorities were defined based on an assessment of existing livelihood strategies within six Wildlife Dispersal Areas across the KAZA landscape and the key factors and risks that constrain them. The development of this Strategy provides an opportunity to enhance regional integration across the KAZA landscape with targeted interventions at multiple scales.

Existing livelihood strategies across the KAZA landscape incorporate traditional agriculture and fisheries primarily for subsistence needs but also small-scale commercial enterprises. Farming is an important yet risky livelihood strategy, and diversification, an important risk reduction approach, is influenced by factors such as age, income, market access, land ownership, farm size and access to extension services that support education, technical skills, and access to finance. Additional strategies which promote food security and income generation include the collection and utilisation of non-timber forest products such as honey production, horticulture and bushmeat hunting. Income from and employment in the tourism industry are an important source of financial income to some individuals, households, and communities but local access to tourism value chains remains poorly developed. The COVID pandemic with its travel restrictions, as well as increasing concerns around the GHG emissions of global tourism clearly indicate the vulnerability of tourism-based livelihoods. Recent developments include the provision of direct payments for ecosystem services such as carbon storage or the protection of wildlife corridors.

There are a number of threats to these existing strategies including the direct and indirect effects of climate change, unregulated and unsustainable harvesting and utilisation of resources, conflict with wildlife, poor infrastructure and market accessibility, undermined traditional governance systems, and the lack of adequate skills and knowledge to effectively

participate in value chains. In some instances, significant policy barriers around resource ownership are getting in the way of equitable benefit sharing arrangements and access to markets. However, there are opportunities for the growth, development, and the diversification of livelihood strategies to reduce vulnerability, enhance resilience and support the sustainable use of natural resources to ensure a reliable resource base for future generations.

The vision of the Strategy is: *'To improve the resilience and livelihoods of communities in the KAZA TFCA'*.

This vision will be achieved through the implementation of this Strategy and the identified Strategic Interventions which are detailed in the action plan:

- To develop a governance framework that supports the inclusive and effective implementation of livelihood interventions and development of sustainable and inclusive value chains.
- To promote locally led development of sustainable livelihood strategies.
- To promote understanding, awareness, capacity building and skills development for more sustainable livelihood interventions.
- To ensure the ecologically and socio-economically sustainable management of natural resources and land.

The implementation of the interventions described within this Strategy will require adequate and reliable financing, and benefit from partnerships between communities, the private sector, civil society and/or government, who can contribute to creating an enabling environment for livelihoods and community businesses. Additionally, the Strategy identifies a number of projects which may be transformational across the KAZA TFCA at a community and household level through developing new markets and livelihood opportunities in the long-term. There may be a need to consider adjusting national policies on sustainable use and resource ownership to facilitate the sustainable development of novel value chains.

1. INTRODUCTION

The Kavango Zambezi Transfrontier Conservation Area (KAZA TFCA) is the largest terrestrial TFCA in the world with a strikingly diverse and resource rich environment. It is characterised by a number of Wildlife Dispersal Areas, where wildlife moves between protected areas and between Partner States. The TFCA was formally established in 2011 by the KAZA Partner States comprising the Republics of Angola, Botswana, Namibia, Zambia and Zimbabwe, and was expected to co-exist with traditional land-use systems. This created a complex and dynamic socio-ecological system with a wide range of land uses.

People in the KAZA landscape face poverty, human wildlife conflict (HWC) and increasing pressures from environmental variability exacerbated by climate change. Based on the latest data, 51.8% of the Angolan (2018), 14.5% of the Botswanan (2015), 26.3% of the Namibian (2015), 58.7% of the Zambian (2015) and 33.9% of the Zimbabwean population (2017) are earning less than U$1.9 a day. The rates for multi-dimensional poverty - which considers monetary poverty, education, and access to basic infrastructure - are even higher with 59.2%, 20%, 26.3% and 64.5% for Angola, Botswana, Namibia and Zambia respectively (World Bank 2020). These percentages do not consider inequality within countries, especially between urban and rural areas. Most rural households engage in a wide range of activities to spread the risk and adapt to these changing circumstances, with great potential to enhance the viability of value chains that could help make them less vulnerable.

"A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base" (Chambers & Conway 1992).

A variety of livelihood strategies are applied within the KAZA landscape which contribute towards income, wellbeing, and food security. Farming is an important yet risky livelihood strategy, and diversification is determined by age, income, market access, land ownership, farm size and extension services. In Namibia's Zambezi region, for example, rural people mostly depend on agricultural and livestock production. Mosimane et al. (2014) found that 65% of households cited agriculture as their most important livelihood source. *"Access to information, the role of experience, and perceptions of possibilities are crucial for livelihood choices, especially in poverty contexts"* (Aring et al. 2021). In Botswana's Chobe District, potential diversification strategies include wildlife and tourism recreational strategies, agriculture, forest and non-timber forest products (Moswete and Dube 2014). Market access and land ownership are among the important strategies to promote diversification in Botswana (Lesego et al. 2021).

Support to existing strategies as well as diversified options will reduce vulnerability, enhance the resilience of people and support the sustainable use of natural resources to ensure a reliable resource base for future generations. Linking livelihood interventions and conservation can be a tenuous process and requires a thorough understanding of drivers of unsustainable resource use, the type of existing livelihood strategies, key risks, and constraints, factors affecting the long-term viability of nature-based value chains, as well as the vulnerability and adaptive capacity of resource users (FFI 2013).

One of the objectives of the KAZA TFCA is to *'enhance the sustainable use of natural and cultural heritage resources to improve the livelihoods of local communities within and around the KAZA TFCA and thus contribute towards poverty reduction'* (KAZA Treaty 2011 – Article 6-1e). This Strategy aims to provide guidance at a macro-level to improve the livelihood options of households. It provides a collective vision and integrated approach to enhancing livelihood options in the KAZA TFCA with a set of strategic priorities for the period 2023-2033.

These strategic priorities are defined based on an assessment of existing livelihood strategies, the potential for novel income streams and workshops with community representatives. After an overview of the KAZA TFCA, the rationale of the Strategy and the methodology, the Strategy describes the different Wildlife Dispersal Areas, their socio-economic and bio-physical baseline, as well as main land uses and livelihood strategies. This is followed by an overview of the livelihood outcomes supported by these various livelihood strategies, the risks and challenges affecting these livelihoods, and opportunities to support existing livelihoods and diversify into new opportunities. Based on this overview of livelihood strategies, the following sections outline the vision and mission, guiding principles, strategic priorities, and action plan for the Strategy and how it fits into the existing institutional framework. The final sections define the monitoring and evaluation arrangements for the strategy and outline options to unlock finance for implementation at different levels.

2. BACKGROUND

Overview of the KAZA TFCA

KAZA TFCA extends across an area of 519,912 km^2, is an initiative of the Governments of Angola, Botswana, Namibia, Zambia and Zimbabwe, and covers the Okavango and Zambezi River basins, where the borders of the five countries converge. It was formalised by the KAZA TFCA Treaty in 2011. The vision of the KAZA TFCA is *"To establish a world-class transfrontier conservation area and tourism destination in the Okavango and Zambezi River Basin regions of Angola, Botswana, Namibia, Zambia and Zimbabwe within the context of sustainable development."*

Within the KAZA TFCA landscape, there is an estimated human population of between 2.5 and 3 million people living alongside wildlife within a strikingly diverse and resource rich environment. However, this human population experiences high rates of poverty (Glatz-Jorde et al. 2014; Govt. of Botswana 2021), human wildlife conflict (HWC) (Karidozo et al. 2016, Salerno et al. 2021) and increasing pressures from environmental variability, which is exacerbated by climate change.

One of the objectives of the KAZA TFCA is to *"enhance the sustainable use of natural and cultural heritage resources to improve the livelihoods of local communities within and around the KAZA TFCA and thus contribute towards poverty reduction"* (KAZA Treaty 2011 – Article 6-1e). Across the KAZA landscape, several projects, activities, and interventions at multiple

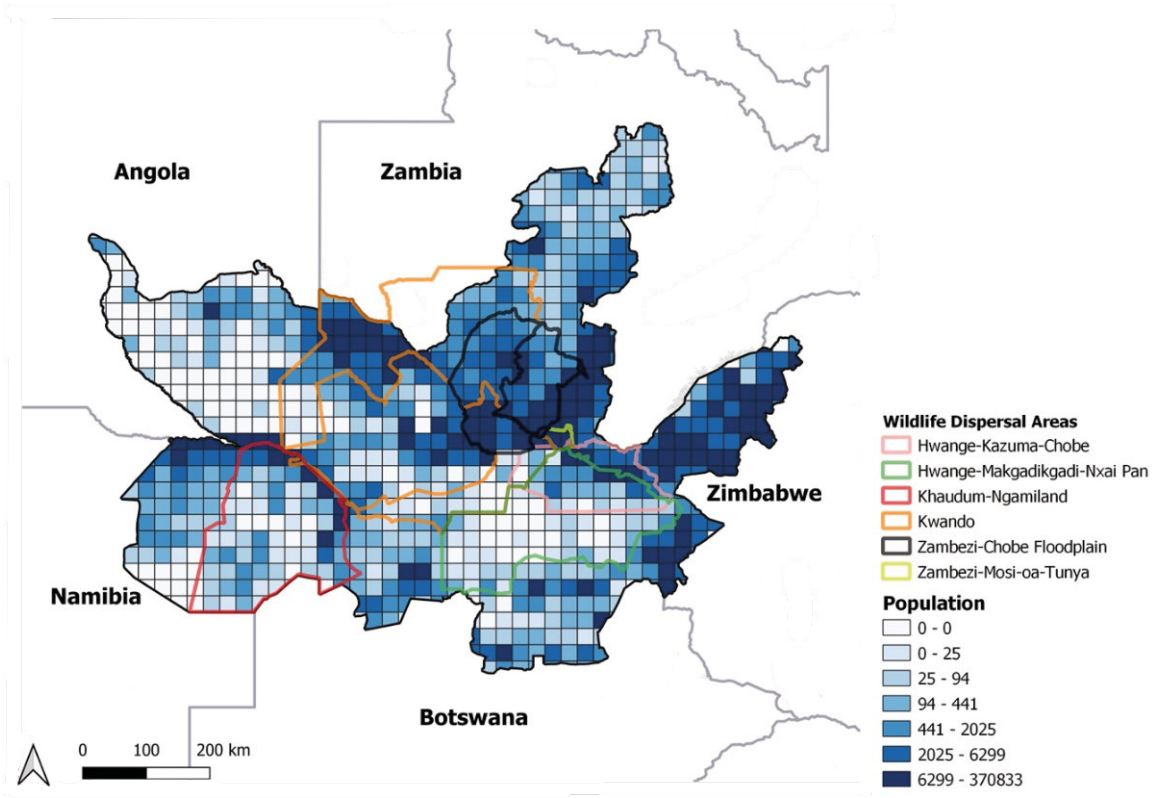
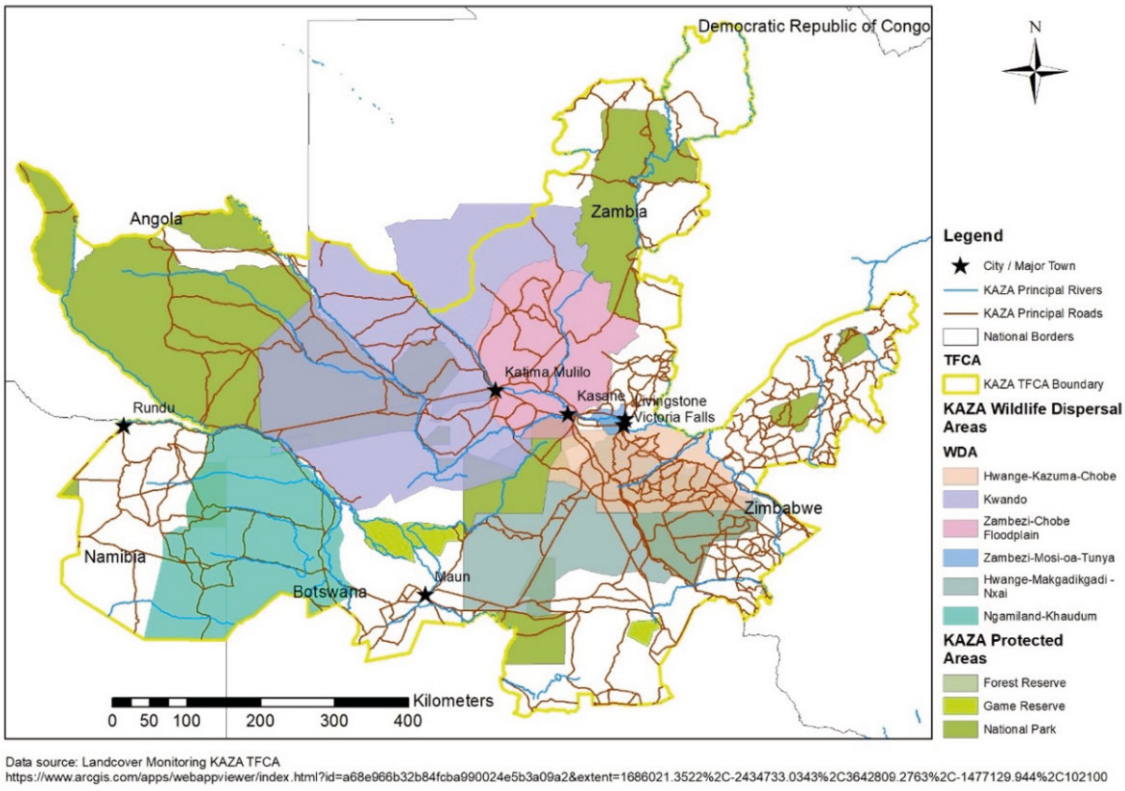


Figure 1. Estimates of human population distribution across the KAZA TFCA for the year 2015 (Source: Nik Steinberg - Facebook Connectivity Lab and Center for International Earth Science Information Network - CIESIN - Columbia University. 2016. High Resolution Settlement Layer (HRSL). Source imagery for HRSL © 2016 DigitalGlobe.

levels have been implemented by both the private and public sector to contribute to this objective. This Strategy will provide guidance and support the harmonisation of future efforts towards achieving this objective building on existing experiences and interventions from across the KAZA landscape and from elsewhere.

Within the KAZA TFCA, six Wildlife Dispersal Areas (WDAs) were identified within the KAZA TFCA Master Integrated Development Plan 2015 to 2020. These WDAs are focal areas for support to local communities and their livelihoods.

These WDAs (Figure 2) emphasise the interconnectivity of the various protected areas and were identified to prioritise development needs within more localised areas. The WDAs provide an agreed 'geographical scope' for directing investments and interventions and play an important role in planning.



Data source: Landcover Monitoring KAZA TFCA
https://www.arcgis.com/apps/webappviewer/index.html?id=a68e966b32b84fcba990024e5b3a09a2&extent=1686021.3522%2C-2434733.0343%2C3642809.2763%2C-1477129.944%2C102100

Wildlife Dispersal Areas	Countries
1. Kwando River	
2. Zambezi Chobe Floodplain	
3. Zambezi-Mosi-oa-Tunya	
4. Hwange-Kazuma-Chobe	
5. Hwange-Makgadikgadi-Nxai Pan	
6. Khaudum-Ngamiland	

Figure 2. KAZA TFCA with Wildlife Dispersal Areas

Rationale of the Strategy

While conservation is the primary goal of the KAZA TFCA, the KAZA TFCA Treaty also aims *"to support the sustainable use of natural resources, improve the livelihoods of resident communities"* and *"facilitate a healthy and competitive economic environment"*. The majority of resident communities are rural subsistence farmers, and for many years, trophy hunting and tourism were promoted as key livelihoods strategies to generate revenue from wildlife and contribute to conservation (Roe et al. 2020). The COVID 19 Pandemic, which

started in early 2020 and led to a steep decline in tourism, and happened at the same time as an increasing international backlash against trophy hunting clearly exposed the risks associated with an overreliance on wildlife-based livelihood strategies. Many of these constraints also apply to photographic tourism.

The KAZA TFCA, as a conservation area, is expected to co-exist with existing traditional land-use systems. This created a complex and dynamic socio-ecological system, which is impacted by external factors such as climate change, governance constraints, socio-economic changes (for example, rural to urban migration), resource trends etc., which considerably influence livelihood options, the extent to which is often unknown. Most rural households are risk averse and engage in a wide range of activities to spread the risk and adapt to changing circumstances (Wright et al. 2015).

Linking livelihood interventions and conservation impact can be a tenuous process and requires a thorough understanding of the drivers of sustainable or unsustainable resource use, the type of existing livelihood strategies, key risks, and constraints, as well as the vulnerability and adaptive capacity of resource users (FFI 2013). Sustainable livelihoods and poverty reduction require that external support – from outside the household level – are aligned and synergistic with existing livelihood strategies, socio-economic characteristics, national policies and the adaptive capacity of the local population (DFID n.d.).

This strategy aims to provide guidance to the KAZA Secretariat, members states, partners and donors at a macro-level that actively improves the livelihood options of households. It provides KAZA TFCA's collective vision and integrated approach to enhancing livelihood options in the KAZA TFCA with a set of strategic priorities for the period 2023-2033. These strategic priorities are defined based on an assessment of existing livelihood strategies in the different WDAs, key factors and risks that constrain them, as well as emerging opportunities to enhance and diversify livelihoods, that are sustainable, inclusive, and suited to the local context.

Methodology

The Strategy has been developed through a collaborative process involving Partner State representatives and other stakeholders who provided valuable insights on the priorities, opportunities and framing of the Strategy. A scoping process encompassed a combination of in-person and digital consultations and a literature review of various reports, papers and KAZA documents. Key guidance was provided by the KAZA Community Working Group, which was reactivated in advance of the development of this Strategy. The Strategy is complemented by a scoping report, which provides a detailed background of the current

situation on the ground, the opportunities, and challenges. The scoping report also looks at the experiences and lessons learned from previous livelihood projects.

The Strategy development has been guided by the DFID Sustainable Livelihoods Framework. The framework itself is a simplification of the circumstances on the ground but it provides a way of thinking about livelihoods and how to improve them. Constrained by the absence of a detailed, participatory assessment of livelihoods and assets at a household level in all five countries, a simplified approach was used focusing on three components of the DFID approach:

1. Vulnerability Context: The external environment in which people live, and which is impacted by seasonality as well as critical trends and shocks over which people have limited control (DFID n.d.). The key indicators considered within the Strategy include:

    - Socio-economic risks and challenges including poverty levels, education, access to markets, population growth, health etc.
    - Resource trends
    - Governance
    - Natural shocks including climate change, biodiversity loss or wildfires.
    - Seasonality

2. Livelihood Strategies: *"the range and combination of activities and choices that people make/undertake in order to achieve their livelihood goals"* (DFID n.d.).

3. Livelihood Outcomes: These are achieved by the implementation of livelihood strategies. The aim is to understand the diversity of livelihood goals beyond just income generation to better understand local priorities and constraints (DFID n.d.). Key livelihood outcomes considered in the Strategy include:

    - Income
    - Improved wellbeing
    - Reduced vulnerability and enhanced resilience
    - Food security, and
    - A more sustainable use of natural resources to ensure a sustainable natural resource base.

Strategic interventions can be targeted at multiple levels, including the household, community and regional or policy level, with benefits to be realised in both the short and longer term.

Opportunities to support and enhance the resilience of existing livelihoods and diversify livelihood options were assessed based on the principles of resilience thinking to ensure sustainable transformation. Strategies for social innovation describe processes that enhance the impact of social transformation to contribute to systemic impacts or large systemic change. Scaling the impact of sustainability initiatives can involve four main processes:

- Scaling Out consists of two main strategies to impact more people: (1) Replicating programmes to reach more people or new geographic areas, (2) spreading principles that can be adapted to new contexts (e.g., by the community) and lead to the co-generation of knowledge.
- Scaling Up mostly refers to the impact at higher institutional levels due to policy change. This can involve change in existing policies or development of new policies, advocacy, and partnerships. The goal is to either address root causes in larger institutions that affect the greater publication or to link community-level policy interventions in a more coherent direction.
- Scaling Deep aims to impact the grassroots level and cultural roots. It is based on the acknowledgement that change must be rooted in communities, people, relationships, and cultures, and includes assessing existing cultural ideas, stories, norms and beliefs, as well as investing in transformative learning, communities of practice and networks to create shared mindsets.
- Cross-Cutting strategies take a broader look at the problem from a systems-change perspective identifying root causes, understanding a variety of complex drivers of change, and redefining goals (Lam et al. 2020).

The current livelihood strategies employed across the KAZA TFCA are at very different stages of development. To ensure sustainable long-term impacts, livelihood interventions require in-depth analysis (for example using the pre-implementation assessment in Annex 9.1) and targeted interventions in either of the four processes mentioned above, tailored to specific contexts. Not all successful livelihood strategies can be scaled. It depends on the local conditions, the governance framework, or the socio-political environment and if they are ready for transformations. Certain strategies may remain at a very localised level with considerable impact on a limited number of persons but with little impact on the landscape.

3. EXISTING LIVELIHOODS IN KAZA: CHALLENGES AND OPPORTUNITIES

Understanding Livelihoods

"A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base" (Chambers & Conway 1992).

Livelihoods are sustainable if they do not depend on external support or support is institutionally and financially sustainable; if they are resilient to external stressors and shocks; ensure the maintenance of natural resources in the long-term; and do not undermine the livelihood options of others (DFID n.d.).

Throughout most of the KAZA TFCA, there has been a move towards community-based conservation, which devolves rights over natural resources including forest, fisheries, wildlife, and tourism to communities. This approach has been based on collective management and restoring past or enhancing existing forms of common property resource management. This Strategy will support the existing livelihood outcomes of KAZA residents and explore opportunities for diversification.

The diversification of livelihoods needs to consider the most suitable and appropriate scale. The word 'community' is often used as a catch-all statement to identify distinct groups of residents, but communities can range from remote rural villages or a loose affiliation of cattle posts to urban centres. The trickle-down effect to the household level from community level projects is often incomplete. Further, there is considerable diversity within communities (for example in terms of wealth, social standing, age, gender, ethnicities, languages etc.), which creates different and sometimes competing aspirations, interests, and expectations of what development means for them. In addition, national borders may have divided communities and there may be strong ties between cross-border populations, which provides an opportunity to harmonise practices.

The development of this strategy provides an opportunity to harmonise livelihoods support practices across the KAZA landscape with targeted interventions at multiple scales to ensure activities and the associated benefits trickle down to where they are needed and can be most effective.

There are multiple levels of livelihoods: (1) primary production, (2) value addition and processing, and (3) service level and market development. Projects and programmes within the KAZA landscape that fall into categories two and three can be considered transformational projects, but require considerable time, resources, governance changes and a certain production efficiency to be successful. Thus, a particular focus of this Strategy is on nature-based livelihoods, and production and market development to a lesser extent as these activities will require considerable private sector investment which KAZA can promote but not ensure.

Description of Existing Livelihoods per Wildlife Dispersal Area

The next section provides an overview of the socio-economic and bio-physical environment of the different Wildlife Dispersal Areas of the KAZA TFCA and outlines the main land uses. More detailed information on each Wildlife Dispersal Area can be found in the scoping report associated with this Strategy.

WDA	Socio-Economic Baseline [Financial, Human & Social Capital]	Bio-Physical Baseline [Natural & Physical Capital]	Land-Use	Livelihood Strategies
Kwando River – 115,802km²				
	High levels of poverty, unemployment, informal socio-economic activities, illiteracy, and poor health services and education. Strong reliance on natural resources for subsistence activities.	Open woodland and tropical savannah climate. Seasonally and perennially flooded grasslands. Broad variety of wildlife. Poor infrastructure, road network, water, and energy provision.	Small Villages & Agricultural Settlements National Parks	90% of the population engage in Subsistence Livestock & Crop Farming Charcoal Bushmeat Hunting Subsistence Fisheries NTFPs (Fruit Collection) Small-Scale Trade in Natural Products Beekeeping Private Logging (Teak)
	Strong reliance on natural resources for subsistence activities. Limited formal wage employment opportunities. Considerable gender and generational imbalances in livestock holdings. Remote location limits market accessibility and opportunities.	Perennial and semi-perennial water resources. North-west devoid of surface water. Three ecoregions: Zambezian flooded grasslands, Zambezian Baikiaea woodlands to the east and Zambezian and Mopane woodlands. Considerable diversity and abundance of large mammalian fauna, particularly elephants. Remote and poor access Infrastructure.	Wildlife Management Areas Communal mixed-use land CBNRM	Tourism Trophy Hunting Crop Production Livestock Production Subsistence Fisheries Commercial Fisheries NTFPs Arts & Crafts Horticulture
	71% of population in KAZA is living in rural areas. Health facilities far from remote villages. Average cash income estimated at around N$1 000 – N$1 500 per month. Average household between 4.0 and 4.3 members.	Highly variable climate and prone to droughts. Dominated by thick sandy soils with more fertile soils along the river floodplains. Characterised by Kwando River and five vegetation communities: open water, floodplains, riverine woodlands, mopane woodlands, and Kalahari woodlands. Considerable mammal diversity. Hosts important wildlife corridors.	National Parks State Forest Community Forests Communal Conservancies Fish Reserves CBNRM	Tourism Trophy Hunting Subsistence Livestock Farming Subsistence Crop Farming (52.9% of the rural population) Commercial Livestock Commercial Cropping Irrigated Gardens / Horticulture Subsistence Fisheries (Illegal) Commercial Fisheries Harvesting of Poles and Thatching Grass for Construction Harvesting Timber NTFPs (Wild Fruits, Devil's Claw) Arts & Crafts
	Among the poorest provinces in Zambia with limited economic activities due to the semi-arid climate, with periodic drought and flooding. Minimal access to local markets.	Dominated by the Zambezi and Kwando River plains, elsewhere characterised by Kalahari sands. Important migratory route for elephants. Infertile soils unsuitable for sustainable agriculture.	Small Villages & Agricultural Settlements National Parks Game Management Areas Community Forests	Tourism Trophy Hunting Subsistence Fisheries Commercial Fisheries Subsistence Cropping & Subsistence Livestock (with increasing milk production) mostly in mixed systems. NTFPs (honey, fruits, Devil's Claw)

WDA	Socio-Economic Baseline [Financial, Human & Social Capital]	Bio-Physical Baseline [Natural & Physical Capital]	Land-Use	Livelihood Strategies
Chobe-Zambezi – 37,945km²				
	Kasane-Kazungula is the developmental hub focused on tourism. Communities are represented by the Chobe Enclave Community Trust.	Two main ecoregions with high biodiversity centred around Chobe National Park and surrounding Forest Reserves. High densities of elephants. Kasane International Airport, good principal road infrastructure and cross-border posts to Zimbabwe, Zambia and Namibia.	National Park and Forest Reserves	Photographic Tourism Commercial Hunting Subsistence Livestock Subsistence Farming Subsistence Fishing Small-scale commercial fishing Commercial aquaculture NTFPs (wild fruits /plants, thatching grass and firewood) Conservation Credits
	Population growth, increasing infrastructure construction in floodplains and settlement in wildlife corridors. Considerable dependence on resources provided by the river e.g., water, fish, reeds, fruits from riverine trees, and water lilies.	Open water, floodplains, riverine woodlands, mopane woodlands, and Kalahari woodlands. Large floodplain between the Zambezi and Chobe Rivers prone to seasonal flooding. High mammal diversity linked to seasonal movements across international boundaries. Declining status and quality of local fisheries resources due to over-fishing.	CBNRM: Communal conservancies & community forests with mixed land use Wildlife corridors	Formal employment Subsistence Fishing Commercial Fishing Subsistence Livestock Subsistence Cropping Conservation Credits
	The Western Province of Zambia is among the poorest with limited economic activities due to the semi-arid climate. In the Mwandi district, 89% of the population lives below the poverty line. Considerable reliance on natural resources for subsistence. Food insecurity. Most of the population survives by subsistence farming on poor soils with limited rainfall.	The Zambezi River and its major tributaries are major features providing important wetland habitat for a variety of wild species, and natural resources. Away from the rivers, the dominant vegetation is miombo woodland.	Urban areas Community Conservancies, Forest Reserves Game Management Areas Communal land	Subsistence and commercial fishing. Formal employment NTFPs Subsistence Livestock Subsistence Cropping

WDA	Socio-Economic Baseline [Financial, Human & Social Capital]	Bio-Physical Baseline [Natural & Physical Capital]	Land-Use	Livelihood Strategies
Zambezi-Mosi-oa-Tunya – 1,320km²				
	Livingstone has an estimated population of 114,600 and a growth rate of 2.1% with 75% of the population under 30. Tourism is the principal economic driver focused on the adjacent Zambezi River and Victoria Falls. The urban area encompassing Livingstone covers an area of 69km² with a relatively low density of development.	The Zambezi River is the focal point of the WDA and separates Zambia from Zimbabwe. There are good road links and associated infrastructure including an international airport.	National Park	Tourism NTFPs Beekeeping / honey processing Crop farming Poultry production Informal and formal employment Fish trading SMMEs Social support Horticulture
	Victoria Falls town is the focal point with an extensive tourism industry. The proportion of the young population under 15 years is 40% while that of the old population 65 years and above is about 6%.	The Victoria Falls are a World Heritage Site. The eight steep sided gorges below the falls, the river and islands upstream provide a diversity of habitats for a wide range of flora and fauna. There are good road links and associated infrastructure including an international airport.	National Park Urban areas	Tourism Arts &Crafts (formal & informal) Subsistence Livestock Subsistence Cropping External remittances from the diaspora
Hwange-Kazuma-Chobe – 25,373km²				
	Low population density. There are considerable extension plans for commercial agriculture. Communities and households depend on subsistence agriculture, tourism and commercial hunting.	Contains some of Botswana's most fertile soils. Zambezian Baikiaea woodlands. The area is heavily impacted by wildfires. Limited infrastructure outside of Pandamatenga and Lesoma. A main tarred road runs north south and provides an access link for international road freight through southern Africa.	Forest Reserve National Park Communal land Commercial arable land	Commercial Agriculture (extensive expansion plans) Formal employment Subsistence Livestock Subsistence Cropping Hunting Tourism Tourism NTFPs (thatching grass and wild fruits)
	Low population density. Livelihood activities revolve around traditional agriculture supported by cross-border labour migration. An important aspect of the household economy is having someone working elsewhere who remits money.	The rocky low-profile basalt consists of ridge-and-valley landscapes with well-watered drainage lines and productive grassy vleis. The eroded basalt landscapes comprise rocky, dark clay soils which are shallow and arid. Some valley bottoms support seasonally moist grasslands. Many rivers are perennial and support a wide variety of wildlife species.	National Park Forest Reserve Communal Land	Subsistence Livestock Subsistence Cropping Remittance from formal employment elsewhere SMMEs

WDA	Socio-Economic Baseline [Financial, Human & Social Capital]	Bio-Physical Baseline [Natural & Physical Capital]	Land-Use	Livelihood Strategies
Hwange-Makgadikgadi-Nxai Pan – 41,565km²				
	Very low population density with only two communities and a combined population of 1,052 (2022). Commercial hunting tourism is the primary commercial activity.	Kalahari Acacia-Baikaea woodlands with small pockets of Zambezian Baikiaea woodlands along the border with Zimbabwe, and Zambezian and Mopane woodlands in the north-east. There is a principal tarred road running east-west and a limited number of bush tracks.	National Park Wildlife Management Area Communal land	Commercial hunting Subsistence Livestock NTFPs (wild fruits and thatching grass)
	Commercial hunting tourism is the primary socio-economic activity.	The Hwange elephant population is a famous asset with between 30 and 40 thousand animals. Waterless wilderness with artificial water during the dry season. Considerably migration to Botswana.	National Park Forest Reserves Private farmland Mining	Tourism Trophy Hunting Subsistence Livestock Subsistence Cropping Arts & Crafts
Khaudum-Ngamiland – 555,942km²				
	Population predominantly lives along the fringes of the Okavango Delta with smaller numbers of people living in the dry western sandveld. Poverty levels above the national average with 88% of households classified as multi-dimensional poor.	Grassed floodplains and perennial river channels extending into Zambezian and Mopane woodlands and Kalahari sandveld. Relatively low density of wildlife with significant seasonal movement out from the Okavango Delta in the wet season. Four artificial water points (AWPs) available to wildlife with all other boreholes accessible only to livestock. A single main tar road running north-south with smaller gravel roads with only one that links to Namibia.	Communal mixed-use land Subsistence Agriculture Tourism Trophy Hunting	Formal employment Tourism Commercial Subsistence Fishing Subsistence Livestock Subsistence Cropping Arts & Crafts (basket weaving) NTFPs (e.g., Mongongo)
	High levels of multi-dimensional poverty. Formal employment and traditional farming provide the main sources of income. High use of firewood as the principal fuel source. Nyae Nyae Conservancy is located in a remote area with few jobs available and people reliant on natural resources.	Mixed woodland and sandveld. Seasonal rainfall is very important for wildlife and livestock, but the area is prone to frequent droughts. Soils generally have low fertility. The area is remote with limited infrastructure.	CBNRM	Subsistence Livestock Subsistence Cropping Conservancies and community forests providing communal support, employment and income. NTFPs (Devil's Claw, wild fruits and thatching grass) Social support (government food aid and pensions) Arts &Crafts Tourism

Existing Livelihood Strategies

The table below outlines existing livelihood strategies and their contribution to different livelihood outcomes.

Livelihood Strategy	Description	Livelihood Outcomes
Fisheries (Commercial / Subsistence 	Fisheries across the inland water sources of the KAZA TFCA are an important source of food and income. However, they are often used unsustainably despite efforts to regulate and harmonise fishing seasons and fishing methods. Namibia is establishing fish reserves and working closely with local communities to protect and restore fish stocks. The development and commercialisation of sustainable fish ranching and fish farming is also being pursued.	Food production and security Financial income and employment Maintenance of traditional and cultural behaviours and beliefs Conservation of natural resource if fisheries and fishing is managed sustainably
Livestock Farming (Subsistence/ Commercial) 	Traditional agricultural activities remain one of most the important livelihood activities in the KAZA landscape. These activities are predominantly subsistence in nature and may be a supplemental activity to formal employment. Livestock provide both a food source and economic opportunity and are culturally important. Across the KAZA region livestock come into conflict with predators whilst diseases such as Foot and Mouth limit market access.	Food production and security including the provision of milk and associated dairy products Financial income and employment Maintenance of traditional and cultural behaviours and beliefs Reduced vulnerability Livestock serve as a store of wealth
Crop Farming (Subsistence/ Commercial) 	Crop production is practiced across the KAZA region principally for subsistence or small-scale commercial purposes and is highly susceptible to climate, poor soils and conflict with elephants and other grazing wildlife. Government programmes, such as ISPAAD in Botswana and FISP in Zambia, provide subsidised support to farmers to encourage food production. Large scale commercial arable agriculture is practiced in northeast Botswana. There are ongoing programs promoting sustainable climate and wildlife smart agricultural practices.	Food production and security Financial income and employment Increased resilience to climate variability and reduced vulnerability
Horticulture 	Horticulture is widely practiced in areas where water is available. It mostly remains at a small-scale, household level, but some larger-scale horticulture projects were supported by external donors. Small horticultural schemes appear to suffer as a result of inadequate management and lack of sustained market linkages, often related to donor project cycles. There is potential for growth if sustainable market links can be established, for example with the regional tourism industry.	Food production, diversity and security Financial income and employment Improved quality of life Improved health and well-being Improved independence Reduced vulnerability
Forests – Timber Harvesting 	Timber harvesting is widely practiced but is often conducted unsustainably, illegally and is unregulated. Forest Reserves or Community Forests are found widely across KAZA and provide a structure for the sustainable utilisation of these resources.	Financial income and employment

Livelihood Strategy	Description	Livelihood Outcomes
Non-Timber Forest Products 	An important source of income is the use of non-timber forests products for both subsistence and commercial activities. Products include firewood, thatching grass, wild fruits and fencing poles. Devil's Claw harvesting and sale provides a sustainable source of income within Namibia. Mongongo/mangetti nut have commercial potential with ongoing projects and donor support. Investigations around the commercialisation of NTFPs are ongoing and focus on products that do not compete with subsistence food needs of humans or wildlife. Further research is needed to ensure the long-term sustainability of commercialisation.	Financial income Reduced vulnerability Sustainable utilisation of natural resource base Maintenance of traditional and cultural behaviours and beliefs Medicinal purposes Energy security
Honey Production 	Honey production and beekeeping is an emerging activity with significant potential for growth that requires few inputs and provides economic potential. Beekeeping can also be linked to human-elephant conflict mitigation activities. Issues related to variable climate, access to food and water and parasites may cause localised hive abandonment. Centralised collection and processing facilities would facilitate expansion.	Financial income Improved human wildlife conflict mitigation Food production, diversity and security
Tourism 	The tourism industry is one of the key economic drivers within the KAZA landscape providing formal and informal employment opportunities and other benefits through lease fees and royalties. The industry was heavily impacted by the recent Covid-19 pandemic and the associated impacts on travel which highlighted the need for increased diversification. It remains difficult for communities and individuals to access the tourism industry at all levels. There is significant potential to improve access to the tourism value chain including for the provision of resources, services or activities. Recreational fishing is popular across southern Africa. The inland water sources of the KAZA region, particularly within Botswana and Namibia, are very attractive and there is potential to develop tourism around recreational fishing in southern Angola. Fish reserves in Namibia provide income for local conservancies	Financial income and employment Sustainable utilisation of natural resource base Natural resource conservation Increased well-being Maintenance of traditional and cultural behaviours and beliefs – cultural tourism
Trophy Hunting 	Trophy hunting for species such as elephant, lion, leopard and plains game is an important livelihood strategy in community concessions, which may not viably support year-round photographic tourism. Trophy hunting involves relatively few people directly. Within Botswana the recent ban (2014-2019) on hunting significantly impacted community trusts which relied upon the lease and licence fees from the industry.	Financial income and employment Natural resource conservation – protection of large portions of land and landscapes
Wildlife – Game Meat 	Bushmeat provides a source of food and income but is often unsustainably harvested. Improved regulation and monitoring can contribute to employment opportunities and incentivise a shift away from bushmeat hunting. There is potential for developing formal game farms to provide a sustainable source of game meat within the landscape.	Financial income Food security Maintenance of traditional practices and behaviour

Livelihood Strategy	Description	Livelihood Outcomes
Arts & Crafts 	Arts and crafts serve to not only provide a source of income but also to preserve and celebrate cultural heritage. They widely use local resources. The production and sale of products is strongly linked to the regional tourism industry with further sales made online or through international partners.	Financial income Sustainable utilisation of natural resource base Natural resource conservation Increased well-being Maintenance of traditional and cultural behaviours and beliefs
Formal Employment 	Employment opportunities are provided within government institutions, the private sector (e.g., tourism businesses), SMMEs and NGOs. Due to the remote nature of much of the KAZA region, individuals may need to move to urban areas or neighbouring countries for formal employment opportunities. Regular financial remittances are often sent to family members remaining at home. A lack of access to external finance, lack of entrepreneurial skills and business training, excessive regulation and inherent biases within the education sector against self-employment all constrain the growth potential of SMMEs.	Financial income Reduced vulnerability
Social Income Support 	Social support provided by national governments takes many forms. In Zambia, a nationwide social cash transfer is targeted at the aged, vulnerable children and adults, widows and orphans - amongst others. In Botswana poverty alleviation support is provided through the Ipelegeng Programme. Additional social support is provided by community trusts or conservancies to community members.	Financial income Reduced vulnerability
CBNRM Programmes 	One of the main vehicles for linking livelihoods and conservation are CBNRM programmes in KAZA Partner States. Formal CBNRM programmes exist in Botswana, Namibia and Zimbabwe. Angola does not have a formal CBNRM program, but recent legislation ensures community rights to use local natural resources as well as reside in protected areas. Zambia also does not have a formal CBNRM programme but does have Community Resource Boards (CRB) for the management of wildlife and natural resources in GMAs with a benefit sharing agreement between the Government and CRBs from income derived from the sustainable utilisation of wildlife.	Cultural and resource harvesting rights Financial income Natural resource conservation Increased well-being Reduced vulnerability
Carbon Trading 	Carbon credits are based on the idea that conserving forests is a service provided by local and national communities to other countries around the world by storing carbon and reducing climate change. The Lower Zambezi REDD+ Project (VCS ID 1202) is Zambia's first Verified Carbon Standard REDD+ project. The REDD Programme focuses on reducing emissions from deforestation and forest degradation. Generation of carbon credits through increasing soil carbon is also possible and may be applicable across the KAZA landscape.	Financial income Natural resource conservation
Conservation Credits 	Conservation Credits are direct payments for the conservation and presence of certain wildlife species or the protection of wildlife corridors. Existing schemes in Namibia and Botswana remain at a small scale but there is potential for significant expansion across the KAZA region as the global call to protect 30% of land and oceans gets support.	Financial income Natural resource conservation

Challenges and Risks of Existing Livelihoods

Challenges and potential of livelihood strategies differ considerably based on the local context. The table below presents a summarised overview of challenges and risks impacting different livelihood strategies. A more detailed breakdown of the challenges and livelihood outcomes by WDA and country can be found in Annex 9.2.

Existing Livelihoods	Risks & Challenges				
Livelihood Strategy	Socio-Economic Risks / Challenges	Resource Trends	Natural Shocks	Seasonality	Governance[1]
Fisheries (Commercial/ Subsistence) 	Undermined traditional resource use systems Limited access to markets Human population growth Limited infrastructure & transport systems High poverty & focus on subsistence	Declining fish stocks due to excessive exploitation and illegal methods	Climate Change: Dependence on flood waters	Seasonal rainfall impacts rivers & fisheries	Weak fisheries legislation Differences in legislation between countries (e.g. fisheries banned in BW & allowed in NAM) Distance from decision making centres Centralisation Undermined traditional governance systems Complex decision-making systems
Fisheries (Tourism) 	COVID 19 reduced sales High tourism density Encroachment into protected areas	Declining fish stocks due to excessive exploitation and illegal methods	Climate Change: Dependence on flood waters	Seasonal rainfall impacts rivers & fisheries Tourism peaks in winter months	
Livestock Farming (Subsistence/ Commercial) 	Undermined traditional resource use systems Limited access to markets Land constraints & land use conflicts Human population growth Skewed cattle ownership Limited infrastructure (e.g., slaughter facilities) & transport systems High poverty & focus on subsistence Limited land availability Livestock held for social status & local consumption	Overgrazing due to cattle stocks above carrying capacity.	Climate Change: Droughts, diseases, poor grazing, frequency of fires	Increased human wildlife conflict during seasonal migration Annual flooding reduces agricultural land	
Crop Farming (Subsistence / Commercial) 	Undermined traditional resource use systems Limited access to markets Land constraints & land use conflicts Human population growth Limited infrastructure & transport systems High poverty & focus on subsistence Limited land availability Access to inputs	Limited soil fertility and sandy soils require considerable inputs	Climate Change: Droughts, flooding, crop failure, diseases, shift in wet season, frequency of fires	Increased human wildlife conflict during seasonal migration Short annual wet season Annual flooding reduces agricultural land	

Existing Livelihoods	Risks & Challenges				
Livelihood Strategy	Socio-Economic Risks / Challenges	Resource Trends	Natural Shocks	Seasonality	Governance[1]
Horticulture 	Limited access to markets Human population growth Limited infrastructure & transport systems High poverty & focus on subsistence Limited land availability Access to inputs	Limited soil fertility and sandy soils require considerable inputs	Climate Change: Droughts, flooding, crop failure, diseases, shift in wet season, frequency of fires, access to water	Increased human wildlife conflict during seasonal migration Short annual wet season Annual flooding reduces agricultural land	More emphasis on conservation than sustainable development Open access land and resources Untransparent land allocation (e.g., dispossession of San communities) Weak economies limit formal financial transactions. Considerable reliance on informal cash payments.
Forests – Timber Harvesting 	Undermined traditional resource use systems Limited access to markets Land constraints & land use conflicts Human population growth Limited infrastructure & transport systems Encroachment into protected areas	Uncontrolled logging, charcoal & wood production Uncontrolled burning Firewood depletion around villages Reduced vegetation cover due to land clearing for agriculture & high elephant populations	Climate Change: Droughts, diseases, shift in wet season, frequency of fires Biodiversity loss	Short annual wet season	
Non-Timber Forest Products 	Undermined traditional resource use systems Limited access to markets Land constraints & land use conflicts Human population growth Limited infrastructure & transport systems	Uncontrolled logging, charcoal & wood production Uncontrolled burning Reduced vegetation cover due to land clearing for agriculture & high elephant populations	Climate Change: Droughts, diseases, shift in wet season, frequency of fires Biodiversity loss	Short annual wet season Increased human wildlife conflict during seasonal migration Long distances to collect NTFPs in dry season	

Existing Livelihoods	Risks & Challenges				
Livelihood Strategy	Socio-Economic Risks / Challenges	Resource Trends	Natural Shocks	Seasonality	Governance[1]
Honey Production 	Limited access to markets Limited infrastructure & transport systems Pests and bee diseases?	Uncontrolled logging, charcoal & wood production Uncontrolled burning Reduced vegetation cover due to land clearing for agriculture & high elephant populations	Climate Change: Droughts, diseases, shift in wet season, frequency of fires	Increased human wildlife conflict during seasonal migration	Lack of financial resources for enforcement of rules. Registration of customary land rights in wildlife corridors Limited benefits from CBNRM reduce conservation incentives. Limited land management under private management / lease agreements
Tourism 	COVID 19 reduced sales & cross-border trade Human wildlife conflict High tourism density Encroachment into protected areas Lack of easy access and cross border facilities Increase in seasonal temperatures	Declining wildlife populations (poaching & bush meat) Agricultural expansion causes habitat loss Reduced vegetation cover due to land clearing for agriculture	Climate Change: Droughts, flooding, diseases, frequency of fires Biodiversity loss	Tourism peaks in winter months	
Trophy Hunting 	COVID 19 reduced sales Human wildlife conflict International Trophy hunting bans or restrictions	Declining wildlife populations (poaching & bush meat) Agricultural expansion causes habitat loss	Climate Change: Droughts, flooding, diseases, frequency of fires. Biodiversity loss	Tourism peaks in winter months	
Wildlife – Game Meat 	Undermined traditional resource use systems Limited access to markets Human wildlife conflict	Declining wildlife populations (poaching & bush meat) Agricultural expansion causes habitat loss	Climate Change: Droughts, flooding, diseases, frequency of fires. Biodiversity loss		
Arts & Crafts 	Limited access to markets Limited infrastructure & transport systems COVID 19 reduced sales & cross-border trade Increased settlement puts resource under pressure.	Reduced vegetation cover due to land clearing for agriculture & high elephant populations Uncontrolled logging, charcoal & wood production Uncontrolled burning	Climate Change: Droughts, flooding, frequency of fires Biodiversity loss	Increased human wildlife conflict during seasonal migration	

1 Governance risks and challenges were deemed to be cross-cutting across the different livelihood strategies and are deliberately not separated.

Opportunities to build Resilient and Diversified Livelihoods

There are several opportunities to support the resilience of existing livelihood strategies and diversify livelihood strategies in the KAZA TFCA to efficiently contribute and enhance the livelihood outcomes in Section 3.2.

					
Tourism	Develop a 4x4 tourism route with designated campsites, wildlife, and cultural ambassadors as guides to support income generation, training, and employment of local residents. Potential lodge development along the Kwando floodplain. Development of tourism related fisheries. A new tourism border access point between Namibia and Angola will be required.	Capacity building of CBOs (e.g., in marketing and negotiating) in the trophy hunting business. Allocation of hunting concessions and headleases for management plans to adjacent communities and CBOs Expansion of cultural tourism and agri-tourism.	Development of community run tourism including the provision of activities (e.g., game drives, boat trips, angling etc.) and service provision to the tourism industry.	Tourism development in the Sioma-Ngwezi NP with concessions for the two neighbouring Community Resource Boards Development of community run lodges and campsites with activities. Development of service provision to the tourism industry	Community lodge ownership and development
	Training of guides, managers, staff at all levels to ensure localisation of industry.				
Fisheries	Define fishing seasons for sustainable fishing harvesting using suitable gear accepted by the Angolan government. Development of fish reserves to restore depleted fish stocks	Commercialisation of the fishing and basketry industries.	Controlled expansion of fish ranching Development and support to existing fish reserves to restore depleted fish stocks; including training for local residents to become guides.	Sustainable fish harvesting through fish farming/ranching. Development of fish reserves to restore depleted fish stocks	
Agroecology	Financial support for Conservation Agriculture to improve household income, storage of products, market accessibility and processing through community mills. Improve systems to manage HWC for villages in Luengue-Luiana National Park.	Promote livestock herding and kraaling to reduce HWC and improve rangeland and crop production. Promote cluster farming. Improve the storage, processing, and marketing of produce. Develop new markets for arable produce and meat, particularly if produced in a HWC friendly manner. Business focused horticulture supplying towns and tourism hubs.	Scaling up and expansion of conservation agriculture and agroecology. Establishment of cluster farms. Scaling up of crop-livestock integration activities. Promoting peer-learning. Business focused horticulture supplying towns and tourism hubs. Production of chilli and other cash crops for sale and HWC reduction. Development of a KAZA-wide approach to Commodity Based Trade for beef providing meat from cattle to towns and tourism hubs as well as game meat value addition in conservancies. Sustainable timber harvesting based on well-regulated timber harvesting through a community-based concession program. Establish centralised collection and processing hubs for NTFPs	Expansion of climate smart agriculture and use of drought resistant crops. Sustainable livestock farming Sustainable horticulture including cashew nuts and other cash crops including fruit production, potentially utilising small-scale irrigation Poultry and egg production Developing value chains for NTFPs e.g. caterpillars, Devil's Claw, medicinal plants, Sustainable, well-regulated timber harvesting based on a community-based concession program. Beekeeping and honey processing. Establish centralised collection and processing hubs for NTFPs	Regulate sustainable utilisation of forest resources. Establish centralised collection and processing hubs for NTFPs

					
Forests and NTFPs	Economic and ecological viability of establishing a certified indigenous products industry (e.g., Devil's Claw, Manketti) Establish centralised collection and processing hubs for NTFPs including beekeeping and honey production.	Commercialisation of NTFPs focusing on diversification of products including those not currently used for critical subsistence needs of humans or wildlife. Scale up existing honey production: Improve market accessibility, central hub for the collection, processing and marketing of the honey. Establishment of centralised collection and processing hubs for NTFPs	Sustainable timber harvesting based on well-regulated timber harvesting through a community-based concession program. Establish centralised collection and processing hubs for NTFPs	Developing value chains for NTFPs e.g. caterpillars, Devil's Claw, medicinal plants, Sustainable, well-regulated timber harvesting based on a community-based concession program. Beekeeping and honey processing. Establish centralised collection and processing hubs for NTFPs	Regulate sustainable utilisation of forest resources. Establish centralised collection and processing hubs for NTFPs
Governance	Establishment / strengthening of cooperatives/associations to ensure benefit sharing with communities along the Kavango and Cuito Rivers. Controlled access to resources (e.g. devil's claw).	Support to Community Trusts to improve trust management and benefits to members	Ensure all tourism lodges sign joint venture agreements with conservancies in line with national policy and legislation. Support to CBOs to improve trust management and benefits to members	Establish a formal CBNRM programme and provide further support to Community Resource Boards.	Provision of Community Liaison officers for the KAZA TFCA. Provide information and support materials to communities in local languages.
Human Wildlife Coexistence	Employ community game guards in hotspots of bushmeat hunting. Training to patrol and remove snares / traps, record information and act as agents of change. Expansion of existing support for HWC management (e.g., fixed and mobile predator-proof pens).	Integrated land use planning to designate and establish clustered fields to improve crop security and allow for the concentration of support and intervention activities such as the promotion of Conservation Agriculture, elephant aware farming/corridors and Agroecology.	Improve usage of fixed and mobile lion proof kraals. Training of local community members to make and maintain kraals and elephant proof fences. Improve usage of cluster farming combined with mitigation activities for elephant conflict. Scaling up and expansion of existing planned grazing schemes and lion proof kraals.	Improve usage of fixed and mobile lion proof kraals. Training of local community members to make and maintain kraals and elephant proof fences. Improve usage of cluster farming combined with mitigation activities for elephant conflict.	Further development of wildlife coexistence programmes such as lion guardians. Improve usage of fixed and mobile lion proof kraals including training of local community members to make and maintain kraals and elephant proof fences.
Business Development	Carbon trade PES schemes such as conservation credits	Develop small businesses based on mobile abattoirs or small-scale fixed abattoir facilities for meat production.	Enable local women to produce and sell the material used for lion-proof kraals. Develop beef and game meat value addition in conservancies with slaughter slabs and mini beef and game meat processing plants with private sector partner. Develop tanning and leather work businesses based on hides from livestock and wildlife.	Carbon trade. PES schemes such as conservation credits.	Business development and management training for local community members. PES schemes such as conservation credits.

Impacts of Climate Change on Livelihoods in the KAZA Landscape

The climate changes unfolding across the KAZA TFCA will have profound impacts on the livelihoods of its residents. Climate-related impacts typically exacerbate poverty, which then constrain livelihood opportunities in communities with already limited capacity to adapt. This vicious loop is evident in KAZA as changes in temperature and precipitation are already limiting residents' ability to reliably grow food, fish, forage, and raise cattle. In response, Chemonics International, the implementing partner for USAID/ Resilient Waters Program, conducted a Livelihood-centred Climate Risk Assessment of the KAZA TFCA to accompany this Strategy.

Given the rapid amplification of climate threats, and relatively low adaptive capacity, new and expanded investments into livelihood activities must first pursue a deeper understanding of anticipated climate risks and what's needed to adapt to them. The Climate Risk Assessment identifies geographic areas and livelihoods that are highly exposed to climate changes through spatially explicit and forward-looking estimates of extreme weather indices and high-resolution flood maps. The full analysis and climate adaptation recommendations will be made available on USAID's Climate Links webpage by the end of 2023, https://www.climatelinks.org/. Below is a brief summary of its findings.

Livelihood diversification is a vital climate adaptation strategy. The practice of any single livelihood alone is risky. In recent years, drought has affected agricultural and livestock production while the emergence of more intense wildfires, floods, and heat waves has created new challenges for resource-dependent livelihoods. Most communities have been affected and aware of these climate risks but may lack the resources to anticipate and plan for changing climate conditions.

Drying patterns may pose the most significant risk to livelihoods, limiting resident's ability grow and forage for food, and is often cited as a primary reason for seasonal increases in the frequency of human-wildlife interactions. Observed reductions in the duration of the rainy season alongside an uptick in the frequency of severe heat waves and dry spells over the last decade is already affecting agricultural productivity. Climate models show strong agreement in continued drying patterns under all future climate scenarios across the KAZA TFCA with more significant declines during the dry season. Shorter and increasingly variable rainfall patterns will decrease the reliability of rainfed agriculture. And yet, rain-fed farming remains a key livelihood, placing farmers, especially dryland farmers, at the mercy of longer and more severe dry periods, spurring the need to broaden market access, expand irrigation in some areas, and even supplement income through non-farming livelihoods.

Wildfire potential is increasing across the KAZA TFCA with projections suggesting an uptick in the number of high-risk fire days, increasing the wildfire season from approximately six to eight months in most places. Notably, when fires occur under increasingly hot and dry conditions, the ability for woodlands to re-grow is limited, and dry-season fires will likely continue to transform KAZA's woodlands into open, tall grass savanna, thereby limiting the availability of NTFPs. In the coming decades, more severe fire weather conditions will begin to emerge in the more populated regions of northern Namibia and Botswana, and by mid-century, spread further northward into Angola and Zambia. This new fire regime is especially concerning because the highest historical concentration of fire incidents has occurred in Zambia and Angola where burning restrictions are not tightly controlled.

Flooding plays a vital role in supporting livelihoods in KAZA. Seasonal inundation of floodplains provides opportunities for fishing, foraging for livestock, irrigation for farming, and harvesting of grasses and sedges. Naturally, many communities live and work near these waterways, adjusting their practices to the dry and wet seasons. However, the cost of proximity to waterways can be high, and in years past (e.g., 2003, 2009, 2020), flooding has led to widespread damages and displacement. Using advanced hydro-climatic modelling alongside high-resolution terrain models, the Climate Risk Assessment illustrates the spatial extent of inundation across various flood levels in today's climate [2020] and a future period [2050] under multiple emission scenarios and finds significant expansion in flood risk exposure for communities, tourist operations, and key transportation infrastructure.

Extreme heat will affect every aspect of life in KAZA, placing people, especially the young and elderly at greater risk of heat-related medical incidents. Increased exposure to high temperatures also affects the learning ability of students, makes outdoor labour more strenuous and less productive, limits livestock productivity, spoils fish harvests, and may shorten the tourism season due to higher number of days exceeding thresholds of thermal comfort. Historically, the incidents of extreme heat days have been rather infrequent and limited to the hot and dry season, but by mid-century, the frequency of extreme heat days is expected to increase 3 to 4x and heat extremes will increase during the tourist season, potentially affecting desirability of KAZA as a nature and wildlife destination and limiting the hours which tourist operators can provide fishing, hunting, and wildlife excursions due to the effects on, both, wildlife and tourists.

Climate-related changes in the normalized difference vegetation index (NDVI) indicate much of the KAZA TFCA may become seasonally suitable (7-9 months of the year) to malaria transmission in the coming decades and under all future emission scenarios. Increasing exposure to malaria not only affects residents' health, but countries with malaria risk receive far fewer tourists than countries where the disease is not present.

Taken together, the assessment finds that shorter and increasingly variable rainfall patterns will decrease the reliability of rainfed agriculture; drying patterns will further constrain resource harvesting, fishing, and livestock grazing opportunities, while likely increasing negative human-wildlife interactions; the emergence of wildfires and floods in new areas will limit the availability NTFPs, grazing and farming land, and place more households and infrastructure at-risk; and extreme heat could affect the tourism industry while also limiting the productivity of human labour, livestock, and wildlife.

Solutions for adaptation exist, however, and many resource-dependent livelihoods may endure in many areas with diversification and adequate support and planning. Livelihoods such as farming, livestock production, fishing, and foraging can benefit from expanded access to climate-adaptive and risk management tools and strategies. Meanwhile, authorities can help incentivize residents to invest in climate-adaptive tools and strategies by making financing available and accessible, facilitating the development of insurance options, delivering technical guidance, and ensuring necessary materials and equipment are available in local markets. Concurrently, investments into promising livelihood activities such as tourism, nature-based carbon projects, and non-timber forest products must first pursue a deeper understanding of what resources, skills, financing, and governance frameworks are needed to adapt to rapid and slow-onset climate risks.

4. THE STRATEGY

Vision & Mission

The vision of the KAZA TFCA is *"To establish a world-class transfrontier conservation area and tourism destination in the Okavango and Zambezi River Basin regions of Angola, Botswana, Namibia, Zambia and Zimbabwe within the context of sustainable development"* (KAZA IDP).

Two key objectives to achieve this vision outlined in Article 6 of the KAZA Treaty include:

- Developing and implementing programmes that shall enhance the Sustainable Use of Natural and Cultural Heritage Resources to improve the livelihoods of Local Communities within and around the KAZA TFCA and thus contribute towards poverty reduction; and
- Facilitating a healthy and competitive economic environment which promotes and enables public-private-community partnerships, private investment, and regional economic integration (KAZA Treaty).

This Strategy contributes to the achievement of these objectives by providing a collective vision and integrated approach to enhancing livelihood options in the KAZA TFCA with a set of strategic priorities for the period 2023 - 2032. It identifies appropriate, viable and inclusive livelihood initiatives that support the resilience and sustainability of existing livelihood strategies and diversification options to encourage sustainable economic growth, enhanced wellbeing, and poverty reduction. The vision and mission of this Strategy are:

Vision

To improve the resilience and livelihoods of communities in the KAZA TFCA.

Mission

Improve the livelihoods of rural and urban KAZA citizens by supporting the resilience of existing livelihood strategies, developing viable, inclusive and sustainable nature-positive value chains, and promoting the diversification of livelihood options contributing to food and financial security, wellbeing, land use efficiency and equitable benefit sharing.

Guiding Principles

The Guiding Principles below are core values that provide a framework for expected behaviour and decision-making that guide the implementation of the Strategy.

Principle 1 – Inclusive governance

Households within the KAZA TFCA must be active participants at every stage of development and implementation, participating in the issues that affect their lives and taking part and influencing decisions, services, and activities. Opportunities should be equitably accessible to sectors and households in the community who are interested in nature-positive enterprises, and who are willing to take responsibility. Interventions should follow a bottom-up approach with a focus on vertical integration. This will ensure that interventions are locally relevant, inclusive and tested for viability. Participation, policies, and interventions must be inclusive and equitable to ensure the representation of different voices including women, poor, vulnerable and marginalised groups across the KAZA landscape.

Principle 2 – Ensure interventions meet the needs and interests of communities, are culturally acceptable and build on local and traditional knowledge as well as scientific evidence.

Interventions should focus on meeting the needs and interests of different communities and households, respect local culture and heritage and build on indigenous knowledge systems in support of livelihoods, sustainability, and resilience.

Principle 3 – Enhance resilience and adaptive capacity of people and livelihoods.

The KAZA landscape and its people face a number of challenges, including climate change, restricted livelihood opportunities, limited economic support, poor market accessibility, high levels of HWC, an over reliance on donor funding and limited access to the tourism industry which are a threat to livelihoods. Managing change and improving socio-ecological resilience and adaptive capacity are vital to support and improve the livelihoods of KAZA residents in the short-, medium- and long-term.

Principle 4 – Ensure the sustainability of livelihood options and natural resources on which these depend.

The KAZA TFCA was established to conserve the rich natural resources of the landscape and natural resources that provide the basis for most livelihood strategies in the KAZA TFCA. The sustainable management of natural and cultural resources for current and future generations supports the maintenance, improvement, and diversification of livelihood strategies at a regional, community and household level, and is the heart of livelihood development opportunities.

Principle 5 – Support and enhance regional integration and collaboration.

The KAZA TFCA landscape brings together various countries, communities, ethnic groups and livelihood sectors, and plays an important role in ensuring collaboration, coordination and supporting horizontal and vertical integration. Equitable and sustainable development within areas with high levels of poverty is a challenge that needs to incorporate all aspects of society. Positive relationships between groups and countries should be fostered, identifying common messages, and promoting partnerships and knowledge exchange.

Principle 6 – Monitoring, evaluation, learning and adaptive co-management

An ongoing monitoring process which identifies and assesses both the positive and negative impacts of all livelihood interventions is vital for adaptive management. A participatory approach involving all stakeholders will facilitate shared learning and ensure that revisions and improvements to the implementation process are made where necessary in a timely manner. The KAZA impact monitoring tool provides an existing framework to encourage knowledge sharing and the promotion of exchange, especially through traditional leaders. Bench-marking against comparable projects in neighbouring areas or countries will serve to encourage acceptance.

Strategic Interventions

Based on the challenges, risks and opportunities impacting different livelihood options, the KAZA TFCA will contribute to support existing livelihoods and explore more diverse livelihood options by facilitating an enabling environment through the following strategic interventions:

1 Governance

Governance refers to how a system or institution is controlled and operates and who is accountable. It creates a framework of rules, processes, and relationships to meet desired objectives. The KAZA TFCA brings together different countries, land uses, ethnicities, cultural groups, and livelihood strategies spread over a vast area which creates an opportunity to draw from a variety of lessons learned, create economies of scale as well as synergise and harmonise best practices. The KAZA TFCA plays an important role in creating an enabling environment to promote natural resources management and support livelihood development by:

- Creating a platform for convening stakeholders and ensuring exchange between the local, national, and regional level to enhance communication and exchange.
- Building networks and partnerships to enhance coordination in the management of natural resources and create economies of scale.
- Collecting and aggregating lessons learned and best practices from the ground to support adaptive, evidence-based decision- and policymaking.
- Providing guidance on sustainable projects, partnerships, and interventions, ensuing collaboration and quality control.
- Promoting good governance principles across the KAZA landscape underpinned by adaptive co-management, and lasting institutions for community-based natural resource management (Cox et al. 2010).

2 Locally Led Development

People are at the heart of KAZA and must be active participants in the identification of priorities, projects and in implementation. Communities and households must have decision-making authority and voice in initiatives that affect their lives. Considering traditional knowledge and local experiences builds local ownership and ensures that livelihood interventions are viable, accepted and sustained in the long-term. The KAZA TFCA plays an important role in promoting locally led development of livelihoods by:

- Creating an accessible knowledge base and efficient information dissemination systems that can guide local communities.
- Play a coordinating role on livelihoods research to ensure information collected at the local level translates into action.
- Create networks at a grassroots level to promote peer-to-peer learning and local knowledge generation and dissemination.
- Create platforms and communication channels to ensure local knowledge and priorities are collected and represented in the national and regional decision-making processes (under strategic intervention 1).

3 Capacity Building

One of the specific objectives of KAZA is: *"To build capacity for and within the KAZA TFCA through training, enterprise development and mentoring programmes thus increasing the skills and knowledge associated with the management of Natural and Cultural Heritage Resources and facilitate stakeholder participation in the KAZA TFCA planning and development processes"* (KAZA Treaty). The KAZA TFCA can contribute to capacity building at multiple levels:

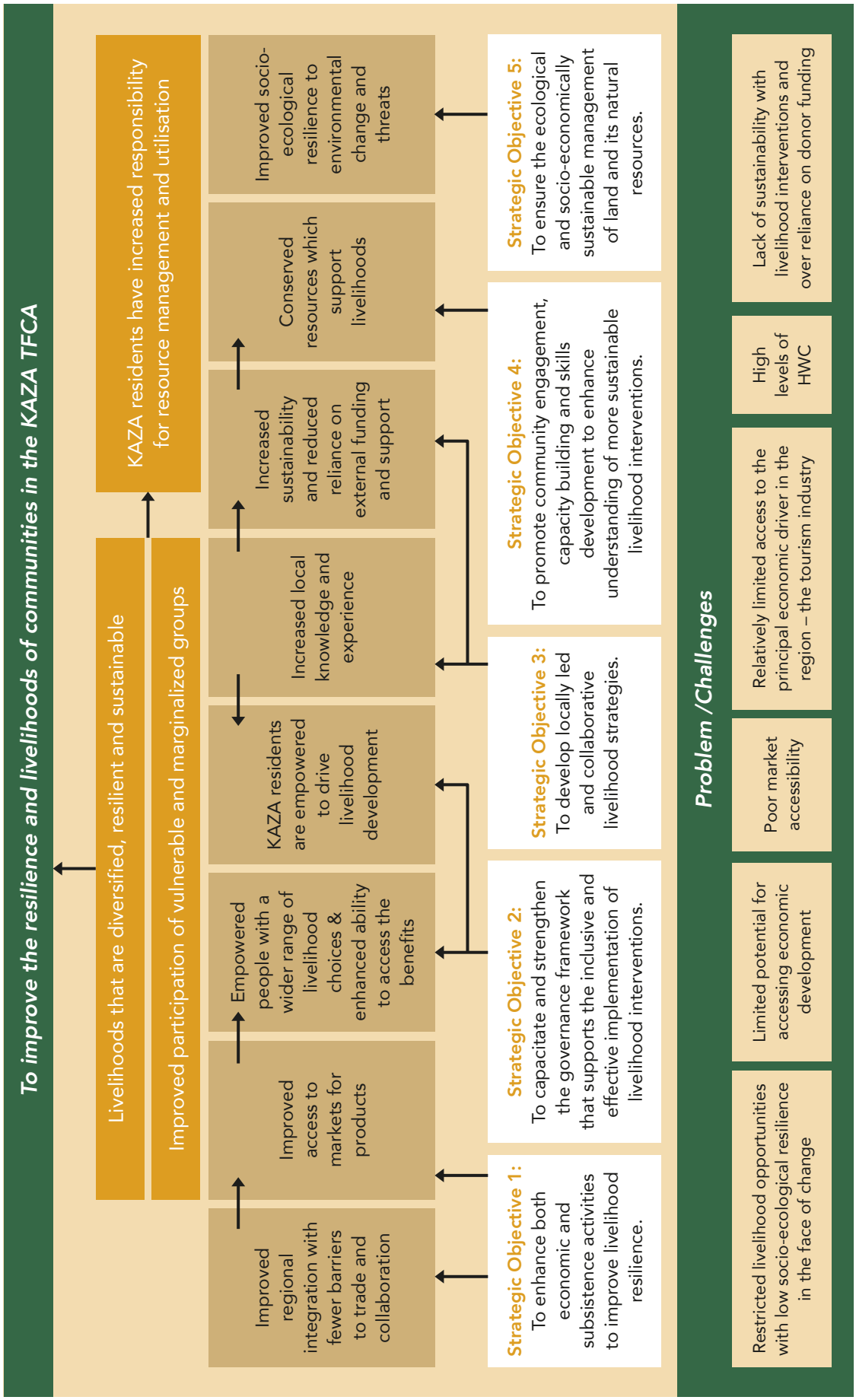
- Collecting lessons learned and developing principles that can be adapted to different contexts to create multiplier effects.
- Building the capacity of national, regional, and international partners to design better projects, promote bottom up and participatory planning, and enhance collaboration between levels in the design and implementation of projects.
- Support process development, standard operating procedures, and streamlining/ mainstreaming of best practices (for example in terms of environmental and social safeguards, gender mainstreaming, and prior and informed consent) across the KAZA landscape.
- Supporting capacity building and skills development at a grassroots level to ensure ongoing support and coaching. This implies developing accessible learning materials, facilitating exchange visits and promoting locally appropriate learning opportunities in local languages.
- Serve as an incubator picking up innovation at the grassroots level, providing support and creating an implementation framework and partnerships to pilot and scale up appropriate innovative interventions tailored to local contexts.

4 Sustainable Adaptive Management of Natural Resources and Land

The KAZA TFCA was established in part to conserve the rich natural resources present within the landscape with one of the specific objectives defined in Article 6 of the KAZA Treaty. The conservation, management and sustainable utilisation of natural and cultural resources is at the heart of livelihood development opportunities and support the livelihood outcomes mentioned above. The KAZA TFCA can:

- Promote the sustainable management of natural resources and land.
- Support land use planning within KAZA to optimise sustainable land uses.
- Safeguard natural resources by inventorying natural resources, develop harvesting protocols and set sustainable offtake limits.
- Develop frameworks and best practices for sustainable use of various resources and the livelihood strategies that depend on them.
- Explore innovative solutions to optimise natural resources use, for examples strategies and value chains that use side-products or waste from other value chains.
- Adopt an evidence-based adaptive management approach, underpinned by monitoring, reflection, learning and adaptation.

Overview/Structure of the Strategy



Strategy Alignment with Legislation/Regulations

The KAZA Livelihood Diversification Strategy is aligned with key policies, strategic documents, regional and international agreements of the various member countries. A more detailed overview is provided in the scoping report for the Strategy. The table below outlines synergies with some the main international and SADC policies and strategies.

Convention on Biological Diversity (1992)	Promoting the fair, equitable and sustainable utilisation of natural resources
SADC Protocol on Wildlife Conservation and Law Enforcement (1999)	Sustainable utilisation of natural resources and promoting community-based wildlife management
SADC Regional Biodiversity Strategy (2006)	Promotion of partnerships between communities, governments and the private sector
The Protocol on Fisheries (2001)	Promoting the sustainable use of fisheries and fish resources
The Protocol on Forestry (2002)	Sustainable utilisation of forestry resources as well as improving the trade options for forest products
The Protocol on Tourism (1998)	Promoting the involvement of communities and KAZA residents in the tourism industry
SADC Tourism Programme (2020-2030)	Sustainable tourism development including improving access to tourism value chains
SADC Programme for Transfrontier Conservation Areas (2013)	Promotion of benefits to KAZA communities Livelihood activities promoting poverty alleviation Empowering local communities, including marginalised groups Promoting opportunities for investment
SADC Guidelines on Community Engagement in TFCAs (2018)	Promotion of a bottom-up approach with active participation in decision making whilst also focusing on the individual and household level and not just the community level. Promoting community engagement within the tourism industry Promoting human wildlife co-existence. Supporting the development of sustainable farming practices. Supporting the sustainable use of forestry and fisheries resources. Promoting cross-border collaboration
SADC Law Enforcement and Anti-Poaching (LEAP) Strategy (2016-2021)	Sustainable trade in and utilisation of natural resources and further integration of people and nature

KAZA Treaty	Relevant Objectives of the KAZA TFCA: • Maintain and manage the shared Natural and Cultural Heritage Resources and biodiversity of the KAZA TFCA to support healthy and viable populations of wildlife species • Provide opportunities, facilities and infrastructure that shall transform the KAZA TFCA into a premier tourist destination in Africa made up of a range of independent yet complementary and integrated sub-regional tourism development nodes • Develop and implement programmes that shall enhance the Sustainable Use of Natural and Cultural Heritage Resources to improve the livelihoods of Local Communities within and around the KAZA TFCA and thus contribute towards poverty reduction • Facilitate a healthy and competitive economic environment which promotes and enables public-private-community partnerships, private investment and regional economic integration • Build capacity for and within the KAZA TFCA through training, enterprise development and mentoring programmes thus increasing the skills and knowledge associated with the management of Natural and Cultural Heritage Resources and facilitate stakeholder participation in the KAZA TFCA planning and development processes
KAZA Master Integrated Development Plan 2015-2020	The main objectives of the Master IDP are to: • Provide for sustainable conservation and management of transboundary natural resources. • Promote harmonisation of policies, strategies, and practices for managing the shared natural resources across the KAZA TFCA landscape • Provide for the development of infrastructure which will allow economic integration, specifically the promotion of regional tourism products across boundaries and private sector investment. • Provide benefits to local communities within and adjacent to key conservation areas within the KAZA TFCA through the development of tourism and the protection of natural and cultural resources.

Institutional Arrangements: Roles & Responsibilities

The governance structure for the KAZA TFCA has multiple levels:

1. The highest authority is the Ministerial Committee, which provides political leadership and ultimate approval.

2. The Committee of Senior Officials (COSO) renders Ministerial Committee decisions more operational, provides policy guidance, has financial oversight, harmonises Partner Country expectations and supervises the Joint Management Committee.

3. The Joint Management Committee administers and manages the KAZA TFCA under the guidance of the COSO. It ensures the participation of stakeholders, monitors the operations of the Secretariat, and creates ad hoc Specialist Advisory Groups when necessary.

4. The National Committees coordinate the implementation of country-specific conservation programmes, ensuring alignment between national and KAZA TFCA-wide activities. The committees facilitate the participation of national stakeholders in the wider planning processes and seek to ensure that local communities derive benefits from the KAZA TFCA.

5. The Secretariat coordinates the day-to-day operations of the KAZA TFCA. It facilitates participation, develops tools, identifies programmes and ensures effective communication. It manages finances, human resources, procurement and language translation. It undertakes publicity and advocacy and is responsible for the website. It develops proposals for donor funding, operates the KAZA TFCA Fund, drafts policy documents and is responsible for monitoring and evaluating the KAZA TFCA programmes.

6. Working groups, which are coordinated by the Secretariat, enhance connectivity between the partner countries for the benefit of the TFCA. One such working group is the Community Working Group (CWG), the purpose of which is *'to give communities living within and around the KAZA TFCA an opportunity to participate in planning the establishment and development of the TFCA and ensure that information is effectively disseminated and exchanged with them'*.

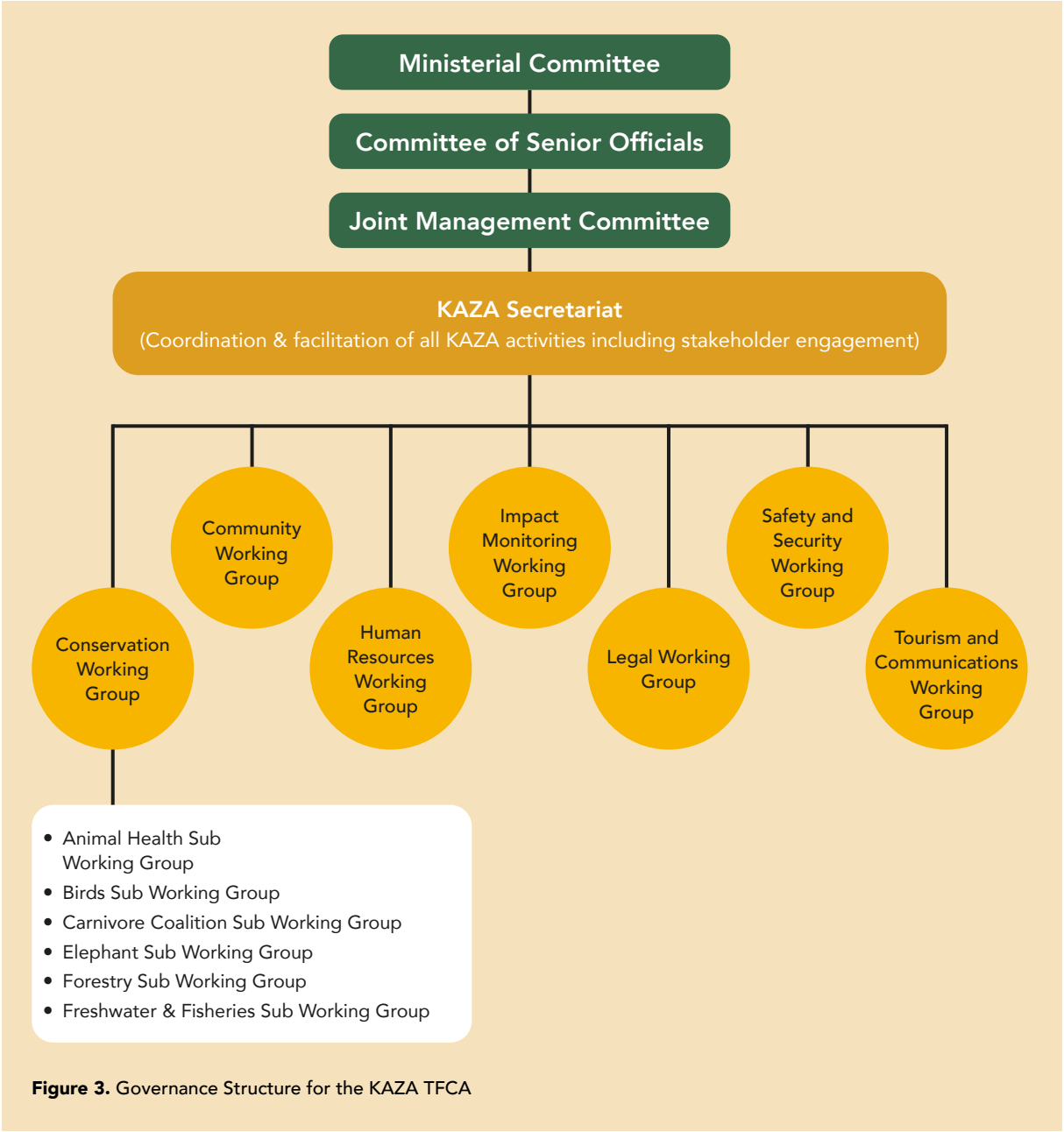


Figure 3. Governance Structure for the KAZA TFCA

In addition to the existing structures, and with support from Namibia-based NGO, Integrated Rural Development and Nature Conservation (IRDNC), KAZA set up six community Transboundary Natural Resource Management (TBNRM) fora to improve the management of shared natural resources on the ground, share knowledge and build linkages to KAZA TFCA's decision-making platforms that include government officials.

Implementation of the KAZA Livelihoods Diversification Strategy will require support from the higher level KAZA decision-making institutions to create an enabling environment for government line ministries, NGOs, and the private sector to implement livelihood

interventions on the ground. KAZA institutions provide coordination between different implementation organisations and encourage and promote smart partnerships. Public-private partnerships will be important for implementing key aspects of the Strategy, particularly sustainable land management initiatives, integration of the private sector into local economies and capacity building for the development of community-led ventures. The National Committees will be the primary KAZA institutions for promoting this strategy as they are responsible for developing national level projects within the KAZA context and for implementation at national level. However, they should be guided also by recommendations from the Community Working Group.

5. ACTION PLAN

The Action Plan is based on the following five Strategic Objectives:

1. To enhance both economic and subsistence activities to improve livelihood resilience.
2. To strengthen and capacitate the governance framework that supports the inclusive and effective implementation of livelihood interventions.
3. To develop locally led and collaborative livelihood strategies.
4. To promote community engagement, capacity building and skills development to enhance understanding of more sustainable livelihood interventions.
5. To ensure the ecological and socio-economical sustainable management of land and its natural resources.

The strategic objectives will be achieved by implementing a series of strategies and actions, which are outlined below. The Action Plan outlines the overarching strategy across the KAZA TFCA, as well as targeted actions for specific livelihood areas.

Strategic Objective 1: To enhance both economic and subsistence activities to improve livelihood resilience.

Outcome 1.1: By 2027, viable, sustainable nature-based enterprises and value chains are in place.

Reliable and sustainable financial income for communities enhances self-sufficiency and reduces the reliance on continuous donor contributions. Financial assets enable communities and households to invest in appropriate technologies, recover rapidly after weather-related impacts and to plan ahead. In conjunction with existing local rules, boundaries, monitoring and conflict resolution mechanisms, financial benefits also enable local people to protect

natural assets from short term over-exploitation of wild species and the ecosystems supporting these species. There is mutually reinforcing feedback between stewardship, institutional functioning and financial incentives. Examples in Snyman et al. (2021) from South Africa and Namibia illustrate this clearly: Where ownership of fauna and flora is allowed and financial benefits accrue, the conservation of fauna and flora has also improved.

There is a need for locally contextualised adaptive management to enhance the viability and sustainability of diverse portfolios or 'bundles' of nature-based enterprises at local scales. Co-created solutions should be centred around five first order principles: 1) diverse, inclusive and equitable partnerships; 2) indigenous people and local communities in the driving seat, supported by intermediaries; 3) a focus on financial, social and ecological resilience along entire value chains; 4) promotion of diverse bundles, or portfolios, of nature-based enterprises at local level; 5) gender inclusivity; and 6) evidence-based adaptive management, informed by well-structured monitoring and learning programmes.

Strategies	Actions
• Identify and evaluate existing and past nature-based enterprises. • Investigate use potential and market demand for non-food NTFPs occurring across the KAZA landscape. • Provide support through training, linking entrepreneurs to intermediaries, monitoring systems and seed funding. • Monitor the development of these value chains and support adaptive management.	• Identify existing NTFP usage and also conduct sustainability assessments of NTFPs prior to the upscaling of existing or proposed NTFP harvesting, processing, and marketing. • Conduct inventories of existing nature-based enterprises and entrepreneurs at local or District scales, as well as new opportunities • Map the value chains for each enterprise, and identify supplies, primary users, intermediaries, and markets. • Together with community-based entrepreneurs, collaboratively assess the provisional viability of each enterprise using nature-based enterprise viability assessment tools. • Establish collection hubs and processing centres to minimise transport requirements and ensure access for small-scale harvesters. • Establish production M&E systems for each new value chain.

Outcome 1.2: By 2027, develop frameworks/standard operating procedures and best practice guides for the sustainable use of various resources and the livelihood strategies that depend on them.

Rural development options in drylands are limited due to environmental constraints. This needs to be considered in livelihood interventions. Climate change predictions indicate that much of the KAZA area will become drier. Livelihood strategies must be adapted to these changes in environmental conditions and resources availability. There is a considerable need for collaborative and integrated monitoring of resources, livelihoods, governance systems, livelihood strategies and livelihood outcomes to inform evidence-based adaptive management. This can be done using the KAZA Impact Monitoring toolkit.

Maintaining the natural resource base is a key strategy to support livelihoods in the long-term. This may require a shift in existing practices and thus a change in mindset and behaviour at a household level. Sustainable natural resource management approaches should build on traditional knowledge as a starting point to create ownership. There is a need to work with local communities to identify the best ways to portray their past and current culture, way of living and culturally valuable resources, their use and availability. This should provide the basis for developing best practices for sustainable natural resources and land management that can be promoted across the landscape, as well as support and promote livelihood strategies that are aligned with traditional values and sustainable management principles. Guidelines for inclusive and ethical community engagement, and social safeguards protocols should be developed. These guidelines and protocols should build on existing frameworks and adapted to the local context.

Strategies	Actions
• Identify and evaluate operating procedures and best practice guidelines for resource management in similar landscapes. • Modify frameworks based on assessment and monitoring in 1.1. • Ensure alignment of proposed procedures and guides with existing policies, and lobby for policy amendments if necessary. • Expand crop-livestock integration to improve agroecosystem processes.	• Partner States to review traditional agricultural policies which promote and support conventional agricultural methods to the detriment of agroecological practices. • Identify activities that local people are comfortable with and understand. Introduce innovations slowly and with interested individuals who can demonstrate to others. Build ownership and community pride. • Work with partners to identify and secure third-party funding to support sustainable livelihoods programs and services. • Work with communities to identify traditional natural resources and land management practices, assess their suitability and cultural acceptability in a changing environment and identify options to make them more sustainable. • Undertake regular stock takes of the availability and use of important natural resources through the compilation of ongoing monitoring reports and activities utilising the KAZA Impact Monitoring Toolkit. • Assess impacts of resource availability and potential degradation on different livelihood strategies. • Identify partners and develop a framework and approach for regular inventories of the natural resources within the KAZA TFCA. • Conduct regular resource inventories in collaboration with partners and citizens to adapt utilisation protocols and ensure sustainable harvesting. • Provide guidelines for sustainability assessments prior to upscaling existing or proposed harvesting, processing, and marketing operations. • Promote evidence-based adaptive management by implementing the standardised KAZA livelihood monitoring tools.

Outcome 1.3: By 2025, conduct an assessment of waste or by-products from existing livelihoods and support innovative solutions to create value addition and livelihood diversification.

The availability of natural resources is constrained and strongly impacted by climate change and seasonality. More attention should be paid to optimising natural resource use and valuing traditional knowledge. This may include saved seeds, traditional crops and traditional medicines. Furthermore, there is considerable scope for value addition to side or waste products of existing value chains. For example, there is a considerable international demand for furniture made with Nguni fur or hides, which are side products of meat production. Agricultural waste can be used to create sustainable packaging or energy (through biogas or biomass-to-energy plants). There are also opportunities around novel food products, pharmaceuticals, and cosmetics as well as the use of waste material for craft production. These novel value chains and livelihood opportunities will require in depth assessments and feasibility studies before they can be developed, but opportunities can be identified throughout activities related to the previous outcomes.

Strategies	Actions
• Evaluate and develop options for waste and by-product derived value chains.	• Identify suitable partners to assess the feasibility of the intervention, market demand and potential for piloting and upscaling. • Identify potential innovative projects to utilise existing by-products or waste products to enhance value and provide alternative livelihood options. • Ensure that intellectual property rights are valued and protected.

Outcome 1.4: By 2025, explore innovative or alternative financing mechanisms for sustainable management of natural resources.

Over recent years, there has been a considerable push to move away from a reliance on donor funding and develop innovative, including market-based, financing mechanisms to support and reward conservation and the sustainable management of land and natural resources. Several initiatives have explored the potential for Payment for Ecosystem Services (PES), conservation agreements and wildlife credits in the KAZA landscape. These should be mainstreamed across the KAZA landscape in partnership with local communities and implementing institutions.

Strategies	Actions
• Identify existing initiatives and opportunities to establish mechanisms such as PES, wildlife credit or carbon credit schemes. This needs to include the level of effort by the beneficiary community, not just rewarding for 'not-doing' a defined activity but to better reflect the active contribution of communities. • Support project development and ensure benefit sharing mechanisms provide appropriate benefits to households to avoid degradation, deforestation, or biodiversity loss.	• Identify target communities with corridors or biodiversity that require protection. • Identify target communities where avoided deforestation or avoided soil degradation can be incentivised. • Identify partner organisations willing to invest in a suitable scheme and facilitate partnership development. • Conduct assessment of initiatives and opportunities in similar landscapes. • Ensure contracts and mechanisms are structured so that the community receives appropriate benefits which provide sufficient incentives.

Strategic Objective 2: To capacitate and strengthen the governance framework that supports the inclusive and effective implementation of livelihood interventions.

The KAZA Secretariat is hosted in Kasane, northern Botswana, and serves as the facilitating organisation working closely with the implementing Ministries of the five Partner States. Its overall mandate is to facilitate the development of KAZA TFCA into a world-class conservation area and premier tourism destination under the guidance of the Partner States and with support from development partners and stakeholders. This also involves enhancing *"the sustainable use of natural and cultural heritage resources to improve the livelihoods of resident communities"*. Within the KAZA TFCA there are a number of working groups which serve to enhance connectivity between the partner countries for the benefit of the TFCA. The KAZA TFCA plays an important role in creating an enabling environment to promote natural resources management and support livelihood development, convening stakeholders, finding synergies, and promoting best practices.

Outcome 2.1: Promote good governance principles across the KAZA landscape, increase the effectiveness and efficiency of existing mechanisms and incorporate local experiences and priorities into decision- and policymaking by 2025.

As discussed in Section 4.6, the KAZA TFCA landscape is characterised by a broad set of stakeholders from the public, private and civil society sector, which creates the opportunity to harmonise practices and approaches and promote good governance principles including

professionalism, ethics, accountability, transparency, participation, responsiveness, compassion and humanity, and leadership. At local level, the principles of lasting institutions for sustainable management of common pool resources outlined by Cox et al. 2010 should be promoted.

The local level must be informed about key developments and initiatives at higher political levels with efficient and effective mechanisms for collecting, aggregating, disseminating, and exchanging information must be created. Experiences from the ground, needs and priorities of communities and households must feed into decision- and policymaking processes. This can be done by bringing together representatives from different networks (e.g., community and transboundary forums), implementing organisations, donors, and government representatives, and integrating information dissemination and the collection of feedback into the work of field-based organisations.

Strategies	Actions
• Establish appropriate training protocols and communication channels targeting natural resources governance at multiple levels.	• Provide targeted training for implementing personnel from Partner States to ensure they can provide adequate support to communities. • Identify, map and match existing processes and forums that could be strengthened and/or expanded. For example: – Community Working Group – National Committees that provide a mechanism for in-country consultation to feed into other KAZA structures – Transboundary resource forums within the WDAs • Identify appropriate communication channels and mechanisms. • Identify stakeholders working in the landscape and main activities. • Facilitate meetings to discuss collaboration and streamlining of processes. • Create guidelines for promoting good governance in livelihood interventions. • Assess and build capacity of local level stakeholders to engage in visioning, planning, prioritisation, and decision-making.

Outcome 2.2: By 2025, existing exchange structures are operational with biannual engagements/meetings between the local, national, and regional level to enhance communication and exchange on livelihoods.

A platform for exchange enhances information sharing between different stakeholders, encourages the exchange of knowledge and best practices, improves coordination, and can guide the implementation of the Strategy. The platform should convene representatives from

national governments, implementing institutions from public and private sector as well as civil society, and communities to create vertical linkages and connect the grassroots level with the policy level.

The platform will discuss strategic issues at the landscape level, informed by relevant data, which can then be communicated as a joint position to higher decision-making levels.

Strategies	Actions
• Establish knowledge and learning exchange systems to facilitate regular meetings across all stakeholder levels.	• Consolidate all existing exchange structures previously established within KAZA, their current status and the best structures for maximising communications within KAZA. • Identify and prioritise needs requirements to further operationalise and ensure sustainability of communications and exchanges. • Host biannual meetings to create exchange and discuss strategic issues. • Develop policy briefs or position papers to support local, national and regional decision-makers.

Strategic Objective 3: To develop locally led and collaborative livelihood strategies.

There is a need to understand why people take certain livelihood decisions or engage in certain practices and to tailor interventions accordingly. Understanding the complexity of rural livelihoods and the drivers of sustainable use requires the participation of rural people themselves in designing and developing new livelihood activities. Interventions should be based on locally identified needs and benefits should be defined by the intended beneficiaries, with appropriate support from intermediary organisations to promote viable nature-based value chains.

Outcome 3.1: An accessible knowledge base and efficient information dissemination systems for local communities informing local, national and regional decision-making are operational by 2025.

Access to information provides the basis for informed decision making. An improved knowledge and understanding of livelihoods and potential shocks promotes self-help and community-based solutions to environmental problems and socio-economic challenges. Communities and households in the KAZA landscape must have access to information regarding livelihood-based interventions and that opportunities such as training do not exclude anyone on the basis of gender, age, or ethnicity.

There must be structured processes to enhance awareness and ensure feedback loops from the lower level to national institutions and the KAZA TFCA Secretariat. These functions can be fulfilled by agencies, community forums and organisations, which should be elected by the households within communities to ensure legitimate representation. These community forums for horizontal integration and communication can be used to support knowledge generation and dissemination, and capacity building interventions under the other strategic objectives and outcomes.

Strategies	Actions
• Develop an information management system to store and disseminate knowledge relating to livelihoods, entrepreneurship and economic activities, which will support local community as well as national and regional policy decisions.	• Identify available information, information needs of communities and its accessibility of information. • Identify suitable communication and information dissemination channels that are usable by communities. • Host regular meetings to share information, listen to concerns and identify opportunities particularly regarding transboundary and KAZA level activities. • Ensure communities are represented on the KAZA Community Working Group and feedback mechanisms from the working group to communities are established. • Develop a data repository on research, information materials and guidelines, and integrate it with the existing KAZA Impact Monitoring Platform. • Build and maintain partnerships to support information sharing and knowledge creation. • Implement standardised community-based monitoring systems to inform adaptive management. • Strengthen institutional support to ensure good governance and enable community participation within decision-making processes.

Outcome 3.2: The KAZA Impact Monitoring Working Group leads coordination of livelihoods research within the KAZA TFCA by 2028 to ensure information collected at the local level translates into action.

Due to the unique and diverse ecological and socio-economic context in the KAZA TFCA, the area regularly hosts researchers from all over the world consulting communities on their livelihoods and challenges they are facing in a changing world. Oftentimes, this information and data are not shared with local communities, national and regional institutions. There is also an opportunity to guide research initiatives to ensure they address priority research areas of the KAZA landscape and thus contribute to a better knowledge base and decision-making. There is a considerable need for more coordinated research in the KAZA region to ensure the results are available to support local, national, and regional objectives, develop programmes and monitor the impacts on people, natural resources, and livelihoods over time. This does

not only include academic research, but also information materials and toolkits developed under donor funded projects. The aims should be to have a central data repository that is accessible to all.

Strategies	Actions
• Coordinate research on rural and urban livelihoods through the KAZA Secretariat and ensure researchers align topics with KAZA TFCA information needs. • Ensure research outputs are captured in the information management system.	• Identify various institutions, research projects and individual researchers in the landscape and understand the nature, type and extent of research in the KAZA TFCA. • Create a network of key institutional partners conducting livelihoods research in the area. • The KAZA Secretariat and partner state representatives develop a list of priority research projects to fill knowledge gaps that could support livelihoods. • Ensure research lists, data repository and website are regularly updated and that there is regular feedback to communities providing a continuous feedback loop to guide ongoing and future research.

Outcome 3.3: By 2027, grassroots level networks are created to promote peer-to-peer learning and local knowledge generation and dissemination.

To enhance community engagement in bottom-up planning and decision-making processes as part of the governance framework under Strategic Objective 1, there is a need to create horizontal integration between communities and households. Cooperation, organisation, and regular communication between communities in different areas will support representation, participation and advocacy of community interests in higher level processes and platforms. These networks can also facilitate knowledge exchange and finding solutions to common issues, problems, and solutions, underpinned by locally led monitoring using KAZA livelihood monitoring toolkits.

Strategies	Actions
• Promote clustering of community organisations and the creation of community forums where higher-level forums do not yet exist and expand the number of transboundary community forums.	• Establish formal partnerships between comparable communities both in-country and between Partner States (twinned communities) to promote cultural exchange and learning. • Engage communities throughout the planning, development, and implementation processes enhancing active participation (bottom-up approach) at every step. • Support exchange visits and capacity building conducted by champion farmers or community champions within countries and across borders.

Strategic Objective 4: To promote community engagement, capacity building and skills development to enhance understanding of more sustainable livelihood interventions.

Governments, NGOs and donors often fail to provide proper business support and training to ensure livelihood projects are sustained beyond project timelines. Across the KAZA landscape, the long-term sustainability of livelihood initiatives can be enhanced by building individual, community and institutional capacity, for example by enhancing cooperation between conservation players and business organisations. The role of training and capacity building facilitates individual and organisational change and contributes to achieving development targets. Capacity building and skills development includes traditional and non-traditional activities such as climate smart agricultural practices as well as business management and bookkeeping.

Outcome 4.1: By 2027, lessons learned are used to develop livelihood support and diversification principles, best practices and standard operating procedures that can guide livelihood initiatives in different sectors and countries.

Strategic Objective 4 contributes to a better knowledge base on concerns, challenges, livelihoods, and adaptation strategies at a local level. This will allow the identification of best practices in the development and implementation of different livelihood initiatives, which can be replicated and adapted to different contexts. The information can also support existing programmes, for example on climate smart agriculture, rangeland management practices and human wildlife conflict mitigation, and can inform policies and protocols to support different livelihood strategies. The lessons learned can also support the optimisation of processes and development of standard operating procedures to streamline and mainstream best practices (for example in terms of environmental and social safeguards, gender mainstreaming, as well as free, prior and informed consent) across the KAZA landscape.

Strategies	Actions
• Establish a systematic approach for incorporating lessons learned and best practices as part of the larger information management system.	• Implement a five-year review of this Strategy document and progress made towards improving livelihoods across KAZA. • Develop best practice guides for the different livelihood strategies. • Disseminate information in local languages through existing community forums and appropriate media. • Facilitate exchange visits and benchmarking to effective examples of different livelihood strategies to promote familiarisation and practical learning.

Outcome 4.2: By 2027, standards to ensure the appropriateness of livelihood projects are developed, implemented and maintained.

As outlined in previous sections and in Annex 9.1, livelihood projects should be developed in a participatory and people-centred way to ensure their needs, interests and priorities are considered, and the project is well adapted to the local context. Various different frameworks – such as the DFID Sustainable Livelihoods Framework or the KAZA Livelihood Monitoring Toolkit – exist and can be adapted to specific needs building on lessons learned from previous outcomes, for example by creating guidance materials on developing and implementing sustainable, high quality and collaborative projects. Income generating activities should be designed as viable, demand driven businesses linked to workable value chains and dependable markets. There should be targeted training for implementing personnel from Partner States to ensure they can provide adequate support to communities.

Strategies	Actions
• Ensure continuous learning and improvement for livelihood intervention programs. • Promote detailed and continuous monitoring and evaluation through the KAZA Impact Monitoring toolkit and ensure lessons learned are shared with relevant stakeholders and authorities.	• Develop guidance material on developing and implementing sustainable, high quality, locally relevant and collaborative livelihood projects. • Capacitate community organisations to develop livelihood projects. • Sensitising national, regional, and international partners to design more appropriate livelihood projects and viable businesses along product value chains; promoting bottom up and participatory planning; and enhancing collaboration between levels in the design and implementation of projects. • Capacitate Partner State institutions and implementing agencies in project development, support to local communities and communication and awareness to all stakeholders. • Work with national partners to develop a training programme that increases capacity at individual and institutional levels. • Develop and implement short courses with progressive training to build skills. • Develop an enhanced communication and promotional campaign for training programs and activities within KAZA. • Identify potential resources and partnerships to support community-driven programs that contribute to local food security, particularly those that support people with limited access (e.g. single parents, women, elders, disabilities, youth etc.). • Work with partners to support climate change adaptation programs that focus on harvesting, traditional economy and food security.

Outcome 4.3: By 2025, implement annual capacity building and skills development programmes at a grassroots level to ensure ongoing support and coaching.

The information, best practices and guidelines produced under the previous outcomes can be used to develop training materials for capacity building, which can be developed and implemented with national partners, for example in the form of short courses. This should be based on the capacity building needs of communities, households, and different stakeholders, and can include technical knowledge on the sustainable management of natural resources, as well as life and business skills. For example, it could include targeted training for SMEs, CBOs, and entrepreneurs in the effective use of social media for business marketing and communications or digital payment systems to reduce the requirement for cash transactions.

Strategies	Actions
• Develop a capacity-building framework for sustained support to entrepreneurs and supporting agencies.	• Conduct a capacity building needs assessment. • Develop training materials in collaboration with partners. • Implement training, mentoring and other relevant learning programmes.

Outcome 4.4: By 2027, KAZA's networks and partnerships are improved and expanded to enhance coordination and create economies of scale.

The KAZA TFCA, due to its transboundary nature, plays an important role in developing partnerships and networks that benefit all member countries, communities and households. Especially the development of value chains is linked to access to markets, which is mostly led by the private sector. Access to markets is constrained by the production efficiency and volume of predominately subsistence-based livelihoods. The KAZA TFCA can facilitate clustering of larger areas to fulfil the quantity and quality needs of markets. KAZA can also contribute to improved connectivity and trade between Partner States, for example by reducing or removing trade barriers to facilitate regional trade.

Strategies	Actions
• Encourage KAZA policy that harmonises national policies for improved integration and investment that is beneficial for all, for example by encouraging Partner States to offer incentives for companies that invest in local activities. • Promote procurement from local enterprises; increasing recruitment, training, and progression of local staff; developing partnerships with local entrepreneurs (e.g., craft sellers and other vendors, tourism-related services, taxis, providing advice on what tourists are looking for); supporting local cultural and heritage products and excursions; encouraging expenditure in the local economy.	• Partner States to review the potential for targeted relief from duties for specific produce or resources including NTFPs for processing. • Develop KAZA and national policies for encouraging improved integration and investment in linkages. Provide tax incentives for companies that invest in local linkages. Companies should consider the full range of options and compare these to their own strategic position and assets, leading to increased development of local products, procurement, and partnerships. • Work with local suppliers and distributors to link local producers and communities with markets such as tourism camps and lodges. Local suppliers will be able to buffer the local supply to ensure that market demands continue to be met throughout the year. • Work with regional and international trade networks to identify markets outside of KAZA for products and produce from within the KAZA landscape. This may include NTFPs (processed or unprocessed), craft and curios, fish and agricultural products or by-products. • Build upon existing pilot and developmental projects which have provided promising results to date. • Identify and facilitate access to markets within the KAZA landscape for agricultural produce grown or reared within the landscape. This may include beef products through Commodity Based Trade (CBT), or horticultural produce grown in areas with sufficient water availability but which may be some distance from markets.

Strategic Objective 5: To ensure the ecological and socio-economically sustainable management of land and its natural resources.

There needs to be a clear link between the livelihood activities and conservation outcomes. The KAZA landscape supports a rich diversity of natural resources and ongoing efforts to improve the sustainability of traditional practices such as livestock and arable agriculture and fisheries. However, improving resource management and the associated livelihood benefits does not happen overnight and needs to be supported by demonstrable evidence of sustainable benefits.

Outcome 5.1: By 2025, implement sustainable, nature-positive and climate smart land and natural resources management systems and practices.

Remote rural areas often do not lend themselves to income-generating business activities due to limited access to local markets and the distance to external markets. People living in these areas should however be supported in sustainable land management practices such as conservation agriculture, backyard gardens and managed grazing, which can strengthen local food security and nutrition while avoiding over-utilisation of resources and the associated degradation.

Strategies	Actions
• Support the management and conservation of natural resources by local communities and other stakeholders including using climate smart technologies to ensure long-term sustainability beyond the timeframes of any external subsidised support.	• Work with communities to develop and support climate smart livelihood projects which utilise local knowledge and techniques to improve the sustainability of the natural resource base. • Build upon existing HWC projects and activities being implemented across KAZA to mainstream sustainable rangeland management policies, sustainable natural resources and land management best practices, and mitigate the impacts of HWC. • Develop opportunities where HWC mitigation activities have additional benefits such as employment and positive by-products (e.g., chilli, honey). • Identify means to enhance water security, particularly for remote communities, including through the development of rainwater harvesting and storage. • Improve access to renewable energy resources including through large scale commercial enterprises but also at small scale household level. • Work with communities to develop and support climate smart agriculture projects which utilise local knowledge, targeted crop selection and cultivation techniques to improve sustainability and soil and water conservation. • Explore potential opportunities for equipment rebate or subsidy programs to help low-income community members have the basic equipment necessary to implement climate smart agriculture.

Outcome 5.2: Support integrated land use planning within KAZA TFCA that supports sustainable livelihoods.

The KAZA landscape is characterised by a multitude of different land uses and livelihood strategies, each facing their own challenges (as outlined in Chapter 3). The KAZA TFCA in collaboration with communities, local and national authorities and stakeholders should continue to support integrated land use planning, for example through further implementation of the Land-Use Conflict Identification Strategy (LUCIS) Model.

Strategies	Actions
• Coordinate the efforts of relevant authorities and communities within Partner States to fully integrate land use management minimising potential conflict.	• Relevant authorities within Partner States to work together to ensure fully integrated land use management which minimises areas of potential conflict. • Incorporate the Land Use Conflict Identification System (LUCIS) into all land use planning processes across KAZA. • Ensure proper and effective engagement with communities on relocation or resettlement, or alignment of corridors across borders. • Ensure new land use planning is aligned / harmonised with existing initiatives such as conservancy plans and regional Integrated Land Use Plans within Partner States.

The table below outlines key actions for each livelihood priority area.

Livelihood Priority Area	Applicable Outcomes	Applicable Partner State	Action
Agroecology	Outcomes 1.1, 1.2, 1.4, 4.1, 4.2, 4.3, 4.4, 5.1,		• Prioritise the implementation of climate smart agricultural practices with the necessary training and support to operationalise these practices in the long-term. • Develop commercial horticulture projects with a focus on supplying to towns and tourism hubs. Work with local suppliers to identify preferred crops for the market and establish access into markets. • Establish local processing sites to provide value addition services and opportunities for livestock, crops and NTFPs. Sites can be established as community cooperatives with support from donors or Partner States. • Provide business development and marketing training for local producers to aid commercialisation of agroecology activities. • Establish a quality certification for products such as 'elephant aware' to serve as a sign of premium produce certified as produced within KAZA and in a conservation friendly manner.
Tourism	Outcomes 1.2, 1.3, 4.2, 4.3, 4.4		• Development of enhanced service provision to the tourism industry with a focus on areas such as waste management. • Focus on developing sustainable cultural tourism activities to complement existing wildlife based photographic tourism products.
Fisheries	Outcomes 1.1, 1.2, 1.4, 2.1, 2.2, 3.1, 3.3, 4.1, 4.2, 4.3, 4.4, 5.1		• Controlled development of fish ranching to provide a sustainable fisheries resource. • Implementation of Community Based Fisheries Management including Fish Reserves. • Clearly define roles for local, national and regional authorities in fisheries management and ensure strong community engagement within the management processes. • Establish a quality certification to serve as a mark of premium fisheries produce harvested in a sustainable manner which is certified as conservation friendly.
NTFPs	Outcomes 1.1, 1.2, 1.3, 1.4, 3.1, 3.2, 4.1, 4.2, 4.3, 4.4, 5.1, 5.2		• Conduct resource surveys to identify and quantify available NTFPs. Can be conducted either locally or as part of a wider regional assessment. • Conduct research into the use and potential commercialisation of NTFPs. • Ensure that intellectual property rights are identified and appropriately valued and secured.
Business Development	Outcomes 1.1, 1.2, 1.3, 1.4, 2.1, 2.2,3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 4.4, 5.1		• Establish conservation agreements with local communities. • Identify and develop PES schemes such as conservation credits to protect a clearly defined resources, habitats or species. Training will be required to manage the scheme locally, providing employment opportunities rather than solely payments. • Implement training in the use of social media for marketing and business development.
Sustainability	Outcomes 1.3, 1.2, 1.3, 2.1, 2.2, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 4.4, 5.1		• Establish and support water conservation practices such as rainwater harvesting to provide a reliable water source. • Facilitate the uptake of renewable energy provision for lighting and energy needs.

6. UNLOCKING FINANCE

Limited access to finance and lack of resources are key barriers to the implementation of key activities outlined in this strategy. Appropriate financing tools and associated regulations are an important component of diversifying livelihoods at a community and household level in the long-term and can contribute to the sustainable management of natural resources, economic development, and human wellbeing.

Financing Mechanisms

The financial approaches outlined below consider mechanisms through which government can provide support, commercial financing, concessional financing, and innovative financing mechanisms which provide capital, de-risk investments and attract further funding by the private sector. These financial mechanisms are targeted at and benefit different levels. Detailed feasibility on appropriateness of the financing mechanism will require further attention, as there will be variability between member states. Existing opportunities across the KAZA landscape will also need additional research.

MECHANISM: GOVERNMENT FUNDING		
Levies are obligatory payments for specific services. For example, a tourism levy could be utilised to invest in local communities and conservation efforts. This commonly occurs as part of joint venture agreements, which is based on bed-nights sold. The disbursement of funds and benefits at the household level depend on the governance arrangements and benefit distribution mechanisms. Levies could also be implemented to cover the cost of the activities by the KAZA Secretariat. Levies could also be used to contribute to the funding of KAZA-driven activities.		
TARGETED LEVEL:		
KAZA Institutional (& Partners)	X	Institutional Strengthening & Coordination
Community	X	Direct Income that can be used to create social benefits
Household	X	Direct Income (depends on benefit distribution mechanism), Access to amenities
MECHANISM: COMMERCIAL FUNDING		
Commercial funding (debt and equity finance) is typically provided by public development banks (e.g., African Development Bank) or private financial institutions (e.g., local banks) For the latter, mechanisms such as **preferential loans** can be provided. This includes small loans provided to communities or households. To offer loans at an interest rate significantly below the current market rate and make it an affordable option for rural communities and households, the loan can be blended with concessional funding (outlined below). This can de-risk projects for investors, subsequently incentivising investments into livelihoods. A loan scheme would have to be developed with local or national financial institutions as intermediaries. At a national level, **fees** for specific tourism activities can be implemented which generate income to cover operational costs and invest into social projects.		
TARGETED LEVEL:		
KAZA Institutional (& Partners)		
Community	X	Access to finance
Household	X	Access to finance

MECHANISM: CONCESSIONAL FUNDING		
Donors can provide grant funding (concessional and non-recoverable) through funding from public (e.g., EU programmes) and private institutions (e.g., NGOs, philanthropies). Large global sources of this type of financing include the Green Climate Fund and Global Environment Facility. Development funding mostly does not directly fund community-based organisations or individuals and households, although these may be the ultimate beneficiaries. The CORB fund may be one vehicle to access funding and encourage greater coordination between OKACOM and KAZA.		
TARGETED LEVEL:		
KAZA Institutional (& Partners)	X	Institutional Strengthening
Community	X	Institutional Strengthening
Household	X	Education & Skills Development, Access to Inputs

MECHANISM: INNOVATIVE FUNDING		
Payment for Ecosystem (PES) schemes are direct or indirect payments based on a "beneficiary pays principle". The user of an ecosystem service pays the provider for the maintenance and preservation of these services (UNDP 2016). Establishing a PES scheme must involve the establishment of a governance framework and benefit distribution mechanisms to ensure the service providers, who invest in the maintenance of the service, receive the funding. PES schemes are a market-based approach and require the establishment of institutional capacity, inter-institutional linkages, and transparent organisation structures. The establishment of an enabling environment for PES schemes is thus often associated with considerable costs, that must be covered with grant funding. **Conservation Performance Payments** can be placed within the larger group of PES. The distinguishing feature is that incentives are tied to indicators of environmental outcomes. An example of this is Wildlife Credits.		
TARGETED LEVEL:		
KAZA Institutional (& Partners)		
Community	X	Direct Income that can be used to create social benefits
Household	X	Direct Income (depends on benefit distribution mechanism)

Basic Income Grants are envisioned as unconditional payments for households in communities living in critically sensitive conservation areas, aiming to reduce their dependence on natural resources and their associated impact on the local environment. Conservation Basic income (CBI) can also be considered as a compensation for the impact of conservation interventions on local communities' traditional livelihoods.		
TARGETED LEVEL:		
KAZA Institutional (& Partners)		
Community		
Household	X	Direct Income

Compensation Offsets are compliance-based instruments to compensate for activities that will have an impact on the environment. The aim is to ensure a "net positive impact" (NPI) or "no net loss" (Meyers et al. 2020). Examples include biodiversity credits or carbon credits. Accessing compensation offsets often requires institutions with sufficient capacity to adhere to the strict requirements of these offset markets, for example consistent monitoring, which often requires an intermediary to design and implement the activities. The development of offset projects and initial interventions before compensation offsets are created often involves considerable costs and grant funding to provide seed capital. Similar to PES schemes, the benefits at a community or household level.		
TARGETED LEVEL:		
KAZA Institutional (& Partners)		
Community	X	Direct Income that can be used to create social benefits
Household	X	Direct Income (depends on benefit distribution mechanism)

MECHANISM: INNOVATIVE FUNDING (CONTINUED)		
Micro-lending involves issuing small loans to small business owners or entrepreneurs that may not have access to financial services and products offered by financial institutions. Micro-lending often works through non-traditional channels, although some financial institutions have started implementing micro-finance schemes. These non-traditional channels also involve loans by individuals or a group of individuals, which is often called peer-to-peer lending. In some African countries community-based lending is practiced.		
TARGETED LEVEL:		
KAZA Institutional (& Partners)		
Community		
Household	X	Access to finance
Micro-Insurance includes products that are targeted at households with a low-income and limited savings. The insurance schemes can be targeted at illness, injury, or death and/or crop or livestock insurance. Many rural households do not have the resources to afford insurance. Micro-insurance can be blended with grant funding to support a portion of the insurance premium that must be paid. As income levels and livelihood productivity improve, the grant funding support can slowly be phased out.		
TARGETED LEVEL:		
KAZA Institutional (& Partners)		
Community		
Household	X	Access to insurance, enhanced resilience to climate and other risks

To effectively diversify and enhance the resilience of livelihoods and implement key objectives and activities of the strategy, it will be vital to upscale private finance. This involves using public and other grant funding in a strategic way to provide seed capital and de-risk investments to catalyse more private sector involvement for more predictable and sustainable funding in the long-term.

7. TRANSFORMATIONAL PROJECTS

Several of the financial mechanisms outlined above could be transformational at a community and household level because they develop new markets and livelihood opportunities in the long-term. These include:

Developing Commodity-Based Trade for Meat in KAZA *Household Benefits: Access to markets and income. Community-Benefits: Enhanced food security.*	In the KAZA TFCA, livestock productivity and marketability has been constrained by lack of access to markets, a lack of processing capacity within the region and the prevalence of Foot and Mouth Disease (FMD). Commodity-based trade (CBT) for beef is a production and marketing approach which focuses on the process in which meat is produced and the measures taken to ensure that the risk of spreading disease is minimal to negligible, rather than focusing on the animal health status of the country or zone of origin. The promotion and development of CBT provides an opportunity for improved utilisation of this resource by opening access to regional markets to areas that currently cannot sell beyond national and often subnational borders. A similar approach is implemented by Conservation International – funded by the Green Climate Fund – in Botswana through the project "Ecosystem-Based Adaptation and Mitigation in Botswana's Communal Rangelands (FP158)".
KAZA Wide Fresh Produce Market with Production and Demand Hubs *Household Benefits: Access to markets and income. Community-Benefits: Enhanced food security. Climate change mitigation by reducing transportation.*	This initiative would aim to promote import substitution through the production of fresh produce within the KAZA region to supply key tourism hubs in the TFCA and benefit local farmers. Most of the primary food products consumed by the tourism sector in KAZA are either imported from abroad or from production sources more than 100km away from the consumption location. The large majority of tourism operators would be interested to source from local producers but have been challenged by unreliable product quality, inconsistent supply and a lack of variety (CRIDF 2017). The creation of production clusters in close vicinity to major tourism hubs in the KAZA TFCA, connected by a KAZA-wide produce market, has been identified as a key opportunity to enhance subsistence farmers' livelihoods in the TFCA (CRIDF 2017). To minimise supply constraints and risks, a structure based on cooperatives and intermediaries can be developed to buffer supply shortages by collecting from a wide range of suppliers. The clusters can be established away from areas with high wildlife density moving people away from these areas to be closer to the market.
Expanding Carbon Credits Across the KAZA TFCA *Community-Benefits: Access to income. Household benefits depend on efficient benefit sharing mechanism.*	Across the KAZA TFCA, forests are cut to develop other livelihoods such as agriculture, because it is economically more attractive for local populations. Carbon credits are based on the idea that conserving forests is a service provided by local and national communities to other countries around the world by storing carbon and reducing climate change. A sophisticated voluntary market for private and public entities now exists to trade carbon credits, ensuring continued carbon capture compensating for current greenhouse gas (GHG) emissions. With the Paris Agreement Article 6 "rulebook" finalised in Glasgow at COP26, there is a signal that this will guide the practices of private sector or voluntary carbon market activities. This will pave the way for global carbon trading, further enhancing opportunities for carbon credits to finance forest and soil conservation in the KAZA TFCA.

Upscaling the Development of Local Payment for Ecosystem Services *Community-Benefits: Access to income. Household benefits depend on efficient benefit sharing mechanism.*	In Payments for Ecosystem Services (PES) the providers or stewards of ecosystem services either stop damaging practices or begin engaging in active conservation practices, which ensure the sustainable supply of the ecosystem service to the payer. These services can be very localised – for example ensuring the sustainable flow of clean water to downstream users of a river – or global – for example protecting threatened species to maintain their intrinsic value to the global community. The payment level can be determined administratively through direct negotiation or negotiation through an intermediary and payments can be in cash or in kind.

More detail on every initiative is provided in Annex 9.3. Community organisations and households often lack the business and management skills to actively participate in markets, and thus these initiatives require a longer timeframe, education, and skills development, and potentially changes in policy and legislation to be successful. Intermediary organisations who can link entrepreneurs or cooperatives to reliable markets are an important part of the value chain. Once implemented they have considerable potential for long-lasting and transformational change. Many of these interventions could benefit from partnerships between communities and the private sector and/or government, who contribute to creating an enabling environment for livelihoods and community businesses.

8. MONITORING & EVALUATION

The implementation of this Strategy will be supported by various institutions from the public sector, private sector and civil society as outlined in Section 4.6.

Monitoring and Evaluation is required to track ongoing processes under the Strategy and evaluate the performance and progress. Monitoring and evaluation should be a continuous process to ensure adaptive management, inform related strategies and feed into decision- and policy making processes. There are existing monitoring processes undertaken under contract by Peace Parks Foundation for the KAZA TFCA through the KAZA Impact Monitoring working group. To maximise this tool, it is important to ensure the regular and timely submission of data by Partner States to inform and facilitate adaptive management processes.

The KAZA Secretariat will report on the progress in the implementation of the Strategy during Community Working Group Meeting on an annual basis and encourage representatives to

share information on the progress with communities and household in community forums to enhance transparency and accountability. Feedback from the lowest level will be continuously collected and considered in the implementation of the Strategy.

Communication and mutually beneficial collaboration between the Community Working Group, the KAZA Impact Monitoring Working Group, and particularly its sub-group for participatory socio-economic monitoring, is encouraged. This collaboration will promote learning and adaptive management, avoid duplication and promote standardisation in M&E.

Standardised KAZA Livelihood Monitoring

Standardised KAZA livelihood monitoring toolkits and frameworks, adopted by the KAZA Impact Monitoring Working Group, are currently being tested and refined in collaboration with community-based organisations in several KAZA areas. This toolkit and associated training materials support communities and facilitators in collecting livelihoods data using standardised templates. Monitoring data can be saved and uploaded to a central site using Kobo Toolbox templates. This enables comparison within and across sites over time, reduces unnecessary duplication and research fatigue, and promotes evidence-based decision making and policy formulation. The tools, handbook and learning materials, endorsed by the KAZA Secretariat, can be downloaded from https://carma-afrika.com/resources-learning-materials/.

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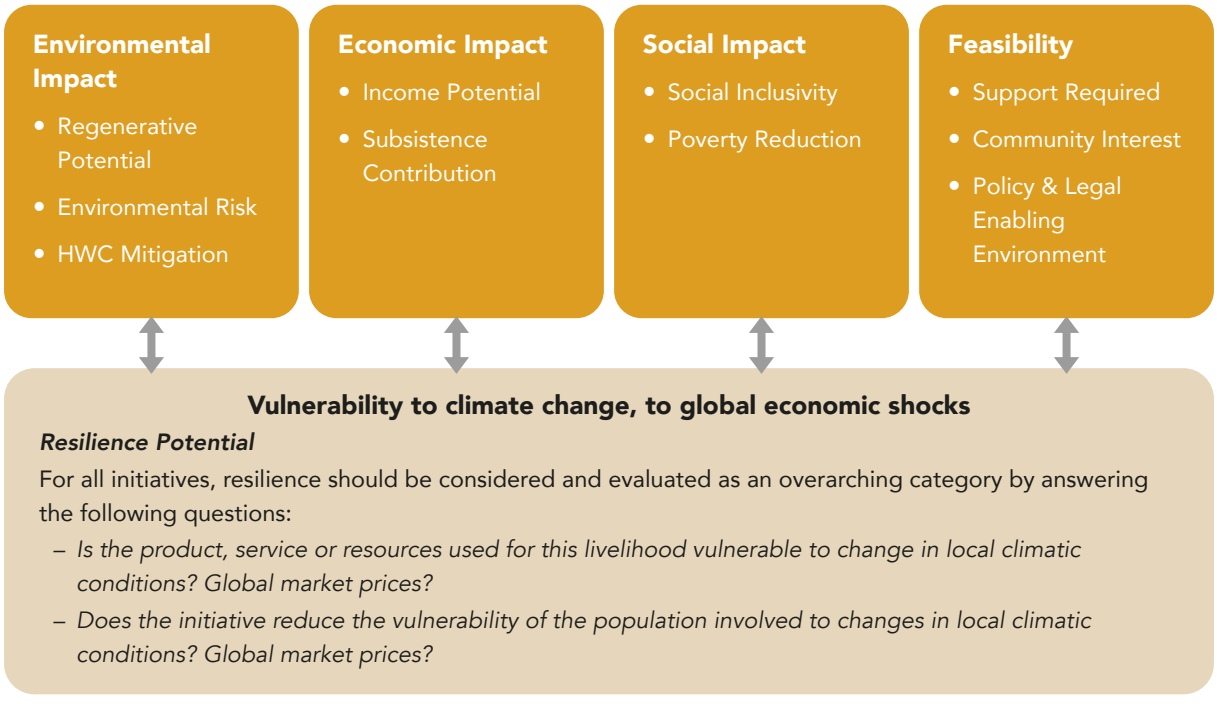
10. ANNEX

Pre-Implementation Assessment for Potential Livelihoods Projects

It is important that prior to the initiation and development of each and every proposed project that they be assessed for viability and sustainability (both environmentally and economically). During the design phase of livelihoods support projects in the KAZA TFCA, the different options and initiatives for development should be evaluated against common criteria, using a simple methodology that can be applied together with communities for a participatory assessment. Before conducting a pre-implementation assessment, it is useful to get a good understanding of the bio-physical and socio-economic context of the area, key assets and the main challenges and risks. The DFID Sustainable livelihoods approach is a suitable framework. A multi criteria evaluation is key for communities and donors to understand the trade-offs between the different pillars of sustainability and resilience – the environmental, economic, and social impacts – for each initiative. This paves to road to informed decisions for investment with sustainable and viable outcomes. The windmill methodology can be used to assess and visualise these trade-offs and make decisions based on pre-established priorities for the area of implementation.

Windmill Multi-Level Assessment Methodology

A livelihoods support initiative should be evaluated against four main categories: Environmental impact, economic impact, social impact, and feasibility. Livelihoods support initiatives can then be assessed over a set of indicators for each category, which are in line with this Strategy's objectives.



The objectives of the livelihoods support initiative can clearly prioritise some categories over others, although always considering all pillars for the assessment. For instance, business development support can primarily focus on the economic impact and feasibility, while HWC reduction support might prioritise the environmental and social impact components.

The scoring of each indicator between 1 and 5, using the guidance and steps below should result in a windmill representation for each initiative proposed (Figure A-1), providing a clear overview.

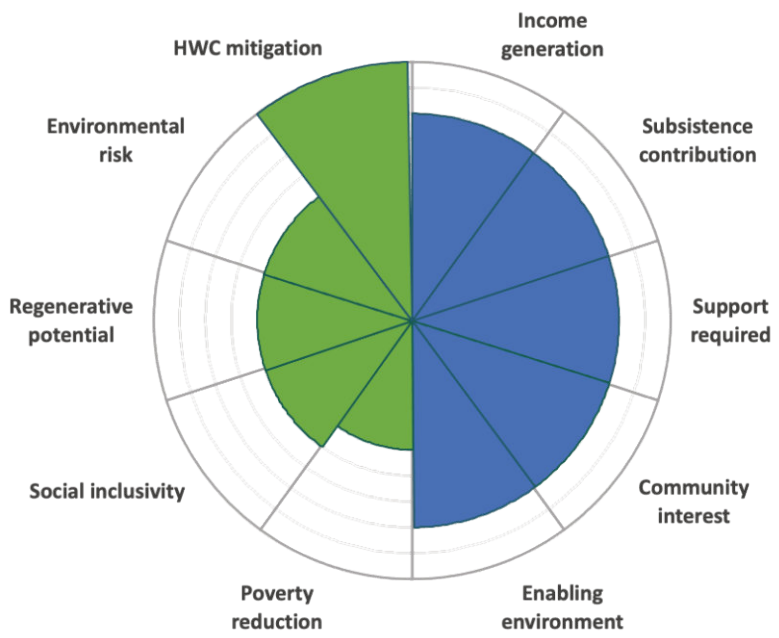


Figure A-1.
Example of a windmill assessment result

1 HOW TO: **CONDUCT THE ECONOMIC ASSESSMENT**

The economic impact category focuses on the potential to increase income of individuals, households, but also at regional and national level through value addition. For communities located in remote areas with little access to market, the economic impact can be evaluated through the contribution of the initiative to increasing access to subsistence goods and services.

Key Questions to be Answered

When conducting the economic assessment, we want to understand:

- Does the initiative have a realistic economic potential (available supply and demand)?
- By how much could individual or household income increase as result of the initiative?

- How many people could benefit from this increase?
- What are the main drivers of revenues and costs of the activity?

Methods

To assess how much income an initiative could generate for the population involved, the economic viability and business case for the activity proposed must be built. This requires understanding how much of a product or service can be supplied, how much can be sold at what price and at what production costs?

The following steps provide an initial guidance into answering these questions:

1) Evaluating demand potential: how many people will buy the product/service?
   - Where are the potential customers located and how many are they per month?
     - Number of tourists/visitors in one national park/lodge
     - Number of inhabitants of one town, one village, one city, and current consumption levels (e.g., number of poles used every year by one household)
   - Can the producer access these market locations?
     - What are the transport costs, can customers easily access the area?

2) Identifying supply constraints: How much could be produced in the specific area and at what cost?
   - Resource availability
     - How much land, water, wood, plants, grazing capacity is required to produce 1 unit, 100 units, 1million unit?
     - How much of that resource can sustainably be used without depleting the resource?
   - Price and production cost
     - What is the minimum price for which the cost of production can be covered? (including transport costs, equipment, other inputs)
   - Productivity
     - How much can one producer/service provider can supply every day? Every month?

3) Assessing initial capital costs: how much money must be put forward before revenues can be generated?
   - Start-up cost: equipment, training, marketing, and communication…
     - How much would these costs and who can provide the start-up financial support?

  - Is there access to appropriate financial services to cover the initial costs? What are the financial services costs and are they viable within the business case?

4) Assessing net income impact

- Per unit of production: price – cost per unit = profit per unit
- Per individual producer: profit per unit * productivity (quantity that one producer can make every month based on Step 2)
- For the total projected demand: profit per unit * total quantity sold to meet the demand (number of customers from step 1)
  - How many producers do we need to meet this demand: total demand/ productivity (provides an estimate of potential beneficiaries)?
- How does the net income per produce compare to current income levels in the area?
- How much does the net income for the total demand represent as a share of national or regional GDP?

In the case of non-market benefits, the contribution of the activity to subsistence can be analysed looking into current nutrition levels and sources of nutrition, medicine, and construction materials.

Key Sub-Indicators and Data Needs

Indicator	Sub-Indicator	Data to Collect
Income Potential	Cost of production	Transport cost, equipment needed and cost of purchase and maintenance, any other inputs
	Demand potential	Number of visitors, current consumption of specific goods per region, per household Population per region, per village
	Resource availability	Amount of wood, land, water, grazing, NTFPs, that can sustainably be harvested/used every year from the focus area
	Productivity	Average time/effort to produce one unit of a product, average yields.
Subsistence Contribution	Contribution to nutrition	Current nutrition level, nutritional value of product of focus
	Contribution to health	Current uses of medicinal plants and potential for increased use and access, current access to medical services

2 HOW TO: **CONDUCT THE SOCIAL ASSESSMENT**

The social impact category focuses on the potential to improve and diversify livelihoods for the residents of the KAZA landscape.

Key Questions to be Answered

When conducting a social assessment, we want to understand:

- Who is benefitting from the livelihoods support initiative?
- Could the new livelihoods developed disrupt or improve local social structures and cohesion?

Methods

To assess the social impact of an initiative, the expected population to be involved in the initiative must be analysed. This should help better understand who is involved and who will benefit from the livelihood being developed?

1) To assess social inclusivity, the expected share of each following group in the affected population should be analysed:
   - % of women vs men
   - % by ethnicity
   - % by age
   - % by location

Moreover, current uses of resources and land should be considered to ensure that the initiative will not negatively affect current users or create competition for resources that did not exist before.

2) To assess the poverty reduction potential, the following elements should be analysed:
   - % of people involved in the initiative currently under poverty line
   - Net income per household (calculated under economic assessment)
   - Subsistence contribution (assessed under economic assessment)

Key Sub-Indicators and Data Needs

Indicator	Sub-Indicator	Data to Collect
Social Inclusivity	Gender distribution	Disaggregated population data for similar activities
	Location of target population	Project information based on available resource and marketplaces
	Age distribution	Disaggregated population data for similar activities
	Ethnicity distribution	Disaggregated population data for similar activities, and location information
Poverty Reduction	Share of population involved currently under poverty line	Poverty data from target areas
	Net income potential per HH	Net income per HH calculated under economic assessment
	Contribution to nutrition	Current nutrition level, nutritional value of product of focus
	Contribution to health	Current uses of medicinal plants and potential for increased use and access, current access to medical services

3 HOW TO: **CONDUCT THE ENVIRONMENTAL ASSESSMENT**

The environmental impact category focuses on the potential to positively contribute to KAZA's conservation objectives as well as the potential risks associated with the development of the initiative.

Key Questions to be Answered

When conducting an environmental assessment, we want to understand:

- How does the initiative impact the environment, local biodiversity, and natural resources?
- Does it contribute to reducing Human-Wildlife conflict in KAZA?

Methods

To assess the environmental impact of an initiative and its alignment with KAZA's conservation goals, a set of key indicators reflecting current resources use and availability, as well as risk of degradation associated with the initiative should be assessed.

1) The regenerative potential of the initiative should be assessed, considering the specific ecosystem, as well as species, that the initiative could have a (positive) impact on. This includes looking into the potential impact of the initiative on:
   - Threatened species present in the area of focus
   - The overall health level of the local or regional ecosystem of focus
   - The current trends that could be reversed (degradation trends), or enhanced (conservation trends)

2) In line with one of key priorities of the KAZA TFCA, the contribution of the initiative to mitigating Human-Wildlife Conflict should be assessed, by answering the following questions:
   - Is the initiative driving population out of wildlife corridors and wildlife dense areas?
   - Is the initiative increasing beneficiation from wildlife-based activities for local communities increasing their tolerance to HWC?
   - Is the initiative putting in place protection measures to reduce HWC?

3) Environmental performance also depends on the level of potential degradation that an activity can have on air quality, water quantity and quality, vegetation cover, and biodiversity. Therefore, environmental risks must be assessed by answering the following questions:
   - Does the initiative involve harvesting or processing practices that can be harmful to the environment?
   - Does the initiative entail an increase in pollution level from solid waste or air pollutants?
   - Does the activity occur in highly sensitive area already suffering from pressures?

Key Sub-Indicators and Data Needs

Indicator	Sub-Indicator	Data to Collect
Regenerative Potential	Biodiversity richness	Baseline biodiversity and trends
	Wildlife population	Baseline wildlife population and trends, poaching rates
	Forest cover and diversity	Baseline forest inventory and trends, deforestation rate
	Supporting ecosystem services (pollination, climate regulation, carbon sequestration)	Baseline ecosystem services status and trends
HWC	HWC events per year	HWC events in KAZA and reduction resulting from similar initiatives
	Wildlife population	Baseline wildlife population and trends, poaching rates
Environmental Risk	Resources availability including water and land	Water stress levels, grazing capacity, soil quality, wood and NTFPs inventories

4 HOW TO: **CONDUCT THE FEASIBILITY ASSESSMENT**

The feasibility of a livelihood development effort can be assessed using indicators of the economic, social and environmental assessments, but specifically looks into potential constraints in capacity, legal and policy frameworks, and the need of local support to implement the initiative.

Key Questions to be Answered

When conducting a feasibility assessment, we want to understand:

- Are there any major financial, capacity, political, legal constraints that challenges the potential of the initiative to succeed?
- What can be done to reduce these constraints and at what cost?

Methods

In order to assess the feasibility of an initiative, four key elements should be assessed that reflect interest, capacity, entry costs and enabling environment.

1) Assessing and considering the initial interest and support of the targeted communities and people is key to evaluate feasibility. This must be evaluated through consultations and participatory decision-making.

2) The baseline capacity of targeted communities and people will also indicate how much training and support will be needed before an initiative can be self-running. Considering the timeline of support needed will also be key to understanding feasibility and costs. This must be evaluated by assessing local baseline capacity in key skills required to implement the activity proposed.

3) The initial investment required to start a business or initiative can sometimes be prohibitive for both private investors and public donors. This can be done by estimating necessary upfront costs, investment recovery timeline, as well as evaluating the level of access to appropriate financial services to potential investors.

4) Within KAZA complex legal structure varying between countries, assessing how the legal and policy framework currently supports or discourage the initiative proposed is key to understanding feasibility. This can be done through a quick review of key legislations and policies regulating the sector of interest.

Key Sub-Indicators and Data Needs

Indicator	Sub-Indicator	Data to Collect
Support Required	Skills, capacity building required	Baseline capacity assessments, similar initiatives training experiences
	Upfront capital costs	Upfront costs estimated for economic assessment
	Estimated numbers of years of support before activity is self-running	Similar initiatives experiences and capacity assessment
Community Interest and Support	% of targeted population in support of the initiative / numbers of champions identified	Community consultations
Enabling Environment	Overview of legislations and policies supporting	National and regional regulations and policies

5 HOW TO: **RANK AND SCORE** (SEE APPENDIX FOR FURTHER DETAILS)

After quantitatively or qualitatively assessing each indicator, a scoring system must be defined, in line with local context. Each indicator must be divided in quantitative or qualitative thresholds which then must be associated with a score. The score range must be aligned across all assessments. Examples of ranking and scoring are provided in the Appendix.

Step by Step Assessment Guide

To conduct the windmill multi-level assessment, the following steps can be followed:

1. Establish explicitly the priorities of the initiative and the options available
   Which categories of impact is the project prioritising on?

2. Identify context specific indicators
   Based on the target location, population, and resources, as well as envisaged scale of the initiative, sub-indicators can be adapted with ranks and levels adapted to the context.

3. Collect information and data on indicators
   To score the initiative, qualitative and quantitative information must be collected for each indicator, to a level feasible, where information is missing reasonable assumption can be made based on consultations and similar past experiences.

4. Score the different alternatives for each indicator
   Scoring of different alternatives to a project can be undertaken with expert consultations, based on available data and in participatory manner with the communities involved in the project.

5. Map the results and discuss with stakeholders
   The results can be mapped on a windmill to clearly identify the trade-offs of each alternative and then can be discussed in light of the priorities set during the first step.

Example of net income potential ranking

Scores	Net income per month per HH	Subsistence contribution
1	Less than US$50	No contribution
2	US$ 50-100	Low
3	US$ 100-150	Medium
4	US$ 150-300	Medium-High
5	More than US$ 300	High

Example of scoring and ranking for poverty reduction

Scores	Number of poor households benefitting
1	None
2	1-50
3	50-200
4	200-500
5	More than 500

Example of scoring and ranking for regenerative potential of forest ecosystems

Scores	Regenerative potential
1	Strong Negative impact on forest health
2	Potentially negative impact on forest health
3	No particular impact on forest health
4	Potential positive impact on forest health
5	Strong positive impact on forest health

Example of scoring and ranking for support required

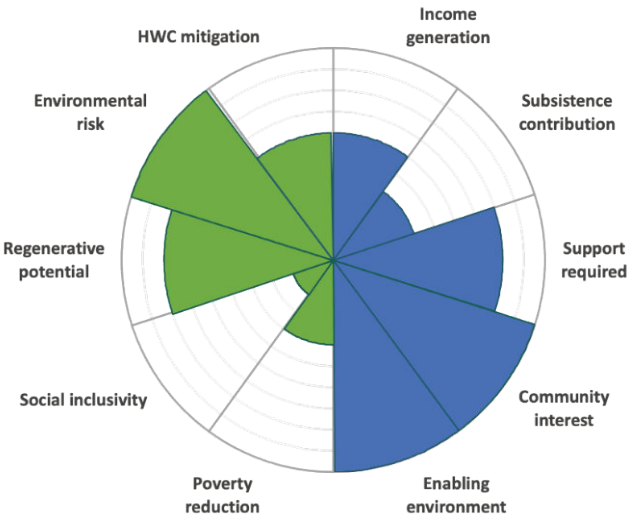
Scores	Support required
1	More than 10 years, intensive training needed, high upfront costs
2	7-10 years, intensive training needed, medium upfront costs
3	5-7 years, some training needed, medium upfront costs
4	3-5 years, some training needed, medium to low upfront costs
5	1-3 years, little training needed, low upfront costs

An Example of Assessment for Honey Production in Community Forests in the Kwando WDA – Namibian Component[1]

Step 1 identifies the priority, which is to increase income opportunities in community forests in the Kwando area while contributing to forest conservation. Steps 2 to 5 are outlined in the table below.

		Score
Net Income Potential	N$1,240 per beehive => potential N$500,000+ per year for all CFs Small income but high in demand (several 1,000s sold in city centre every year)	3
Subsistence Contribution	Can contribute to local nutrition although not essential	2
Support Required	Low capital : beehives + equipment N$20,000 for each CF Medium training needs Timeline : 3-5 years	4
Community Interest	High – all community committees interested in producing	5
Enabling Environment	Good legal and policy framework under community forest structure in Namibia, political support for honey production	5

		Score
Regenerative Potential	Expected positive pollination supports forest ecosystem health	4
Environmental Risk	Low: almost no impact on air, water and biodiversity	5
HWC Mitigation	Medium: Beehives can be used as elephant deterrent	3
Social Inclusivity	Low: often male in charge of beehives and limited involvement of youth	1
Poverty Reduction	Low: benefits a small amount of people with only limited additional net income per household	2



Developing a honey production business has good feasibility with little support required high community interest and supportive enabling environment. However, it does not have strong subsistence benefits and only medium income generation potential. It does not present any environmental risk and has good regenerative potential, has a small contribution towards HWC mitigation but fares low on poverty reduction and social inclusivity.

[1] *The windmill methodology was initially developed for the report "Development opportunities associated with the Sustainable Use of Forest Resources in the emerging State Forest and Community Forests in Zambezi Region. A multi-level assessment". World Bank 2020. Prepared by the Namibia Nature Foundation.*

Detailed Risk Table per Country and WDA

WDA	Socio-Economic Risks / Challenges	Resource Trends	Governance	Natural Shocks / Climate Change	Seasonality
Kwando River					
	Threats to the sustainability of traditional resource use systems in areas with access to commercial markets. Oil exploration and production could pose a threat to the Angolan component of the WDA.	Wildlife was diminished during the long Angolan Civil War. Poaching, bushmeat hunting, and land mines remain threats to its recovery. Agricultural expansion and population growth cause habitat loss or overuse. Logging for firewood, charcoal, wood production, uncontrolled bush burning, and illegal hunting are practices that jeopardise efforts aimed at protecting biodiversity	Far from decision making centres.	Crop production is susceptible to climate variability with a need to promote climate smart agriculture.	Seasonal rainfall impacts upon flood inundation and river levels with consequent impacts upon fisheries
	Limited infrastructure and transport limits access to markets and potential sales. Periodic outbreaks of FMD cause disruptions in the local markets and movement. Land constraints. Conflicts with individual land use and resource access. Human population growth, with resulting loss of regional connectivity and fragmentation. Subsistence fishers are women and have very little formal education. Conflict between natural resource collectors and tourism establishments. The large numbers of cattle within the area provide an asset to the local communities which they are currently unable to utilise effectively through a lack of suitable slaughter facilities.	Poaching of elephants across northern Botswana, and bushmeat poaching impacting large carnivore populations.	Centralisation undermined traditional authorities & management systems. Limited benefits from CBNRM created displeasure of community members and calls for hunting to return. Limited conservation incentives. Established elephant corridors and land allocations to mitigate conflict. More focus on conservation than sustainable use. Poor fisheries legislation has deprived riparian communities' access to fish resources.	Considerable climate vulnerability. Fisheries depend on highly variable annual flood waters. High frequency of fires.	High levels of HWC – Seasonal Migration. Long-travel distances in dry season to collect NTFPs Kalahari sand soils with poor water and nutritional retention and the short annual wet season limit agricultural production and is made more unpredictable by climate change.

WDA	Socio-Economic Risks / Challenges	Resource Trends	Governance	Natural Shocks / Climate Change	Seasonality
Kwando River (continued)					
	Cattle ownership is strongly skewed: a minority of cattle owners possess most of the cattle. Limited infrastructure and transport limits access to markets and potential sales (e.g. of poles). Sales of various products considerably declined due to the COVID 19 pandemic	State Forest: Poaching, considerable encroachment of people & commercial agricultural production. High risk of overgrazing due to increasing cattle numbers considerably above carrying capacity and closure of Katima Mulilo abattoir after a FMD outbreak. Firewood was being depleted around villages. Vegetation cover loss included clearing of land for subsistence farming, infrastructure development (e.g., roads), settlements, and wood extraction (e.g., for firewood and housing construction). The Kwando River is a river system highly vulnerable to anthropogenic impacts and particularly the risk of excessive fisheries exploitation. Fishing at night and the use of illegal and inappropriate fishing methods were causing the decline in fish numbers.	De facto open access of State Forest. Increasing registration of customary land rights in wildlife corridors. A lack of benefits reaching conservancy members leads to negative attitudes towards conservancies and wildlife corridors.	Poverty rates are high 4th poorest in the country. Residents of the WDA are therefore highly vulnerable to external shocks, including normal floods and droughts as well as climate change and biodiversity loss. Rainfall variability affects livelihoods of farmers by causing crop failure and poor grazing in some years, and floods in others. Farmers report later onset of rain. A major challenge to horticultural production is access to water: If obtained from a borehole, it might not deliver sufficient water, and farms in flood areas experience annual damage.	A major constraint with irrigation in the region is the availability of suitable fertile land which is not flooded annually.
	Covid 19 reduced tourism activities and cross-border trading. Human-wildlife conflict.	Sioma Ngwezi National Park has been heavily poached, but wildlife is recovering. Declining fish stocks led to fish farming as alternative source of fish. Inappropriate fishing methods disturb the production levels of the fish. Poaching. Severe, unregulated timber logging. Inadequate resources to support livelihoods.	Governmental responsibilities devolved responsibilities to district and local levels. The multiplicity of the various governance structures and especially with the traditional linkage, sometimes makes the decision-making processes somewhat complex.	Climate change is impacting livestock survival and crop / food production.	

WDA	Socio-Economic Risks / Challenges	Resource Trends	Governance	Natural Shocks / Climate Change	Seasonality
Zambezi Chobe Floodplain					
	High levels of human-wildlife conflict. Covid 19 reduced tourism activities and cross-border trading. Remote location and limited infrastructure limits access to markets and potential sales. Limited land availability for agroecology development. Existing high-density tourism, in addition to already planned growth, results in a diminishing tourism product and congestion in prime areas. The cattle and small stock within the area provide an asset to the local communities which they are currently unable to utilise effectively through a lack of suitable slaughter facilities.	Tourism demand has returned following Covid-19 increasing the pressure on and impacts on high-demand areas along the Chobe riverfront. Availability of forest products as well as trees and shrubs has been heavily impacted by the presence of high densities of elephant.	Poor management of the Chobe National Park partly through a lack of resources. Poor management of local Forest Reserves which remain underutilised. Fishing remains banned on the Botswana side of the Chobe River but is permitted on the Namibian side. Concerns regarding poor management and benefit transfer to community members from Community Trusts.	Climate variability impacts upon crop success. High frequency of fires with a clear correlation with principal tarred roads as a source of ignition.	Seasonal flooding within the Chobe Enclave area impacts local communities. Tourism peaks during the winter months.
	Extensive floodplains limit land available for crop cultivation and are also unavailable to livestock when flooded.	Decline in vegetation cover linked to land clearance for agriculture or development. Fisheries have been fished unsustainably requiring active efforts to help recover stocks	The issuance of land rights is challenging with land often allocated inside wildlife corridors with little engagement between stakeholders. Conservancies have good communication links with each other.	Climate variability impacting upon flood extent and duration.	Seasonal rainfall and flooding of the Zambezi River and associated floodplains drives behaviour and availability of natural resources.
		Development of agriculture and expansion of charcoal production has led to deforestation. Unsustainable fishing has led to the decline of the Zambezi fish stocks. Illegal utilisation of timber and bushmeat.	Governmental responsibilities devolved responsibilities to district and local levels. The multiplicity of the various governance structures and especially with the traditional linkage, sometimes makes the decision-making processes somewhat complex.	Negative impacts on natural resource availability as a result of climate change	Seasonal rainfall and flooding of the Zambezi River and associated floodplains drives behaviour and availability of natural resources.

WDA	Socio-Economic Risks / Challenges	Resource Trends	Governance	Natural Shocks / Climate Change	Seasonality
Zambezi-Mosi-oa-Tunya					
	The availability of land to absorb the rapidly expanding urban infrastructure (education, health, housing, human and solid waste management, affordable energy and potable water etc.) presents a significant challenge. The presence of cross border traders and truckers in a city catering for international tourists also presents problems.	Declining fish stocks due to overfishing. Significant unregulated timber logging significantly reducing timber resources available for sustainable utilisation.	Multiple stakeholders involved in the management of the area surrounding the Victoria Falls, the natural resources and associated tourism activities. Traditional leadership retains a strong voice in decision-making.	Climate variability causes severe damage and disturbances to both human and livestock survival. Sometimes, droughts also affect food production.	Tourism levels peak during the winter months.
	Over-reliance on tourism industry leaves the local economy exposed when there are impacts on travel like Covid-19. Tourist travel is increasing after the lifting of Covid-19 restrictions but has yet to reach pre-covid levels.		Multiple stakeholders involved in the management of the area surrounding the Victoria Falls, the natural resources and associated tourism activities. Traditional leadership retains a strong voice in decision-making. Weak economy limits formal financial transactions with a focus instead on informal cash payments.	Climate variability impacts subsistence crop production.	Tourism levels peak during the winter months.
Hwange-Kazuma-Chobe					
	Livestock predominantly held for local consumption or social status limited avenue for commercial sales. High input demands limit potential for local community involvement in commercial agriculture ventures.	Availability of forest products as well as trees and shrubs has been heavily impacted by the presence of high densities of elephant. Commercial agriculture is based around fertile soils with further expansion linked to provision of water for irrigation.	Predominantly state land but one of the few areas in Botswana where land is privately owned. Community Trust leases commercial hunting concessions. Permits required to access NTFPs from the Forest Reserves.	Arable agriculture is highly susceptible to climate variability. High frequency of fires with a clear correlation with principal tarred roads as a source of ignition.	Arable agriculture is seasonal and linked to annual rainfall.
	Harvest levels are marginal and often amount to a relatively small source of annual food. Communities also exposed to the risks and hazards of residing with wildlife, and particularly elephants increasing the risk and vulnerability to heightened food insecurity. High levels of human wildlife conflict.	Elephants occupying this WDA are considered the major driver for human-wildlife conflict and biodiversity changes in this ecosystem.	Traditional leadership retains a strong voice in decision-making.	Agriculture is risky in an area where the climate is hot and dry, rainfall erratic and the growing season is very short.	Arable agriculture is seasonal and linked to annual rainfall.

WDA	Socio-Economic Risks / Challenges	Resource Trends	Governance	Natural Shocks / Climate Change	Seasonality
Hwange-Makgadikgadi-Nxai Pan					
	Very few formal employment opportunities within the WDA. Human wildlife conflict is high due to proximity to National Parks and WMAs.	Commercial hunting for elephant is prevalent across the WDA with a large elephant population across northern Botswana. Increased illegal poaching of elephant has been recorded within the area.	Limited land management with WMAs leased out to private tourism operators for the purposes of commercial hunting.		Seasonal movement of wildlife in response to rainfall and associated water availability. Sporadic availability of artificial water points.
	Tourism developments and leases are predominantly privately owned with little access available to local communities and their members. There is growth in the tourism industry surrounding Hwange National Park.	The development of the Gwayi-Shangani Dam in close proximity to the Hwange National Park threatens the sustainable utilisation of the area and its resources if not managed correctly.	Much of the area is managed by ZimParks with efforts underway to establish a community conservancy along the border of Hwange National Park.		High elephant numbers are maintained in an essentially waterless wilderness by artificially pumping water during the dry season. In the wet season the population spreads throughout the park and into Botswana, where it becomes contiguous with Africa's largest elephant herd.
Khaudum-Ngamiland					
	Remote location and limited infrastructure through much of the WDA limits development potential. High levels of poverty with focus on subsistence activities. Covid 19 reduced tourism activities and cross-border trading. The cattle and small stock within the area provide an asset to the local communities which they are currently unable to utilise effectively through a lack of suitable slaughter facilities.	Declining fish resources and increasing pressure. High levels of bushmeat poaching. High frequency of fires impacts vegetation composition increasing the composition of low dense scrublands from tall species rich woodlands. Increasing development along the eastern edge of the WDA could limit access to the wetland resources whilst also driving up unsustainable natural resource usage. The limited availability of water further west will constrain potential developments and activities.	The Poverty Relief Programme coordinated by the Office of the President is focused on this area due to high poverty levels. Planned establishment of elephant corridors to mitigate conflict and plan land allocations.	Climate variability impacts upon crop success and forage availability for livestock and wildlife. Variable rainfall has affected crop success.	Seasonal movement of wildlife in response to rainfall and associated water availability. Arable agriculture is rain-fed and reliant on consistent seasonal rainfall.

WDA	Socio-Economic Risks / Challenges	Resource Trends	Governance	Natural Shocks / Climate Change	Seasonality
Khaudum-Ngamiland (continued)					
	Increased settlement in the areas where palm leaves used for basket making are harvested has put the resource under pressure making it more difficult for weavers to access. Remote location makes it hard to develop opportunities with low tourism traffic and significant distance from markets. Potential for oil development nearby may have impacts on resource availability, particularly water.	Between 1990 and 2016 forest cover declined from 58% of the land to 54% with the most common land conversion from forest to cropland. Land cover changes observed along the Okavango River and the Trans-Caprivi highway, where most people are living. The most common land conversion was from forest to cropland. Viability of timber harvesting and other indigenous NTFPs for sale to be investigated. Illegal logging has reduced forest cover reducing the availability of NTFPs.	The allocation of land rights by local authorities does not always follow the prescribed processes resulting in allocations to elites and the dispossession of local San communities. Local conservancies work together for wildlife and habitat management at a landscape level.	Area is highly dependent on seasonal rainfall	Area is highly dependent on seasonal rainfall

Transformative Projects: Impact Potential of Cross-KAZA Initiatives

Developing Commodity-based Trade for Meat in KAZA

Concept

In the KAZA TFCA, livestock productivity and marketability has been constrained by lack of access to markets, a lack of processing capacity within the region and the prevalence of Foot and Mouth Disease (FMD). Commodity-based trade (CBT) for beef is a production and marketing approach which focuses on the process in which meat is produced and the measures taken to ensure that the risk of spreading disease is minimal to negligible, rather than focusing on the animal health status of the country or zone of origin. The promotion and development of CBT provides an opportunity for improved utilisation of this resource by opening access to regional markets to areas that currently cannot sell beyond national and often subnational borders.

Action

Develop a KAZA-wide approach to CBT supplying meat particularly to urban centres in KAZA as well as to tourism hotspots. This would require the establishment of common standards for meat products based on the process under which the meat is produced. Such standards could include specific husbandry and rangeland management practices in line with conservation practices.

Existing Initiatives

The COMESA has been supporting the development of a Green Pass for Eastern and Southern Africa which can support commodity-based trade by establishing harmonised sanitary and phytosanitary regime with a regional certification scheme. This Green Pass can apply to various food and agricultural products and can be issued by a National Green Pass

Authority that would certify, monitor, and keep a database of certified companies (Suleymenova & Syssoyeva-Masson, 2017). However, there is little evidence of its implementation and impacts at regional level at this stage (ibid.).

Green Climate Fund project *"Ecosystem-Based Adaptation and Mitigation in Botswana's Communal Rangelands"* under implementation looks to support national policy development including CBT reforms and leverage private sector support to build market-readiness capacity and facilitating access to markets.

The Potential Benefits

Implementing CBT in an integrated way that includes improved husbandry (herding and kraaling) and rangeland management practices would help mitigate conflict between wildlife and livestock and make cattle production more sustainable and environmentally friendly, thus lending itself to the marketing of 'wildlife friendly beef'. In 2020, export of fresh and chilled bovine meat between KAZA countries represented between 0% and 3% of KAZA countries' export, or 0.6% on average[1]. Targeting an average intra-KAZA trade of bovine meat at 5% of KAZA exports could generate US$870,000 per year for the region for 300 tons of fresh bovine meat traded between KAZA countries. Increasing intra-trade to 10% of current export or about 600 tons per year could generate US$1.8 million per year. A demand for beef products currently supplied by countries like Brazil, Argentina or the EU, for instance in Angola, and for the tourism sector across the KAZA TFCA, could be substituted with beef originating from KAZA. Increased demand for quality cuts of beef from Middle East and South-East Asia also presents market prospects for CBT beef exports from KAZA countries. An economic analysis of CBT enterprise values in Namibia estimated that developing CBT in the Zambezi region could generate between 15 million and 22 million (USD 2020) in net national income after 10 years of implementation (Barnes 2013).

Challenges and Barriers

The development of a KAZA-wide standards and verification system will require political support at national level as well as the development of appropriate institutional and infrastructure capacity. Political buy-in will be key to ensure the establishment of necessary standards. It is also essential to establish the market demand within the KAZA landscape and, if necessary, determine what steps are needed to grow and develop the market.

[1] *Calculations based on trade data from trademap.org for the year 2020, focusing on HS0201 – Meat of bovine animals, fresh or chilled, only.*

Kaza Wide Fresh Produce Market With Production And Demand Hubs

Concept

This initiative aims to promote import substitution through the production of fresh produce within the KAZA region to supply key tourism hubs in the TFCA and benefit local farmers. Most of the primary food products consumed by the tourism sector in KAZA are either imported from abroad or from production sources more than 100km away from the consumption location. The large majority of tourism operators would be interested to source from local producers but have been challenged by unreliable product quality, inconsistent supply and a lack of variety. The creation of production clusters in close vicinity to major tourism hubs in the KAZA TFCA, connected by a KAZA-wide produce market, has been identified as a key opportunity to enhance subsistence farmers' livelihoods in the TFCA (CRIDF 2017). To minimise supply constraints and risks, a structure based on cooperatives and intermediaries can be developed to buffer supply shortages by collecting from a wide range of suppliers. The clusters can be established away from areas with high wildlife density moving people away from these areas to be closer to the market.

Action

Support must target the creation of agricultural clusters for each tourism hub and investment in local agricultural enterprises. This will include training for local entrepreneurs and champion producers in business development. KAZA level agreements on trade in fresh produce must also be established to support intra-KAZA trade and supply to cross-border tourism hubs from each neighbouring country. Support must also be provided for the establishment of a branding and labelling certification process for all KAZA produce which may facilitate market incentives.

Existing Initiatives

The CRIDF project, which initially designed this approach, has identified six clusters and analysed six value chains suitable for developing local agricultural enterprises including poultry production, soft greens and herbs. A pilot project is under way to develop some of the proposed value chains in pre-identified clusters across the KAZA TFCA. In Namibia CBO support NGOs such as NNF, IRDNC and WWF are also working towards the development of local agricultural value chains. KAZA ARISE, project which is supporting communities in

Zambia, Zimbabwe and Namibia. This brings together stakeholders to promote agroecological approaches in crop and livestock production.

The Potential Benefits

The CRIDF project estimated that the demand in fresh produce of the tourism industry in the KAZA TFCA amounted to 44,000 tons per year, or US$64.2 million. Except for tourism operations around Livingstone, it is expected that on average more than 80% of this demand is met by products that are not locally farmed. Increasing the share of fresh produce supplied from local farming from 20% to 50% in KAZA could thus substitute about US$20million worth of produce from large industrial producers to local farmers in KAZA. The creation of agricultural enterprises will also have a multiplier effect through the creation of jobs along the supply chain including cooperatives and intermediaries, and transport and logistics businesses. Clusters will generally be located close to urban centres and could attract people away from high wildlife density areas, thus reducing HWC.

Challenges and Barriers

There needs to be a continuity of supply whilst maintaining strict quality standards to encourage suppliers and end users to move away from traditional supply chains. Growth at home policies within Botswana and Namibia are already in place for certain products to accelerate self-sufficiency through national production and to reduce the reliance on external trade. To expand trade within the KAZA landscape, significant political support will be needed to ensure that the regulatory framework allows for cross-border trade of fresh produce and a KAZA-wide market be developed. Moreover, local agricultural entrepreneurs will require appropriate financial services and business development support, including the establishment of strong linkages with intermediaries.

Piloting Conservation Basic Income in Selected Communities in KAZA

Concept

Following the developments of cash transfers programmes as development policies and pilots of Universal Basic Income (UBI), a new concept has emerged under the name of Conservation Basic Income (CBI) (Fletcher and Büscher 2020). CBI is envisioned as unconditional payments for households in communities living in critically sensitive conservation areas, aiming to reduce their dependence on natural resources and their

associated impact on the local environment. CBI can also be considered as a compensation for the impact of conservation interventions on local communities' traditional livelihoods.

Action

Establish pilot areas for conservation basic income to understand the outcomes of such transfers and how they compare to REDD+ payments and other payment for ecosystem services in the region.

Existing Initiatives

Although no explicit CBI scheme has ever been trialled, cash transfer programmes have been implemented across the world, with 130 countries implementing some cash transfer programs, about half of which are unconditional transfers (World Bank 2015). Most commonly transfers are provided to households or individuals. Universal basic income has also been trialled across the world, including in Namibia (BIG 2009) and Kenya.

The Potential Benefits

Expected benefits of conservation basic income in KAZA would be a general increase in livelihoods standards, reduced poverty, and as a result a reduced impact on the local environment. It can increase resilience and reduce dependence on natural resources while contributing towards a pre-defined conservation outcome. However, most of these benefits are theoretical and should be trialled through pilot projects. Only a small share of the 3 million inhabitants of the KAZA TFCA currently live within critical conservation areas and these are often poor communities. A grant of US$50 per month could dramatically change the living standards of these households and communities.

Challenges and Barriers

Numerous issues can be raised around CBI, especially since it has not been trialled before. It is still unclear how an increase in available income could affect resource use and the environment. Moreover, the scheme could influence human migration and increase the population in conservation areas. However, the design of CBI schemes could address these issues. If the impact is positive, finding sustainable financing could also be a major challenge: Around US$100 million per year would be required to reach 250,000 people within the KAZA TFCA with a monthly grant of US$50. This could be aligned with existing investments levels and tax capacity of each member country. Moreover, upcoming conservation-focused financial institutions such as the CORB Fund and national environmental investment funds could be suitable vehicles to attract the necessary funding for a CBI.

An important question for CBI schemes is whether people will use the income wisely? International and Namibian experience strongly indicates that people use cash in appropriate ways and few use it for alcohol, tobacco, etc. While not all the cash may be used for food, some might be used to help pay school fees, pay for health-related costs, or to purchase seed or fodder, which are all important for peoples' livelihoods. International organisations such as the World Food Programme and USAID are increasingly moving towards cash payments for emergency relief because cash is used wisely by beneficiaries (Jones 2020).

Expanding Carbon Credits Across the KAZA TFCA

Concept

Across the KAZA TFCA, forests are cut to develop other livelihoods such as agriculture, because it is economically more attractive for local populations. Carbon credits are based on the idea that conserving forests is a service provided by local and national communities to other countries around the world by storing carbon and reducing climate change. A sophisticated voluntary market for private and public entities now exists to trade carbon credits, ensuring continued carbon capture compensating for current greenhouse gas (GHG) emissions. With the Paris Agreement Article 6 "rulebook" finalised in Glasgow at COP26, there is a signal that this will guide the practices of private sector or voluntary carbon market activities. This will pave the way to access carbon credits to finance forest and soil conservation in the KAZA TFCA.

Action

Small-scale carbon credit projects should be developed in collaboration with the private sector and forest conservation actors including CBOs, small forest enterprises and local NGOs.

Existing Initiatives

The Lower Zambezi REDD+ Project (VCS ID 1202) is Zambia's first Verified Carbon Standard REDD+ project called Reducing Emissions through Deforestation and Degradation. BioCarbon Partners has developed this project by using the conservation activities in the park as a carbon sequestration service, now securing sequestration of 200,000 tons of CO^2 per year. The payments made by private companies to buy these carbon credits directly finance

local livelihood support initiatives and support access to education, improved sanitation, and infrastructure development for local communities.

Commonland African Improved Cookstove Programme (GS 10874) targeting Simalaha Community Conservancy, benefits local wildlife, forests and communities with an expected 74,000 Verified Emission Reduction (VERs) to be issued in 2022.

The Potential Benefits

A study focusing on REDD+ payments for Miombo woodland conservation estimated that carbon credits could generate more than US$100 million over 30 years in Namibia, Mozambique, and Zambia (Bond et al. 2020). The carbon potential within the KAZA landscape could also be amplified by the emerging accounting of soil carbon sequestration within carbon credit standards on the voluntary market. The region is also home to globally significant wetlands (e.g., Okavango Delta) and peatland resources (found in Angola) which could provide an opportunity to generate revenue through carbon credits.

Challenges and Barriers

The transaction costs of establishing carbon credit projects can be too high for small-scale initiatives with medium to low carbon values. Meeting verification standards requires robust inventories and monitoring of the carbon balance in the target landscape, which often requires costly expertise and capacity. Moreover, benefits from national carbon credit schemes do not always trickle down to local communities who bear the opportunity cost of forest conservation. Strong governance and a local benefit distribution structure must be in place to ensure that payments are made to the relevant target groups.

Upscaling the Development of Local Payment for Ecosystem Services

Concept

Payments for Ecosystem Services (PES) involve a *"voluntary transaction where a well-defined ecosystem service is being bought by a minimum of one service buyer from a minimum of one service provider, if and only if, the provider secures ecosystem service provision (conditionality)"* (Wunder 2005). The providers or stewards of ecosystem services either stop damaging practices or begin engaging in active conservation practices, which ensure the sustainable supply of the ecosystem service to the payer. These services can be very localised – for example ensuring the sustainable flow of clean water to downstream users of a river – or global – for example protecting threatened species to maintain their intrinsic value to the global community. The payment level can be determined administratively through direct negotiation or negotiation through an intermediary and payments can be in cash or in kind.

Action

Identify opportunities for local PES schemes between the private sector benefitting from conservation efforts and the communities involved in conservation and sustainable livelihoods.

Existing Initiatives

In Namibia, Wildlife Credits have been developed with the support of the WWF to generate funds from local, national, and international sources based on independently verified conservation performance by communal conservancies. Wildlife credits are set up as a joint venture between conservancies, tour operators, conservation groups and the international community, attracting funds for wildlife and habitat through conservation performance payments. The first Wildlife Credits have been issued in Namibia based on sightings of iconic wildlife species at tourist lodges. Similar programmes are being trialled within three villages in the Chobe region of Botswana.

The Potential Benefits

A study of payments for ecosystem services for the Cubango-Okavango River Basin estimated that ecosystem services from the river basin, including tourism and existence value of key species, of about US$ 5 billion per year (Turpie et al. 2021). Harnessing some of these values through local PES initiatives could benefit CBOs and households across the KAZA TFCA as well as conserve wildlife or protect defined wildlife corridors.

Challenges and Barriers

Markets for ecosystem services are difficult to build and only a few initiatives in Africa have successfully established sustainable funding for conservation. The set-up costs of PES schemes can be very high, as reliable monitoring systems and agreements must be put in place to enable payments. Another key challenge is the need for clear property rights over the land and resources that are managed by the entity receiving the payments.

Livelihoods Glossary

This glossary draws heavily on the DfID Sustainable Livelihoods Guidance Sheets, available from https://www.ennonline.net/dfidsustainableliving, and more recently published definitions of livelihoods terminology.

Adaptive capacity (also see resilience). The property of a system to adjust its characteristics or behaviour, in order to expand its coping range under existing social, technological, economic, environmental or political variability, or future climate conditions. Actions that lead to adaptation can serve to enhance a system's coping capacity and increase its coping range thereby reducing its vulnerability to climate hazards. The adaptive capacity inherent in a system represents the set of resources available for adaptation, as well as the ability or capacity of that system to use these resources effectively in the pursuit of adaptation

Asset Pentagon. The Asset Pentagon is an important component in the SL Framework. It is a visual representation of information about people's livelihood assets. It brings to life important inter-relationships between the various assets.

Asset Status. This refers to an individual's or group's access to livelihood assets. A change in Asset Status may involve an increase or decrease in access to livelihood assets or a change in the composition of the livelihood assets to which there is access.

Assets are the resources on which people draw in order to undertake their livelihood strategies. They include financial, human, natural, physical and social capital. Assets do not necessarily need to be owned by the men and women who use them but they do need to have access to the assets that they require for their livelihood strategies.

Capability refers to the freedom or ability of individual to achieve 'functionings' (i.e. what people are, or do), which range from being healthy or well nourished to being happy or having self-respect. As such, capabilities constitute people's freedom and opportunities to achieve well-being (Sen, 1981).

Capital = Assets. In the sustainable livelihoods framework it is best understood with reference to the following five categories: human capital, natural capital, financial capital, social capital, and physical capital. These are also known as livelihood assets. Outside the sustainable livelihoods framework the term Capital is used in a variety of ways. In economics it is commonly defined as being one of three factors of production, the other two being labour and land.

Core Principles of Livelihood Analysis. The Core Principles of Livelihoods Analysis are as follows: • Effort should be devoted to identifying and understanding the livelihood circumstances of marginalised and excluded groups. • Analysis should take into account important social divides that make a difference to people's livelihoods. For example, it is often appropriate to consider men, women, different age groups, etc. separately. It is not sufficient to take the household as the sole unit of analysis. • The SL approach seeks to build upon people's strengths and resourcefulness. When conducting analysis it is important to avoid thinking only about need. • The SL approach embraces the idea of dynamism. Avoid taking one-off snap shots and instead think about change over time, including concerns about sustainability. • There will never be a set recipe for which method to use under which circumstances. Flexibility is key. Equally, it is not necessary to produce one definitive 'map' of livelihoods. Different 'maps' may be appropriately used for different purposes. The Core Principles of Livelihood Analysis should not be confused with the core principles of the sustainable livelihoods approach which are much broader.

Core Principles of The Sustainable Livelihoods Approach. These are that poverty-focused development activity should be: • People-centred: sustainable poverty elimination will be achieved only if external support focuses on what matters to people, understands the differences between groups of people and works with them in a way that fits in with their current livelihood strategies, social environment and ability to adapt. • Responsive and participatory: poor people must be key actors in identifying and addressing livelihood priorities. Outsiders need processes that enable them to listen and respond to the poor. • Multi-level: poverty elimination is an enormous challenge that will only be overcome by working at multiple levels, ensuring that local-level activity informs the development of policy and an effective enabling environment, and that higher-level policies and institutions support people to build upon their own strengths. • Conducted in partnership: with both the public and the private sector. • Sustainable: there are four key dimensions to sustainability – economic, institutional, social and environmental sustainability. All are important – a balance must be found between them. • Dynamic: external support must recognise the dynamic nature of livelihood strategies, respond flexibly to changes in people's situation, and develop longer-term commitments. The Core Principles of the Sustainable Livelihoods Approach should not be confused with the core principles of livelihood analysis which relate more specifically to the activities involved in investigating livelihoods.

Cross-Sectoral Links. The connections between different sectors, such as agriculture, health, infrastructure, etc, particularly, the way in which livelihoods span these sectors.

Economic Sustainability. It is usually associated with the ability to maintain a given level of income and expenditure over time. It can be defined in relation to expenditure by individuals, households, projects, programmes, government departments, countries etc. Maintaining a given level of expenditure, necessarily requires that the income/revenue which supports that expenditure should also be sustainable over time. In the context of the livelihoods of the poor, economic sustainability is achieved if a minimum level of economic welfare can be achieved and sustained. Economic sustainability is one of a number of dimensions of sustainability that also include environmental sustainability, institutional sustainability and social sustainability.

Empowerment. Occurs where people take greater control over the decisions, assets and Policy, Institutions and Processes that affect their livelihoods.

Entitlement refers to the ways in which people gain access to assets, including, for example, access to social services such as education and health. The ability to command entitlements derives from, for example, legal rights, access to financial resources, or relationships with other groups and individuals. The concept of entitlement has been specifically used to examine how individuals and households are able to access resources during periods of change and poverty (Dreze and Sen, 1989; Sen, 1981).

Environmental Sustainability. Achieved when the productivity of life-supporting natural resources is conserved or enhanced for use by future generations. By productivity we mean its ability to produce a wide range of environmental services, such as the supply of food and water, flood protection, waste management etc. Environmental sustainability is one of a number of dimensions of sustainability that also include, institutional sustainability, economic sustainability and social sustainability.

External Environment. A very general term that refers to the environment outside a person's immediate influence. Within the SL framework trends, shocks, and seasonality are part of the External Environment. Many policies, institutions and processes (PIPs) may also be treated as part of the external environment, although people may have more influence over some of these than over trends, shocks and seasonality.

External Shocks. Shocks emanating from the external environment.

External Support. Support provided from outside, e.g. government support for a village community, or donor support for a government department etc.

Financial Capital. Financial Capital is a category of livelihood assets. Within the SL framework, it is defined as the financial resources that people use to achieve their livelihood objectives. These resources include: • Available stocks: Savings are the preferred type of financial capital because they do not have

liabilities attached and usually do not entail reliance on others. They can be held in several forms: cash, bank deposits or liquid assets such as livestock and jewellery. Financial resources can also be obtained through credit-providing institutions in which case liabilities are attached. • Regular inflows of money: Excluding earned income, the most common types of inflows are pensions, or other transfers from the state, and remittances. In order to make a positive contribution to financial capital these inflows must be reliable – while complete reliability can never be guaranteed there is a difference between a one-off payment and a regular transfer on the basis of which people can plan investments. It should be noted that this definition is different from a strict economic definition of financial capital as it includes flows as well as stocks. (Economists would look only at stocks).

Governance. The form and quality of government systems – structure, power, effectiveness, efficiency, rights and representation. Key governance concerns include: • Is political power exercised fairly? If not, who is disadvantaged? • How efficient and accessible are local service providers? • Are government organisations honest, efficient, effective and accessible? • Are basic human rights protected and enforced through the rule of law? • Are property rights clear and enforceable? • Do all have equal access to the formal justice and legal system? • Do informal/traditional justice systems discriminate against certain groups? • Accountability. • Decentralisation.

Human Capital. Human Capital is a category of livelihood assets. It represents the skills, knowledge, capacity to work, and good health that together enable people to pursue different livelihood strategies and achieve their livelihood outcomes. At a household level human capital is a factor of the amount and quality of labour available. This varies according to household size, skill levels, education, leadership potential, health status, etc. Human capital is necessary to be able to make use of the other four types of livelihood assets.

Institutions. The term 'Institutions' can be used in a number of different ways. In the SL framework it covers two important elements: (a) organisations or agencies that operate within both the public and private sector; and (b) the mechanisms, rules and customs by which people and organisations interact with each other (i.e. the "rules of the game").

Iterative Process. A process involving the continual refinement of goals and objectives as new knowledge and questions generated by investigation and analysis feed back into the investigative cycle. See also Process Approach.

Key Informants. Individuals who are approached for their views on particular issues, such as those relating to livelihoods. Useful for acquiring information quickly as well as for investigating sensitive issues. Key informants are chosen for their particular knowledge (e.g. as a teacher, nurse, poor farmer etc). Care should be taken not to interpret their information as representative of a wider sample.

Livelihood (s). One could describe a livelihood as a combination of the resources used and the activities undertaken in order to live. The resources might consist of individual skills and abilities (human capital), land, savings and equipment (natural, financial and physical capital, respectively) and formal support groups or informal networks that assist in the activities being undertaken (social capital).

Livelihood Assets. A key component in the SL framework, they are the assets on which livelihoods are built, and can be divided into five core categories (or types of capital). These are: human capital, natural capital, financial capital, social capital, and physical capital. People's choice of livelihood strategies, as well as the degree of influence they have over policy, institutions and processes, depends partly upon the nature and mix of the assets they have available to them (see Livelihoods Asset Pentagon). Some combination of them is required by people to achieve positive livelihood outcomes – that is, to improve their quality of life significantly on a sustainable basis. No single category of assets on its own is sufficient to achieve this, but not all assets may be required in equal measure. It is important to note that a single asset can generate multiple benefits. For example, if someone has secure access to land (natural capital) they may also be able to get better access to financial capital, as they can use the land both for productive uses and as security for a loan.

Livelihood Capabilities/Goals/Outcomes. The objectives pursued by people through their livelihood strategies. I.e. the achievements – the results – of livelihood strategies. Outcome categories can be examined in relation to the following categories: • more income • increased well-being • reduced vulnerability • improved food security • more sustainable us of the natural resource base • social relations and status • dignity and (self)respect the term 'outcome' is used – as opposed to 'objectives' – to focus attention on two key issues. These are: • Sustainability: DFID is concerned with promoting a particular type of livelihood – sustainable livelihoods. Problems can occur because people very often have objectives that lead them to 'unsustainable livelihoods'. The word 'outcome' is used to indicate that DFID is not concerned entirely with people's own objectives but also with the sustainability objective. • Orientation to achievement: The word 'outcomes' helps focus attention on results and the progress that is made towards poverty elimination rather than thinking only about what people are trying to achieve.

Livelihood Strategies. The term used to denote the range and combination of activities and choices that people make in order to achieve their livelihood goals. Livelihood Strategies include how people combine their income generating activities; the way in which they use their assets; which assets they chose to invest in; and how they manage to preserve existing assets and income. Strategies may reflect underlying priorities, such as to diversify risk. Livelihood Strategies are diverse at every level. For example, members of a household may live and work in different places, engaging in various activities, either temporarily or permanently. Individuals themselves may rely on a range of different income generating activities at the same time and are likely to be pursuing a variety of goals.

Natural Capital. Natural Capital is a category of livelihood assets. It is the term used for the natural resource stocks (e.g. trees, land, clean air, coastal resources) upon which people rely. The benefits of these stocks are both direct and indirect. For example, land and trees provide direct benefits by contributing to income and people's sense of well-being. The indirect benefits that they provide include nutrient cycling and protection from erosion and storms.

Participation. Occurs when decision-making, and development activities are participatory. The quality of an approach to development and/or government in which the underlying principle is that the key stakeholders (and especially the proposed beneficiaries) of a policy or intervention are closely involved in the process of identifying problems and priorities and have considerable control over the related activities of analysis, planning and the implementation of solutions. To facilitate this approach there are a variety of participatory methods or techniques that can be used.

Participatory Methods. These are methods that are used to encourage people's participation in the processes of identifying/analysing livelihood opportunities and problems, setting priorities and planning, implementing solutions, and monitoring and evaluating changes and impacts. They are very important for understanding livelihoods and are designed so as to promote learning and empower people in their dealings with external agencies and institutions. There are several visualisation tools for group discussions which enable a large number of people, including illiterate people, to contribute views and see the results. These include timelines, seasonal calendars, transect walks, resource maps, preference ranking, matrix ranking, wealth ranking, and venn diagrams. These are often called 'rapid appraisal' or 'participatory rural appraisal' Depending on how they are used, they may only promote participation in information gathering (if the information is used by outsiders), or they may be used as tools for participatory decision making. Both uses have a role. Either way, the methods can be used within an SL approach to investigate a wide range of factors in a relatively open-ended way, such as: • income and wealth distribution within a community or neighbourhood; • the historical, social and environmental context of livelihoods; • trends, forces of change, influence of policies; • pros and cons of different livelihood strategies, reasons behind people's choices, what they wish to see being done by local authorities, etc.

Partnerships. Refers, in the SL Approach, to Partnerships in the development process. The SL approach stresses the importance of partnerships at all levels including: • Partnerships with poor people; • Partnerships with both public sector and private sector implementing agencies and stakeholders in developing countries – the SL approach explicitly recognises the important role that the private sector

plays in development; • Partnerships between different departments within DFID; • Partnerships with other donors; • Partnerships with research organisations. It is hoped that the dialogue around the development and implementation of the SL approach will provide the basis for deeper and more meaningful development partnerships. Such partnerships will only be possible if care is taken to ensure that the approach builds on the accumulated experience of all partners and is not imposed on any partner.

People-centred approach. An approach that involves a focus on people, i.e. • what matters to people; • what distinguishes one group of people from another group; • working with people in a way that fits in with their current livelihood strategies, social environment and ability to adapt. One of the core principles of the sustainable livelihoods approach is that it should be people-centred.

Physical Capital. Physical Capital is a category of livelihood assets. It comprises the basic infrastructure and physical goods that support livelihoods. Infrastructure consists of changes to the physical environment that help people to meet their basic needs and to be more productive. Key components of infrastructure include: affordable transport systems, water supply and sanitation (of adequate quantity and quality), energy (that is both clean and affordable), good communications and access to information. Shelter (of adequate quality and durability) is considered by some to be infrastructure, while others would consider it to be a private physical asset and somewhat different from infrastructure. Other components of physical capital include productive capital that enhances income (e.g. bicycles, rickshaws, sewing machines, agricultural equipment), household goods and utensils and personal consumption items such as radios and refrigerators. Most of these are owned by individuals or groups. Some, such as larger agricultural equipment or processing units, can be accessed through rental or by paying a fee for the services used.

Policy. Policy can be thought of as a course or principle of action designed to achieve particular goals or targets. These tend to be broader and less specific than those of the programmes and projects used to implement Policy. The idea of policy is usually associated with government bodies, but other types of organisation also make policies – for example a local NGO's policy about who is eligible for its programmes. Policy can be divided into macro policy – affecting the whole country – or micro policy – affecting particular sectors, districts, neighbourhoods or groups. Also meso policy. It can also be strategic – designed to create a long-term framework for action – or quite short-term and temporary.

Process Approach. An approach to interventions in which broad objectives for change may be identified and agreed but the exact means by which these objectives will be achieved may, at the outset, be unknown and unknowable. Such interventions are approached in an exploratory mode. Implementation takes place in successive, defined, iterative stages with future activities being planned in the light of results gained as implementation proceeds.. 'Processes' attempts to capture the dynamic element of policies and institutions and avoid a 'snapshot' approach. It refers to how things are done rather than what is done. It also refers to the ways policies and institutions change and/or interact with broader processes of change. Change may happen as a result of policies or due to other factors such as: • the nature of authority and decision-making structures; • the form and quality of government systems (governance); • the extent and nature of public participation in policy and other processes; • the effect of this participation; • other factors behind change (for example, external shocks that form part of the vulnerability context).

Remittances. Money that is sent home by family/household members living and working away from home.

Resilience is the capacity to deal with change and continue to develop. The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organizing itself to increase its capacity for learning from past disasters for better future protection and to improve risk reduction measures. Resilience refers to three conditions that enable social or ecological system to bounce back after a shock. The conditions are: ability to self-organize, ability to buffer disturbance and capacity for learning and adapting

Sample Surveys. This is a tool for investigating the characteristics of a particular population – the population may be one of households, individuals, farms, villages, animals or any other unit of study. To facilitate the investigation a sample of the population is surveyed and studied. Usually, though not always, the sample is selected at random to increase the chances of it being representative of the whole population.

Seasonality. Seasonality is a key element in the vulnerability context. It refers to seasonal changes, such as those affecting: assets, activities, prices, production, health, employment opportunities etc. Vulnerability arising from seasonality is often due to seasonal changes in the value and productivity of natural capital and human capital (through sickness, hunger etc). The poor are often more vulnerable to these changes than wealthier groups.

Shocks. Shocks are a key element in the vulnerability context. They are usually sudden events that have a significant impact – usually negative – on livelihoods. They are irregular and vary in intensity and include events such as natural disasters, civil conflict, losing one's job, a collapse in crop prices for farmers etc. They can be classified into the following categories: • Human shocks (e.g. illness, accidents); • Natural shocks (e.g. floods, earthquakes); • Economic shocks (e.g. job losses, sudden price changes); • Conflict (e.g. war, violent disputes); • Crop/livestock health shocks. Shocks and trends may be linked. For example some changes that appear as trends at a national or even regional level (such as increased infection rate for diseases such as AIDS and malaria) can impact upon a household or individual as severe shocks (i.e. death in the family).

Social Capital. Social Capital is a category of livelihood assets. It relates to the formal and informal social relationships (or social resources) from which various opportunities and benefits can be drawn by people in their pursuit of livelihoods. These social resources are developed through investment in: • interactions (through work or shared interests) that increase people's ability to work together; • membership of more formal groups in which relationships are governed by accepted rules and norms; • relationships of trust that facilitate co-operation, reduce transactions costs and sometimes help in the development of informal safety nets amongst the poor. Critical benefits of social capital are access to information, to influence or power, and to claims or obligation for support from others.

Social Sustainability. An initiative is socially sustainable if it rests on a particular set of social relations and institutions, which can be maintained or adapted over time. One of a number of dimensions of sustainability that also include economic sustainability, institutional sustainability and environmental sustainability.

Stakeholder Analysis. Stakeholder analysis involves a) identifying key stakeholders in relation to any initiative: i.e. groups who have a similar interest (or 'stake'), and which differs in some way from others' interest b) analysing the perspective of the key stakeholder groups: their role, views, needs, etc. and their relationship with other stakeholder groups. Stakeholder analysis can help to reveal, for example: • the capacities of different stakeholders to participate in (and benefit from) development activity as well as their perspectives on that activity, • the relative political power, access to information and institutional means to command attention (including blocking change) of different groups, • the complexity of organisational relationships, • the area and sources of power and patronage, • who depends upon which environmental resources and services and how they are affected by change, • gaps and overlaps in the roles and functions of different stakeholder groups.

Stakeholders. People who are affected in some way or another by an activity. Can be divided into primary stakeholders and secondary stakeholders: • Primary stakeholders are those who are directly affected by an activity, as beneficiaries, losers or implementing agencies or those with a direct influence the activity. N.B. to be a primary stakeholder you do not have to benefit from an activity, you simply have to be closely involved with it. So, for example, in an urban slum renewal project, primary stakeholders might include slum dwellers, slum landlords and partner implementing agencies, though it is only the slum dwellers who will actually benefit from the project. It is usually necessary to sub-divide primary stakeholders into several smaller stakeholder groups. • Secondary stakeholders are indirectly affected by an activity. For example, traders may benefit from a new road that is built to connect a remote community to the capital city or from the increased productivity that results from a technology project.

Survival strategies are the tactics that people use in order to 'get by'. The concept is similar to that of livelihood strategies, but the implications of survival strategies is that they are generally short term and reactive, unlike livelihood strategies which also take account of long term aspirations and use proactive approaches in an attempt to realise these aspirations.

Sustainability (1) When referring to livelihoods, sustainability refers to the capacity to withstand shocks and stresses while, at the same time, not compromising the environment. Sustainability (2) When referring to development interventions, sustainability refers to the scope of projects and programmes to continue to function after the withdrawal of external support. This issue of sustainability is often applied to projects which are intended, after an initial intervention by donors, public sector organisations, or NGOs, to be managed locally by community organisations. Something is sustainable when it can continue into the future, coping with and recovering from stresses and shocks, while not undermining the resources on which it draws for existence. These resources may be natural, social, economic or institutional, which is why sustainability is often analysed in four dimensions: economic sustainability, environmental sustainability, institutional sustainability and social sustainability. Sustainability does not imply that there is no change, but that there is an ability to adapt over time. Sustainability is one of the core principles of the sustainable livelihoods approach.

Sustainable Livelihoods Approach. An approach to development in which people's livelihoods are the focus of attention and which adopts the core principles of the sustainable livelihoods approach.

Sustainable Livelihoods Framework. DFID's sustainable livelihoods (SL) framework is its version of a visualisation tool that has been developed to help understand livelihoods. It is intended to help users think through the different aspects of livelihoods, and particularly those factors that cause problems or create opportunities. Other organisations have developed similar SL frameworks that compliment DFID's. In its original form, the SL framework can be divided into five key components: the Vulnerability Context, Livelihood Assets, Policy, Institutions and Processes, Livelihood Strategies and Livelihood Outcomes = Capabilities. The SL framework gives an impression of how these factors relate to each other. Indeed the links between them (arrows in the framework) are also critical, reflecting how people convert assets to activities, or how policies, institutions and process affect the key components. The framework aims to stimulate debate and reflection, which should result in more effective poverty reduction. The framework does not attempt to provide an exact representation of reality. It is a simplification and it should be adapted for use in any given circumstance. Real livelihoods are complex and varied, and can only be properly understood through direct experience.

Sustainable Livelihoods. A livelihood is sustainable when it is capable of continuously maintaining or enhancing the current standard of living without undermining the natural resource base. For this to happen it should be able to overcome and recover from stresses and shocks (e.g. natural disasters or economic upsets).

Stewardship. Environmental stewardship as the actions taken by individuals, groups or networks of actors, with various motivations and levels of capacity, to protect, care for or responsibly use the environment in pursuit of environmental and/or social outcomes in diverse social–ecological contexts. It has 5 cross-cutting characteristics: (1) voluntary (as opposed to mandatory) participation; (2) altruistic and moral-ethical connotations, sometimes associated with religion that engender a sense of care and shared responsibility, with consideration for the interests of human society, other species, and the natural world; (3) an emphasis on inter-generational rather than short-term benefits; (4) applicability across different spatial scales, i.e. from 'backyard to planet'; and (5) the need for multiple partnerships, collaborations and linkages.

Transactions Costs. The costs associated with making, monitoring and enforcing agreements/transactions/contracts etc. The agreements may be formal or informal and transaction costs may be incurred before and after an agreement is made. A large proportion of the costs are associated with acquiring information about the nature of an agreement (e.g. the quality of goods or services being transacted) and the reliability of other parties to the agreement. Transaction costs are incurred gaining information or commitments in order to reduce risks of loss in a transaction.

Trends. Trends are a key element in the vulnerability context. They can have either a positive or a negative effect on livelihoods and involve changes that take place over a longer period of time than is the case with changes brought about by shocks or seasonality. Examples of trends include the following: • Population trends (e.g. increasing population pressure); • Resource trends (e.g. soil erosion, deforestation); • Economic trends (e.g. declining commodity prices, development of new markets); • Trends in governance/politics (e.g. increasing accountability); • Technological trends (e.g. the development of more efficient production techniques).

Triangulation. Seeking confirmation or better understanding of a subject or question by getting information from a variety of independent sources (e.g. soliciting the views and opinions of a diverse range of individuals, or using different methods to gain information on the same topic).

Venn Diagrams. Diagrams of circular (often overlapping) areas used to represent relationships. They are a useful means of showing the links between different types of groups, in a clear, graphic format. They can also be used to summarise the roles that different groups play and what people's expectations are about how these groups will function. One of a number of different participatory methods.

Vulnerability/Vulnerability Context. A key component in the SL framework, the Vulnerability Context refers to the shocks, trends and seasonality that affect people's livelihoods – often, but not always, negatively. The key feature of all the factors within the Vulnerability Context is that they are not controllable by local people in the immediate or medium-term. Vulnerability or livelihood insecurity resulting from these factors is a constant reality for many poor people. Vulnerability refers both to external exposure to shocks, stress and risk (e.g. loss of income sources, illness, natural disasters, crime) and the inability of people to cope with these risks without suffering damaging loss. While both the poor and the better off are subject to risks, the poor are usually less able to cope without suffering from damaging loss.

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