Freshwater Transboundary Fisheries Management and Aquaculture



SADC TFCA NETWORK

Investing in People, Nature and Partnerships

ANNUAL MEETING 2026

9 - 13 NOVEMBER 2026

SKUKUZA KRUGER NATIONAL PARK

GREAT LIMPOPO TRANSFRONTIER CONSERVATION AREA





forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Global Gateway

Co-funded by the European Union

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by:
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

IUCN ifaw

South African NATIONAL PARKS

Freshwater Transboundary Fisheries Management and Aquaculture

- Indigenous knowledge and best practices for transboundary fisheries management in SADC TFCAs

Lead: **Victor Makombe**, Zambia

Presenters:

Lilian Nyashanu – SADC Secretariat

Britta Hackenberg – Namibia Nature Foundation

Felix Ngamlagosi – Executive Secretary, ZAMCOM

Adroit Chakandinakira – Zimparks (Virtual)

Georgina Chibbamulilo – AwFishNet Zambia (Virtual)

SETTING THE REGIONAL SCENE FOR TRANSBOUNDARY FISHERIES MANAGEMENT IN SADC TFCAS :INLAND FISHERIES AND AQUACULTURE IN SADC



SADC TFCA Network Side Event | 12 November 2026, Skukuza, South Africa

In cooperation with:

Global Gateway

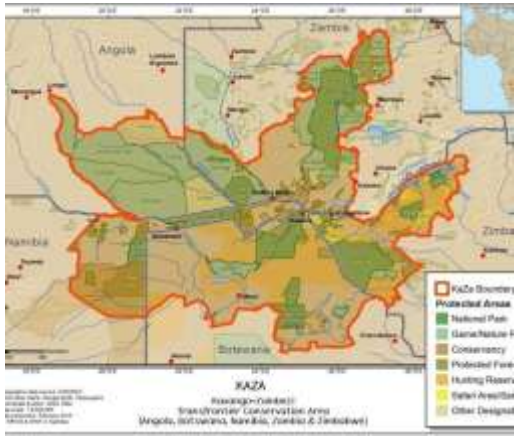
Co-funded by the European Union

german cooperation

SADC's CONNECTED FRESWATER LANDSCAPE







70%

of regional water resources cross national boundaries, according to SADC.

15

major shared transboundary river basins on mainland SADC.

Shared lakes

Tanganyika • Malawi/Nyasa • Kariba

River systems

Zambezi • Limpopo • Congo • Okavango

Sources: SADC shared watercourse materials; CRIDF/CRIBMAP; maps are illustrative.

WATER KNOWS NO BORDERS. FISH KNOW NO BORDERS.

WATER CONNECTS

Flows, wetlands, habitats and water quality cross borders.

FISHERIES CONNECT

Fish stocks, fishing grounds, trade and livelihoods are linked.

MANAGEMENT MUST

Join up rules, evidence, institutions and communities.

Regional integration is a practical requirement for managing shared aquatic resources sustainably.

SADC PROTOCOLS

SADC Protocol on Fisheries (2001)

ARTICLE 3 | Sustainable use of living aquatic resources, food security and livelihoods.

ARTICLE 7 | Cooperation on shared stocks, information exchange, joint research, coordinated management and shared-resource plans.

ARTICLE 12 | Small-scale fisheries, fishing rights, participation and traditional transboundary fishers.

ARTICLES 13–14 | Responsible aquaculture and protection of aquatic ecosystems.

Revised Protocol on Shared Watercourses (2000)

ARTICLE 2 | Coordinated, integrated and environmentally sound management.

ARTICLE 3 | Equitable and reasonable use, cooperation and information exchange.

ARTICLE 4 | Ecosystem protection, pollution prevention and consultation on planned measures.

Why it matters: water allocation, dams, pollution and catchment degradation directly affect fish habitats and fisheries livelihoods.

Complementary instruments: shared-water governance + fisheries-specific cooperation.

REGIONAL COOPERATION

SADC REGIONAL FRAMEWORK

RBOs

Basin planning, water information and coordinated action.

TFCAs

Landscape conservation, biodiversity and cross-border coordination.

Fisheries agencies

Research, stock monitoring, regulation and enforcement.

Communities

Local knowledge, co-management and livelihood priorities.

JOINT PLANNING • SHARED EVIDENCE • COORDINATED MANAGEMENT • COMMUNITY BENEFITS

TFCAs can help ensure fisheries and aquatic livelihoods are visible in wider conservation and basin-level decisions.

IMPORTANCE OF INLAND FISHERIES







Food & nutrition

Accessible animal protein and micronutrients for lakeside, riverine and wetland communities.

40% of catches come from inland fisheries

Jobs & value chains

Fishing, processing, drying, transport, trading and local markets sustain household income.

Biodiversity & resilience

Healthy aquatic ecosystems support species diversity, ecological connectivity and rural resilience.

A TFCA approach should pursue conservation outcomes and community benefits together.

SHARED WATERS, SHARED CHALLENGES

FISHING PRESSURE
Overfishing, illegal practices and unreported catches

WATER & HABITAT
Pollution, altered flows and habitat degradation

CLIMATE VARIABILITY
Droughts, floods, warming and changing lake levels

GOVERNANCE GAPS
Fragmented rules, weak information and limited coordination

LIVELIHOOD RISK
Safety, income, post-harvest losses and market barriers

Pressures reinforce one another. Responses must connect fisheries, water, ecosystems and communities.



Sources: SADC, Protecting our fisheries (2021); KAZA State of the TFCA reporting.

PROFISHBLUE: BUILDING REGIONAL FISHERIES EVIDENCE



Regional reach

A SADC programme supporting fisheries governance, blue economy development and trade corridors.

Shared-water focus

Joint fisheries assessment in Lake Tanganyika and blue economy planning for Lake Kariba.

Science & capacity

Joint assessment methods, data systems, equipment and regional technical capacity.

Institutions

SADC-FAO collaboration with riparian states and lake-basin institutions.

LAKE KARIBA: A SHARED BLUE ECONOMY STRATEGY



Zambia + Zimbabwe

Stakeholder-validated in Siavonga, 7 August 2025

1 LAKE KARIBA GOVERNANCE

Bilateral framework, collective water management and joint aquatic-resource stewardship.

2 CLIMATE & BIODIVERSITY RESILIENCE

Biodiversity restoration, climate adaptation and ecosystem resilience.

3 FISHERY & AQUACULTURE CO-VIABILITY

Sustainable capture fisheries alongside responsible aquaculture development.

4 TRANSVERSAL SUPPORT

Joint research, capacity development, spatial planning and shared monitoring.

A practical example of aligning fisheries, conservation, climate resilience and local economic opportunities across a shared lake.

Sources: SADC/FAO PROFISHBLUE; SADC 43rd Technical Committee on Fisheries record; Lake Kariba Blue Economy Strategy.

KAZA TFCA

ONE CONSERVATION LANDSCAPE ACROSS FIVE COUNTRIES

ANGOLA | BOTSWANA | NAMIBIA | ZAMBIA | ZIMBABWE

CONNECTED BY THE KAVANGO–ZAMBEZI RIVER BASINS

KAVANGO SYSTEM

River, wetlands and the Okavango Delta connect communities and habitats across the western part of KAZA.

KWANDO–CHOBE SYSTEM

Shared river reaches, floodplains and seasonal habitats link Namibia and Botswana with the wider landscape.

UPPER ZAMBEZI SYSTEM

The Zambezi connects fisheries, communities and conservation areas across national boundaries.

Sources: KAZA TFCA State of the TFCA Report (2024); KAZA Master Integrated Development Plan

KAZA COMMUNITY FISHERIES RESERVES

Community-based fisheries management is already being applied within the Namibian component of KAZA, with emerging transboundary cooperation along the Zambezi.

COMMUNITY FISHERIES RESERVES

Gazetted reserves include Sikunga, Impalila, Lwezuba, Kabweza, Munga, Nsala and Makumbi. Communities help identify protected reaches, apply local rules and monitor catches.

TRANSBOUNDARY CO-MANAGEMENT

Community forums connect neighbouring communities across borders. A Zambezi initiative has supported community-managed fish sanctuaries on both the Namibian and Zambian sides.



Community participation in fishing and local resource use



Women and youth in fisheries value chains



Shared river systems require coordinated stewardship

TFCA lesson: bring fisheries authorities, RBOs, conservancies and communities together around shared habitats, compatible rules, monitoring and fair local benefits.

Sources: KAZA State of the TFCA Report (2024); Namibia Nature Foundation; Peace Parks Foundation

TFCAS: BRIDGING CONSERVATION AND FISHERIES







Indigenous & local knowledge

Seasonal patterns, fish behaviour, local habitats and customary practices can complement scientific monitoring.

Community co-management

Meaningful participation, inclusive decision-making and fair access strengthen compliance and legitimacy.

Conservation & livelihoods

Healthy habitats, sustainable fishing and resilient value chains should reinforce one another.

The opportunity: ensure fisheries and fishing communities are part of TFCA planning, not an afterthought.

RESPONSIBLE AQUACULTURE CAN COMPLEMENT CONSERVATION



Diversify livelihoods

Where appropriate, aquaculture can widen income and food options for rural communities.

Potential conservation benefit

Can complement wild fisheries and reduce pressure only when well planned and locally appropriate.

Environmental safeguards

Carrying capacity, water quality, biosecurity, biodiversity and responsible siting.

Community benefit

Access to skills, finance, markets and fair participation in value chains.

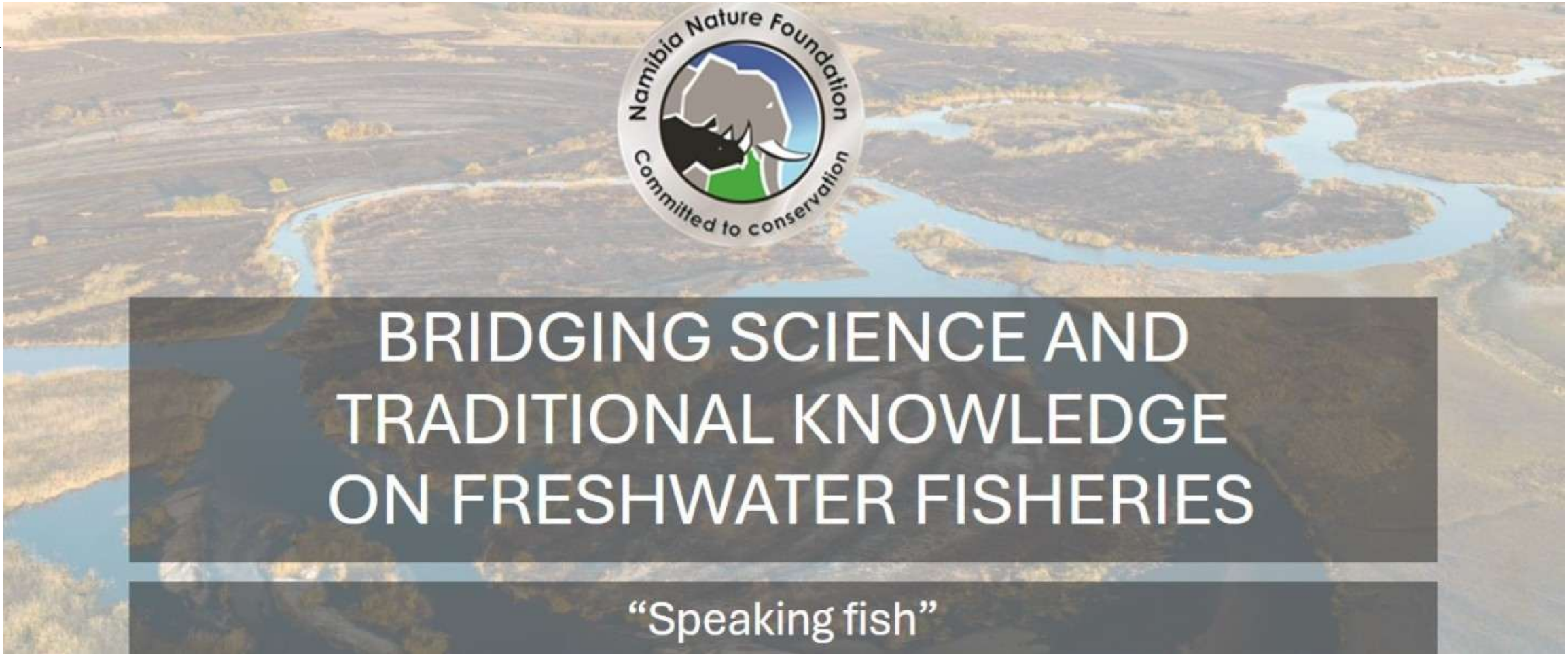
Aquaculture is not automatically a conservation measure: outcomes depend on sound planning, regulation and investment.

Sources: SADC Regional Aquaculture Strategy and Action Plan; FAO responsible aquaculture guidance.

FROM SHARED WATERS TO SHARED ACTION

01	**SHARE EVIDENCE**	Joint stock assessments, frame surveys and compatible data systems.
02	**CONNECT INSTITUTIONS**	Fisheries agencies, RBOs, TFCAs, water authorities and communities.
03	**ALIGN MANAGEMENT**	Coordinated rules, shared plans, monitoring and enforcement.
04	**INVOLVE COMMUNITIES**	Indigenous knowledge, co-management, women and youth.
05	**LINK CONSERVATION & LIVELIHOODS**	Responsible aquaculture, resilient value chains and local benefits.

Cooperate across borders. Manage at ecosystem scale. Share benefits fairly.



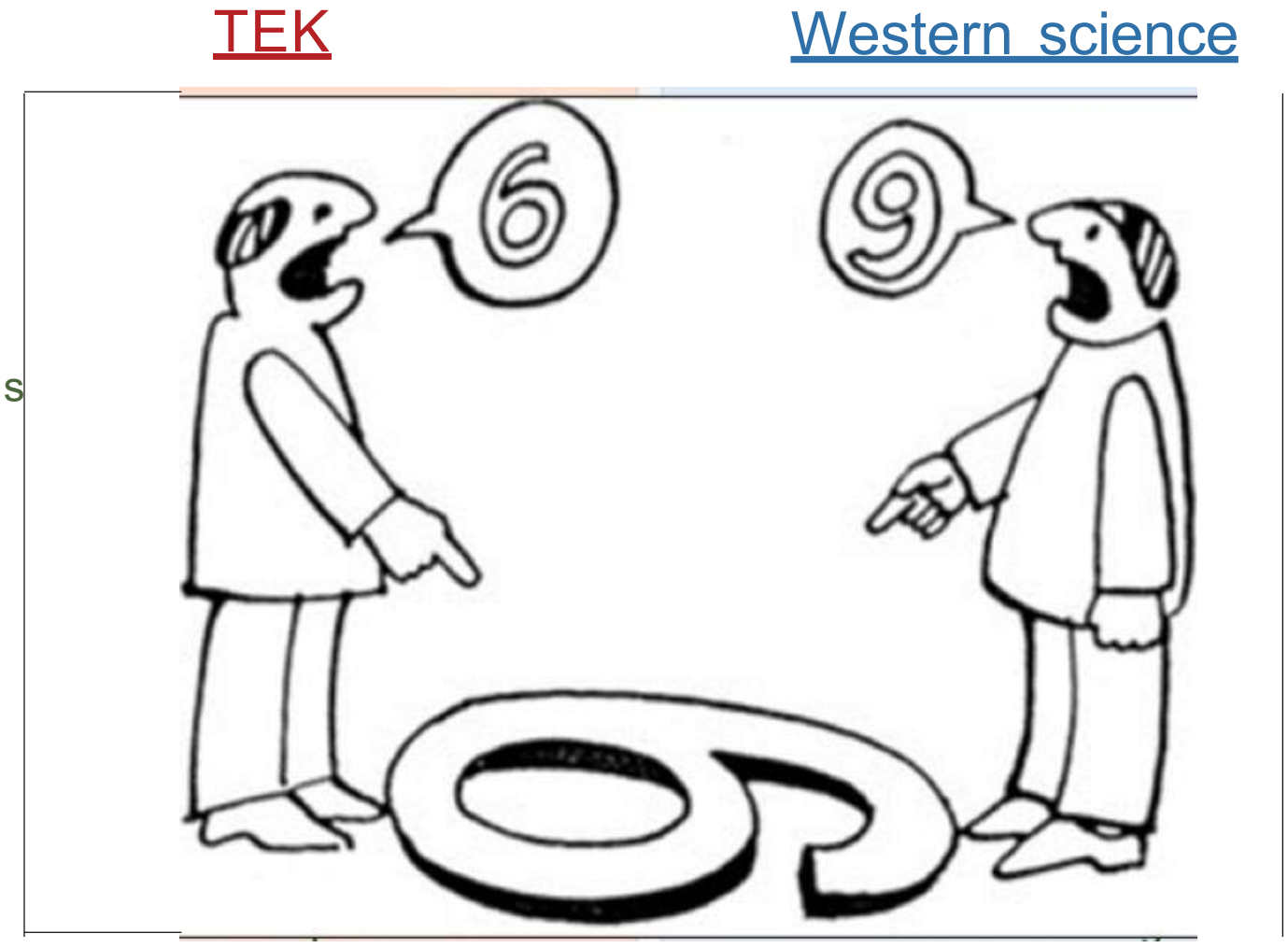
BRIDGING SCIENCE AND TRADITIONAL KNOWLEDGE ON FRESHWATER FISHERIES

"Speaking fish"

·'<T'-□ fIII. **B □ i t t a** Hackenberg, Nam1b1aN□□un.□Foun8ati6ri'

SADCJ1_F:...,,CAnetworkingmeeting, 10-13 November2026 .

Challenges in integrating Traditional Knowledge



- Different "languages"
- Different lenses and ways of interpretation
- Different levels of education
- Different means of communication
- Different learning schemes

Failu:2005 Comparing Traditional Ecological Knowledge (TEK) to Western Science

CBD - global relevance of Traditional Knowledge

- **Global Biodiversity Framework and Monitoring Framework**
  - Target 22 on participation and rights of IPLCs
  - Use of community-based monitoring and information systems
  - Indicators for traditional knowledge (language diversity, traditional occupation)
- **Establishment of a new Subsidiary body on 8J**
  - Modus operandi approved, including a co-chair from IPLCs
  - Intersessional dialogue for reporting on ITTs under target 3
- **Program on Forest biodiversity**
  - Recognizes traditional knowledge relevant for forest management
- **Program of Work for Protected Area Connectivity**
  - Specific reference to traditional knowledge for planning, management and restoration
  - Intersessional dialogue to consider connectivity as a potential fifth element

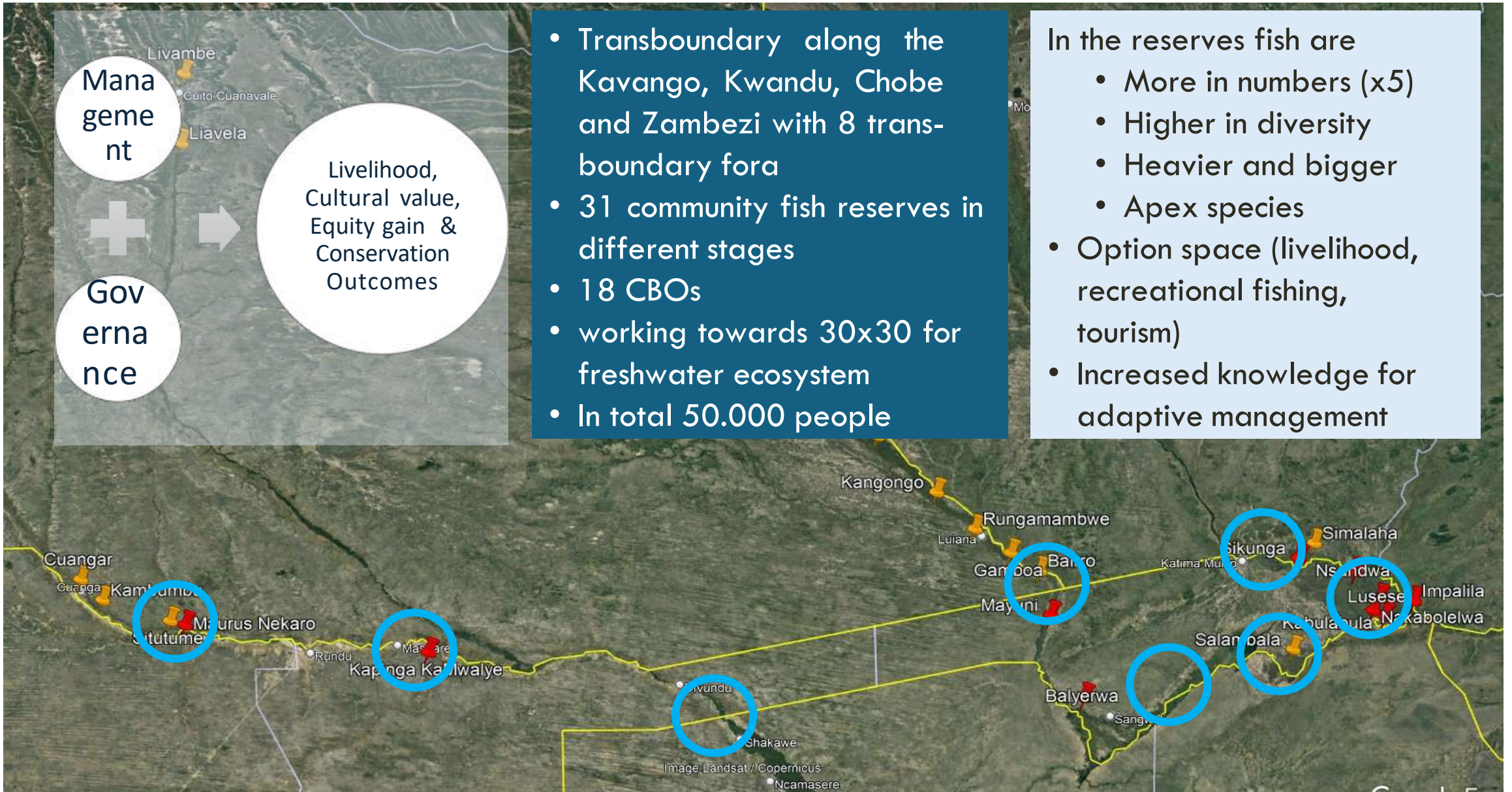
Indigenous and local knowledge

- knowledge, innovations, rites, beliefs, values and practices of indigenous and local communities
- Place-based, often orally inherited, collectively owned
- Partly exclusive and sensitive or sacred
- Ecosystems, species and species behaviour; management, sustainable u
- Food, health

lack of documentation



Community-managed Fisheries Reserves in KAZA TFCA



- Transboundary along the Kavango, Kwandu, Chobe and Zambezi with 8 trans-boundary fora
- 31 community fish reserves in different stages
- 18 CBOs
- working towards 30x30 for freshwater ecosystem
- In total 50.000 people

In the reserves fish are

- More in numbers (x5)
- Higher in diversity
- Heavier and bigger
- Apex species

- Option space (livelihood, recreational fishing, tourism)
- Increased knowledge for adaptive management

Adaptive manage ment



Practitioners' knowledge



Scientific knowledge



Traditional knowledge

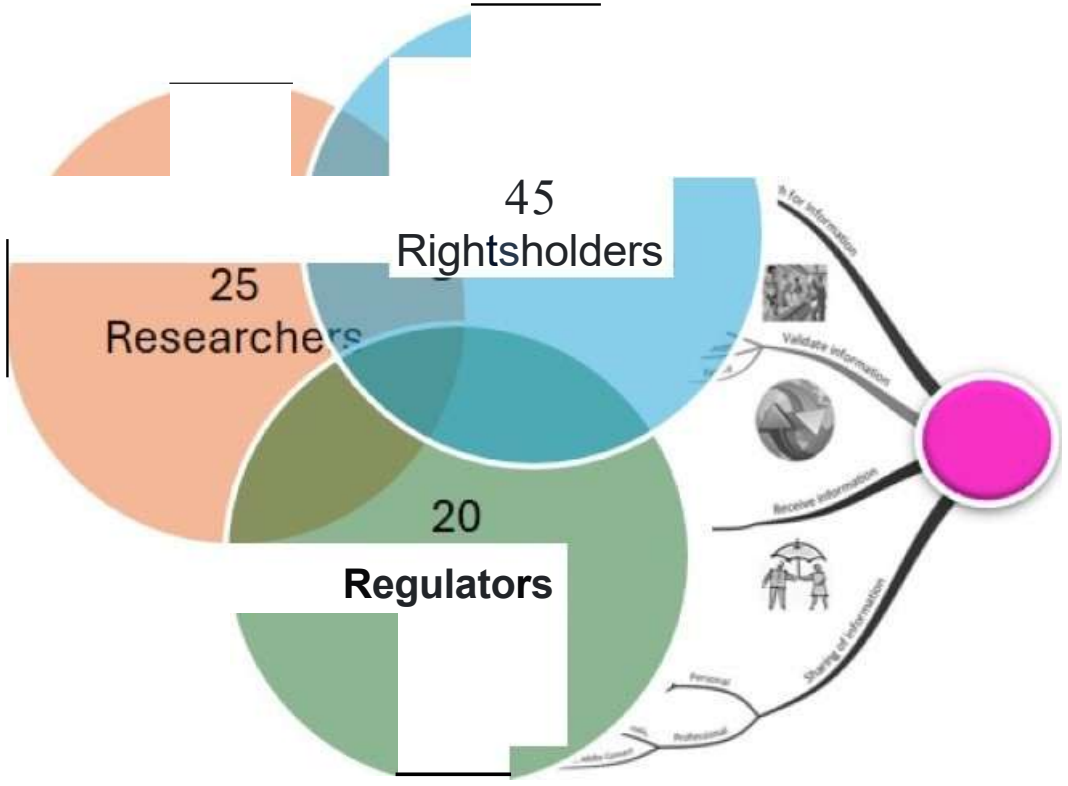
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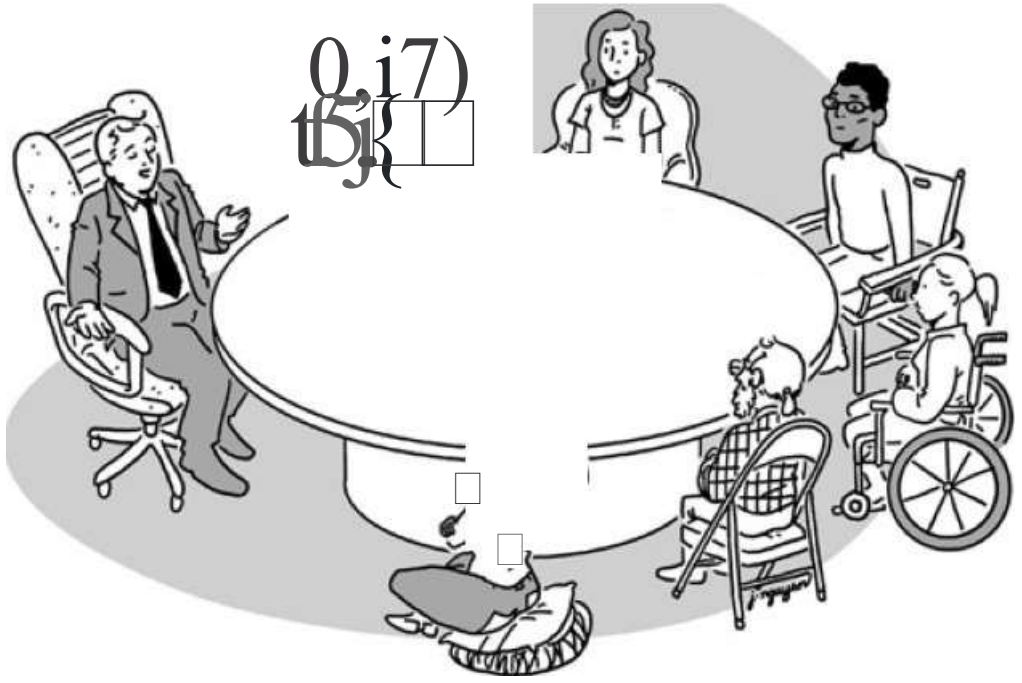
Fisheries Indaba

Community expert+ validation sessions

Science session

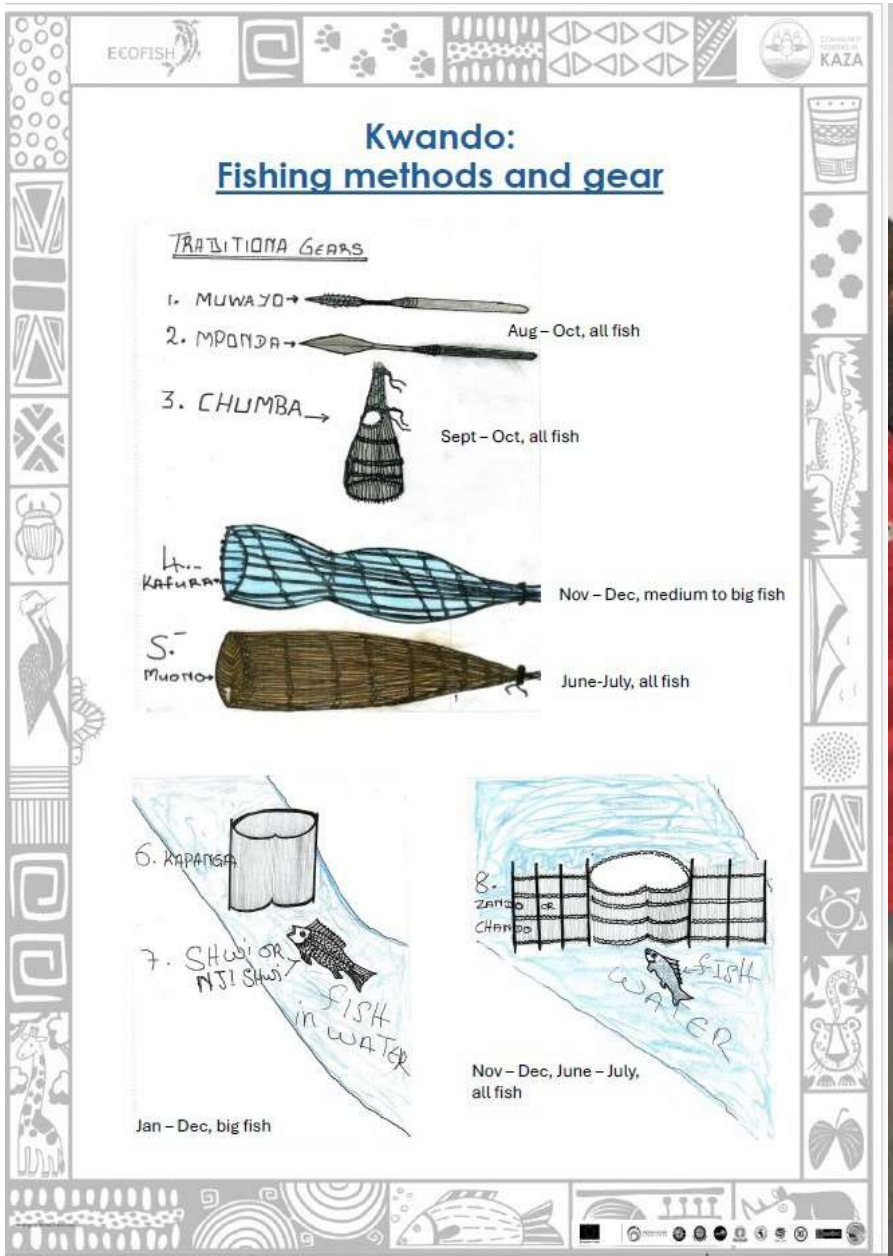
Joint session





"Notice how the table *is* round, *so* that everyone sitting at it *is* equal."

Supporting communities in documentation





Supporting scientists

Presented at the Ecof

Name

Title/Issue

Objective(s)

Findings/Results/Lessons learnt

Recommendations
What should be done

Comments
Who to take action
Replicability of the study
Next steps

Presented at the Ecofish-funded Fisheries Indaba in W

Confred Musuka, The Copperbelt Universi

Title: The Economic Activities that help Communities Along the Zambezi River Withir

Objective(s)3:

1. Assessing the Economic Activities Impacting on Livelihoo
2. Enhancing Sustainable Economic Practices

Findings/Results/Lessons learnt

1. Diversification of Livelihood Sources Communi as: Tourism, Agriculture, Fishing and Handcraf
2. Agriculture Practices and Fishing Activities fa water quality, Soil degradation or Overfishing
3. There is need for sustainable agriculture tech management and Regulation to ensure fishe

Recommendations
1. Need for delicate balance between economic environmental conservation.
2. Identify gaps in policy implementation, goverr regulatory frameworks affecting economic activ
3. Building resilience through diversified liveliho management practices and knowledge sharing r beyond.

In simple language, to be taken forward by communities, g

Comments
1. Government agencies at Local, Regional and N to formulate or revise policies.
2. Government bodies can replicate study to asse monitor changes in economic activities.
3. Collaborate with researchers NGOs to provide
4. Communities can participate in future assessn

Who to take action

Presented at the Ecofish-funded Fisheries Indaba in Windhoek, 18 July 2024

Economic Activities and Livelihoods of Communities on the Zambezi River, Zambia

Key challenges for fisheries

- Low production and productivity
- Changes in fish communities and replacement of larger fish species with **smaller fish**
- Lack of **fish storage** facilities
- Weak **enforcement** of regulations
- Environmental degradation
- **Invasive alien** fish species
- Fish **disease** outbreaks
- **Low participation of fishers in the governance and management of fisheries resources**
- Climate Change

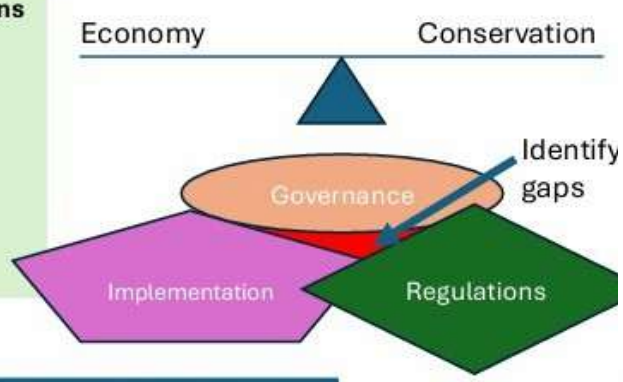


Co-management in the National Fisheries Policy

- **Role of communities** in strengthening management of fisheries
- **Capacity building,** community awareness and sensitization

Recommendations

- **Diversified livelihood strategies**
- Adaptive management
- Knowledge sharing



Research by: Confred Musuka, The Copperbelt University, 2024

Presented at the Ecofish-funded Fisheries Indaba in Windhoek, 18 July 2024

The value of fisheries reserves in Namibi

No fisheries reserve

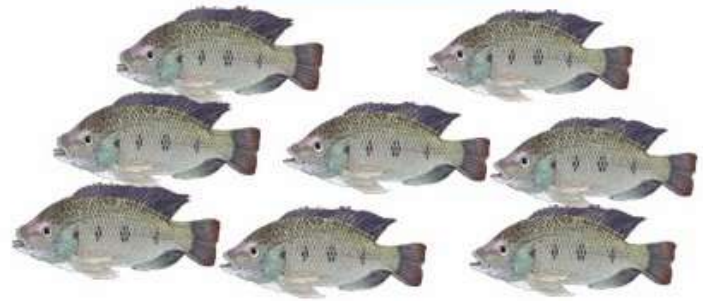


Lessons

Fisheries reserves =
More fish + Bigger fis

More fish caught nea
reserve than far awa

Fisheries reserve

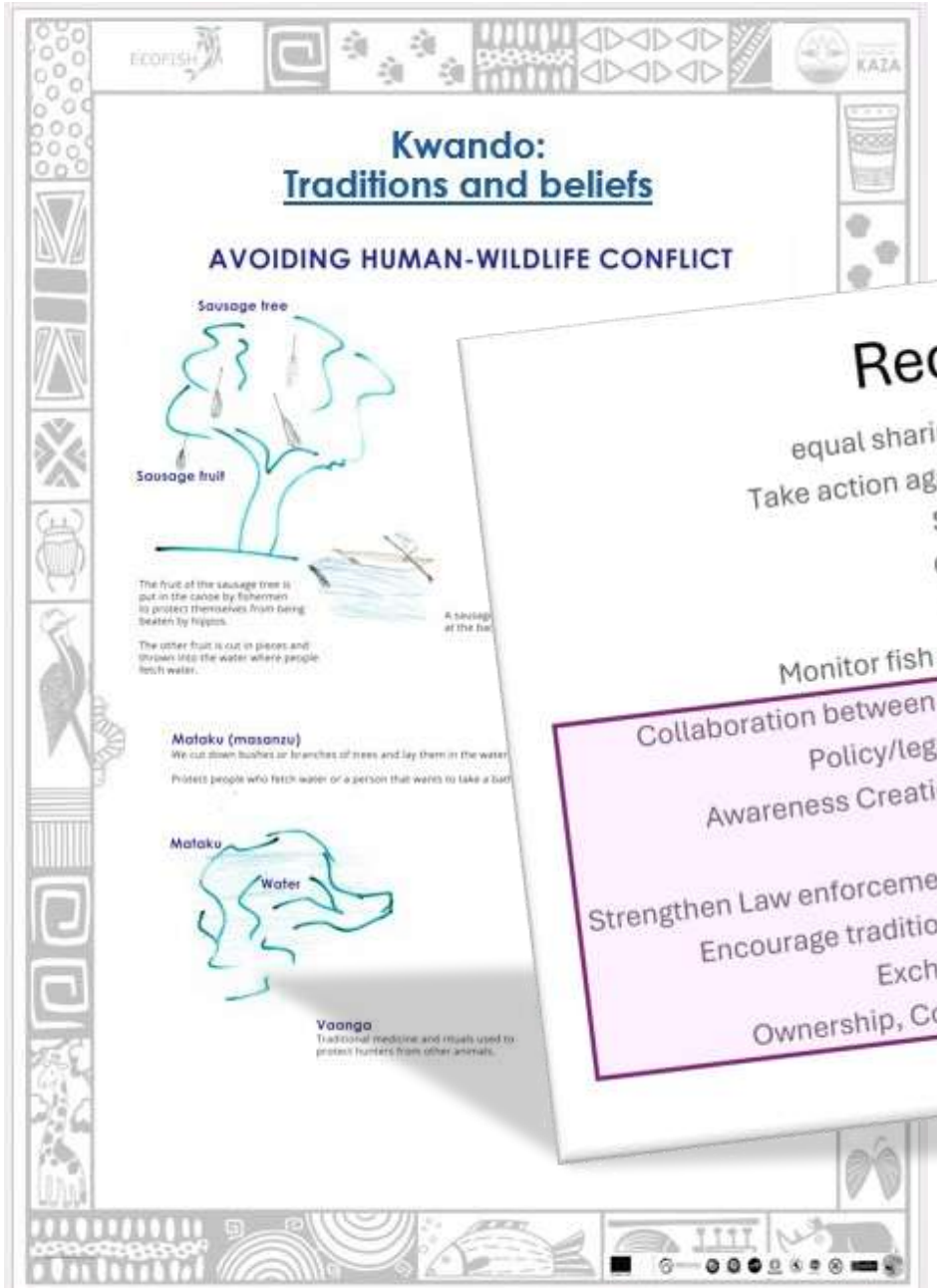


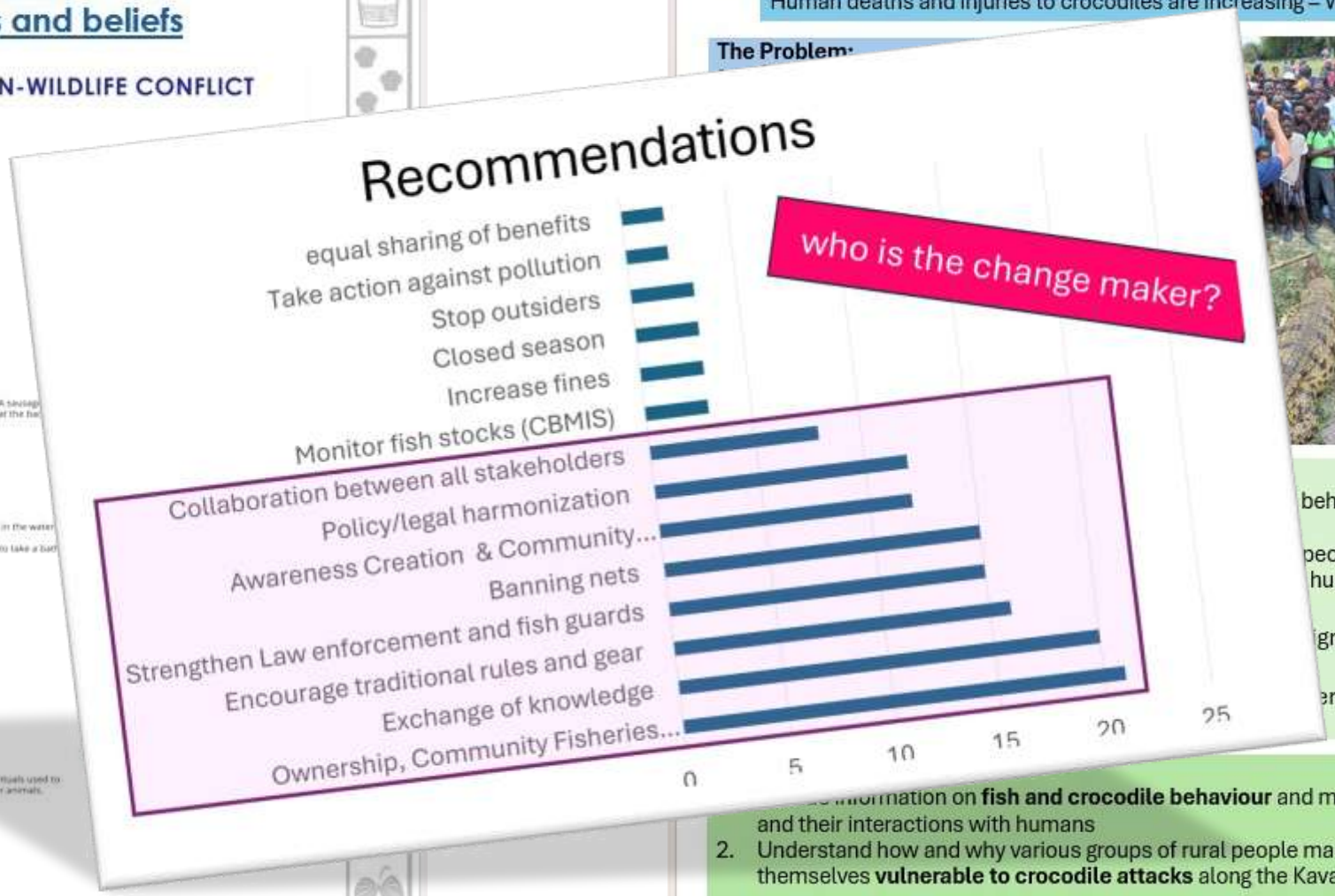
Recommendations

- Establish more fisheries reserves for community bene
- Fisheries co-managed between communities and Ministry
- Monitor all fisheries reserves to showcase results

Research by: E. Simasiku, UNAM, 2020

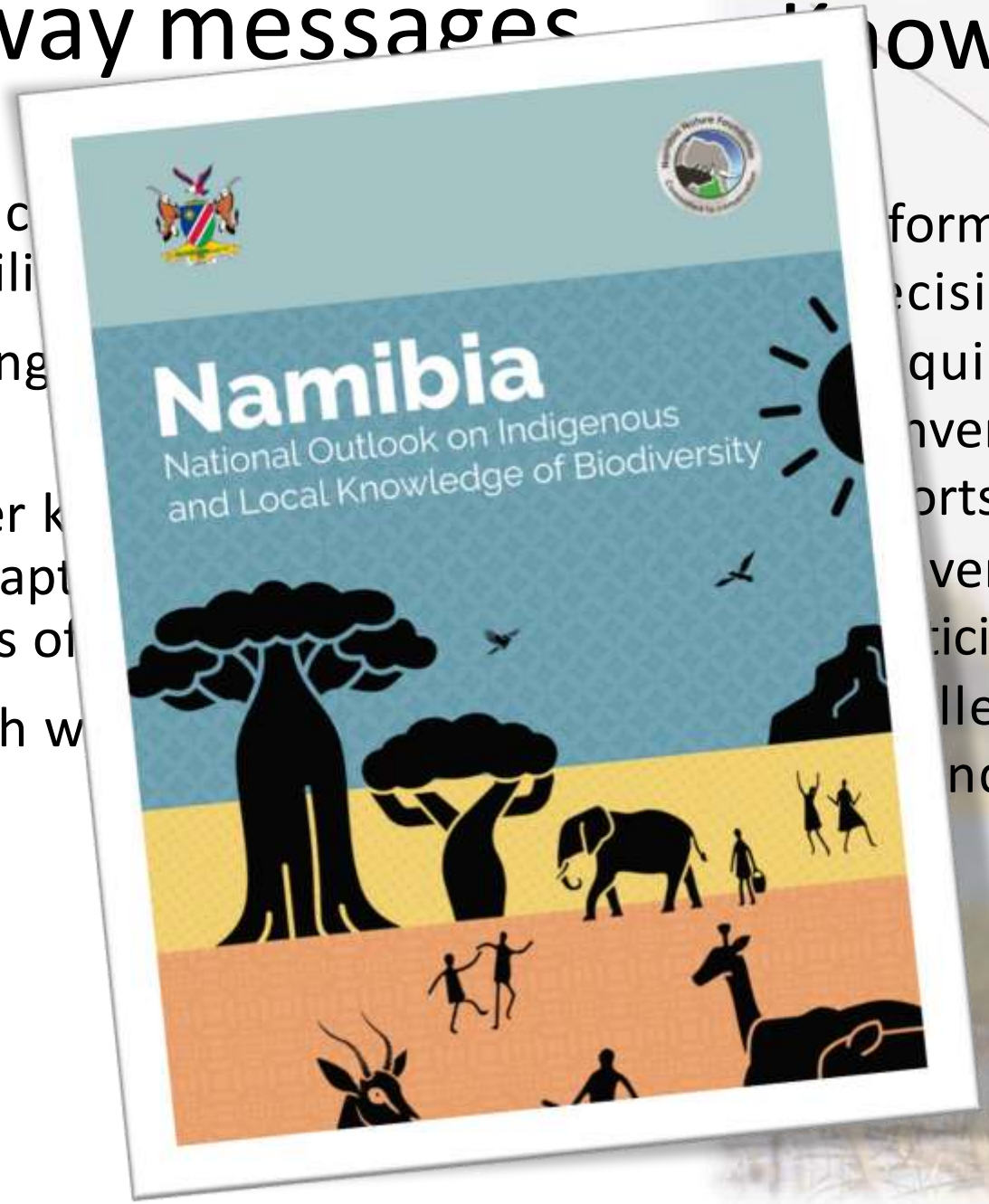
Different lens. Same topic





Take away messages … nowledge exchange

- learn from and with c … form policies and take better adapt and build resili … ecision-makers with broad buy-in
- Value of documenting … quires knowledge brokers and sensitive process … nvening power
- TK to build a broader k … orts to facilitate eye-to-eye learn and inform adapt … versation for equitable and improve models of … ticipation
- Scientist to research w … llenge: technical integration of people … nd engagement of political



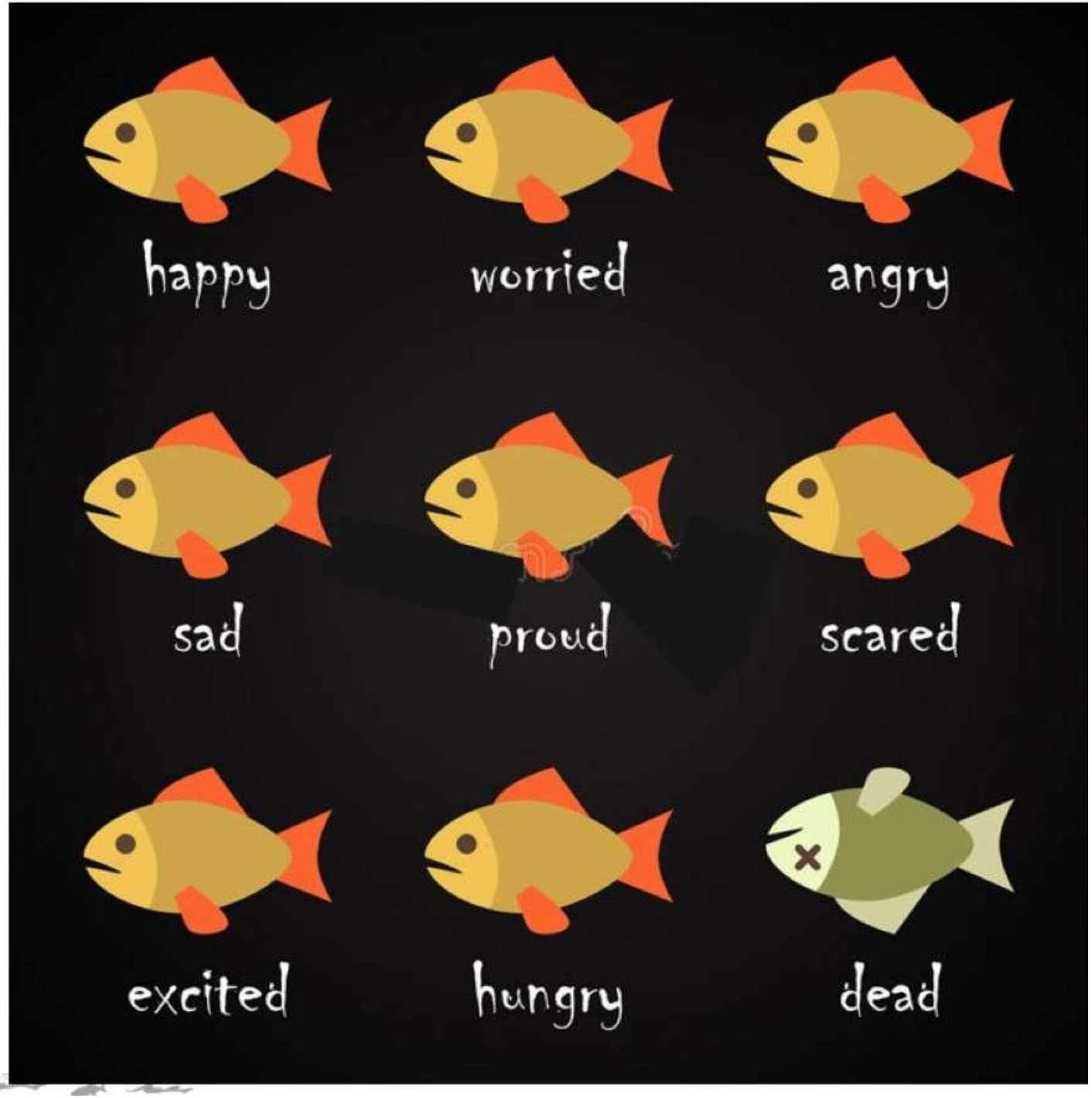
\....*YKAZA* Freshwater Fisheries Symposium

- February 2027



Fish language

- www.nnf.org.na
- bh@nnf.org.na



ZAMCOM

Connecting Shared Waters, Ecosystems & Livelihoods

Advancing Sustainable Fisheries Through Regional Cooperation

Felix Ngamlagosi | Executive Secretary, ZAMCOM

SADC TFCAs Programme Annual Network Meeting 2026 |

Skukuza, South Africa |12 November 2026

win-win coopera,on / cooperacao, ganhas tu, ganho eu

Zambezi Watercourse: Key Features

ZAMCOM

4th Largest River in Africa

2,700 km long; approximately 1.37 million km²

8 Riparian States

Shared Water Resources & Regional Cooperation

13 sub-watercourses

Hydrologically and Ecologically Interconnected

51+ Million People

Livelihoods & Economies Depend on Basin Resources

SHARED BASIN OPPORTUNITIES

Fisheries & Aquaculture

Sustainable Resource Base

Hydropower

Multipurpose Water Use

Water Supply

Communities & Industry

Ecosystems & Tourism

Biodiversity & Ecotourism





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ZAMCOM – Who are We?

01 ESTABLISHMENT

ZAMCOM Agreement (2004) Anchored to the Revised SADC Protocol on Shared Watercourses (2000)

02 SHARED MANDATE

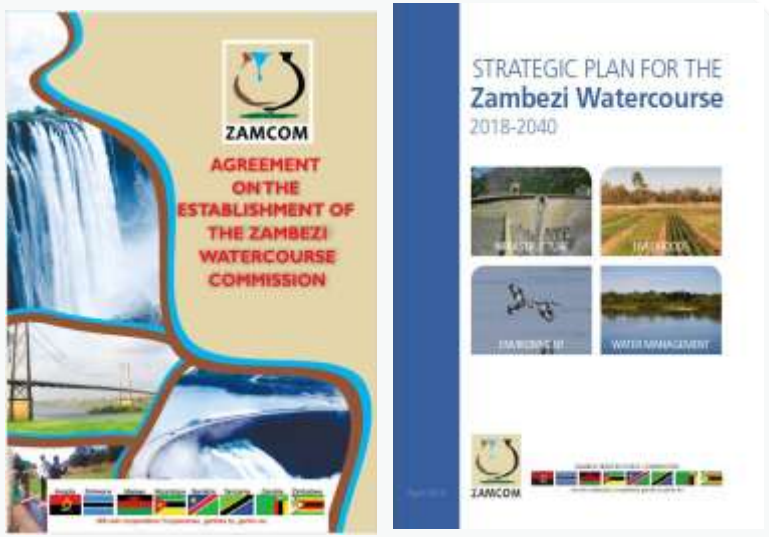
Equitable & Reasonable Utilisation, Efficient Management & Sustainable Development

03 STRATEGIC DIRECTION

Zambezi Strategic Plan 2018–2040 Guides Basin Priorities & Cooperation

04 PARTNERSHIP DELIVERY

Joint Planning, Capacity Building, Resource Mobilisation & Information Exchange



Foundational Documents Guiding ZAMCOM

WATER RESOURCES MANAGEMENT → HEALTHY AQUATIC ECOSYSTEMS → RESILIENT LIVELIHOODS

An Enabling Foundation For Sustainable Fisheries Across Shared Waters in The Zambezi Basin

ZAMCOM's Role in Sustainable Fisheries & Aquatic Ecosystem Management

ZAMCOM

ZSP Pillars/ZAMCOM Focus Areas

PILLAR 1
Infrastructure investment

PILLAR 2
Livelihood support

PILLAR 3
Environmental Resources Protection

PILLAR 4
Water Resources Management

WATER RESOURCES

Water Information Systems, Environmental Flows & Transboundary Planning **(PIDACC / BREFOLE-ZRB)**

ECOSYSTEMS

Catchment & Wetland Restoration, Biodiversity & Aquatic Ecosystem Protection **(PIDACC / BREFOLE-ZRB)**

FISHERIES GOVERNANCE

Regional Fisheries Management Plans & Policy Harmonisation **(Proposed under ZIRWA)**

CLIMATE-SMART LIVELIHOODS

Climate-smart Agriculture, Early Warning & Resilient Livelihoods **(PIDACC / BREFOLE-ZRB)**



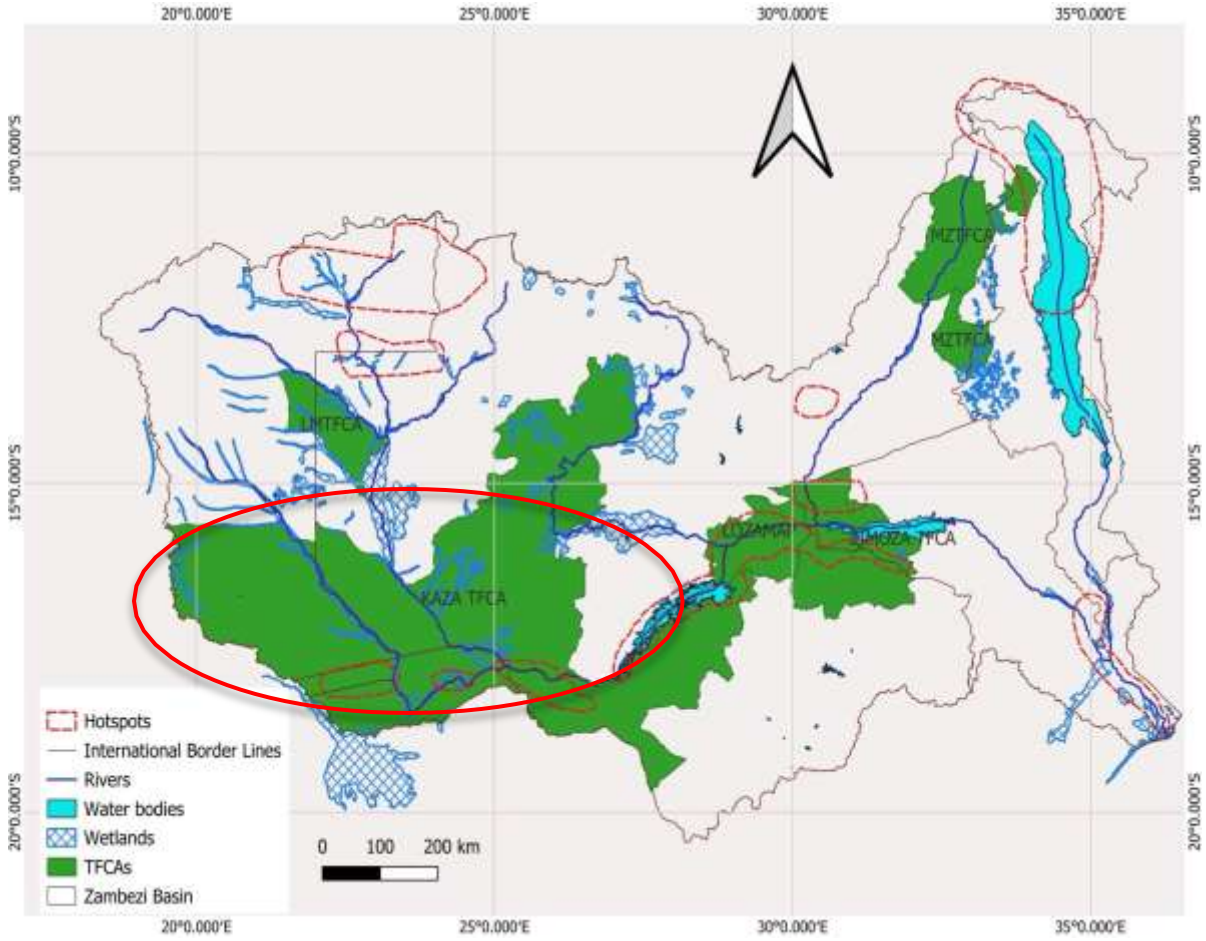
TFCAs in the Zambezi Watercourse

ZAMCOM

Six Transfrontier Conservation Areas

Kavango Zambezi (KAZA TFCA)
Formal ZAMCOM MoU

- **ZIMOZA TFCA**
  Zimbabwe, Mozambique and Zambia
- **Nyika–North Luangwa TFCA**
  Malawi–Zambia TFCA (MZTFCA)
- **Kasungu–Lukusuzi TFCA**
  Malawi–Zambia TFCA (MZTFCA)
- **Lower Zambezi–Mana Pools TFCA (LOZAMAP)**
  Zambia and Zimbabwe
- **Liuwa Plains–Mussuma TFCA (LMTFCA)**
  Angola and Zambia



TFCA Landscapes & Water Systems Across the Basin

ZAMCOM–KAZA: A Formal Cooperation Framework

ZAMCOM

MoU Signed 17 October 2024

FIVE PARTNER STATES

Angola • Botswana • Namibia • Zambia • Zimbabwe

SHARED PURPOSE

Equitable & Reasonable Use of Zambezi Watercourse Resources; Efficient Management & Sustainable Development

JOINT PROJECTS

Develop Projects with Indicative Budgets, Operational Plans & Potential Funding Sources

CONTINUOUS COOPERATION

Share Data & Skills; Prepare Joint Annual Workplans & Continuous Review Progress



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Complementary Mandates, One Landscape

ZAMCOM

Link Watercourse Governance With Biodiversity, Habitat & Livelihoods

ZAMCOM

Basin-wide Water Planning; Water Allocation; Water Information; Environmental Flows; Climate Resilience

+

KAZA TFCA

Cross-border Conservation; Habitat & Landscape Management; Nature-based Tourism

→

SHARED BENEFITS

Healthy wetlands and aquatic habitats underpin biodiversity, livelihoods and sustainable inland fisheries



Cuando / Kwando: Technical Results

ZAMCOM

Joint Activities Undertaken

BASIN KNOWLEDGE

Kwando River Basin Health Report Card
And State of the Basin Report

CAPACITY BUILDING

Stakeholder Training and Institutional Strengthening

JOINT DIA

Kwando Joint Actic
Transboundar

PLANNING P

IWRM Plan, Environment
Strategic Environmental As
Work Were Unde



What the ZAMCOM–KAZA Partnership Means for Fisheries

ZAMCOM

Opportunities to Translate Basin & Landscape Cooperation Into Aquatic Ecosystem Outcomes

INFORMATION FOR SUTAINABILITY

Share Hydrological, Climatic, Water-quality, Habitat & Fisheries-related Information, Subject to Agreed Data Protocols

ALIGN PLANNING

Integrate Environmental Flows & Aquatic Habitat Needs Into Catchments & TFCA

STAKEHOLDERS ENGAGEMENT

Stakeholder's Engagements & Traditional Knowledge in Conservation & Livelihoods Planning

DEVELOP JOINT PROJECTS

Identify Restoration, Monitoring & Resilience Concepts/Proposals For Joint Preparation & Resource Mobilisation

Enhance Enabling Environment for Sustainable Fisheries

win-win cooperation / cooperacao, ganhas tu, ganho eu

Existing ZAMCOM Programmes

ZAMCOM

PIDACC Zambezi Zone I

RESTORE Catchment Restoration & Integrated Landscape Management

PRODUCE Climate-smart Agriculture & Resilient Value Chains

PROTECT Flood & Drought Early-warning Systems

PROSPER Livelihood Diversification & Resilient Infrastructure

Support Enabling Environment for Sustainable Fisheries Production



Ulongwe community Farm in Angonia, Mozambique: Climate-smart Agriculture Supported by the AfDB's Technologies for African Agricultural Transformation (TAAT) Programme

Existing Programmes & Investment Preparation

ZAMCOM

BREFOLE-ZRB / NPC Investment Plan

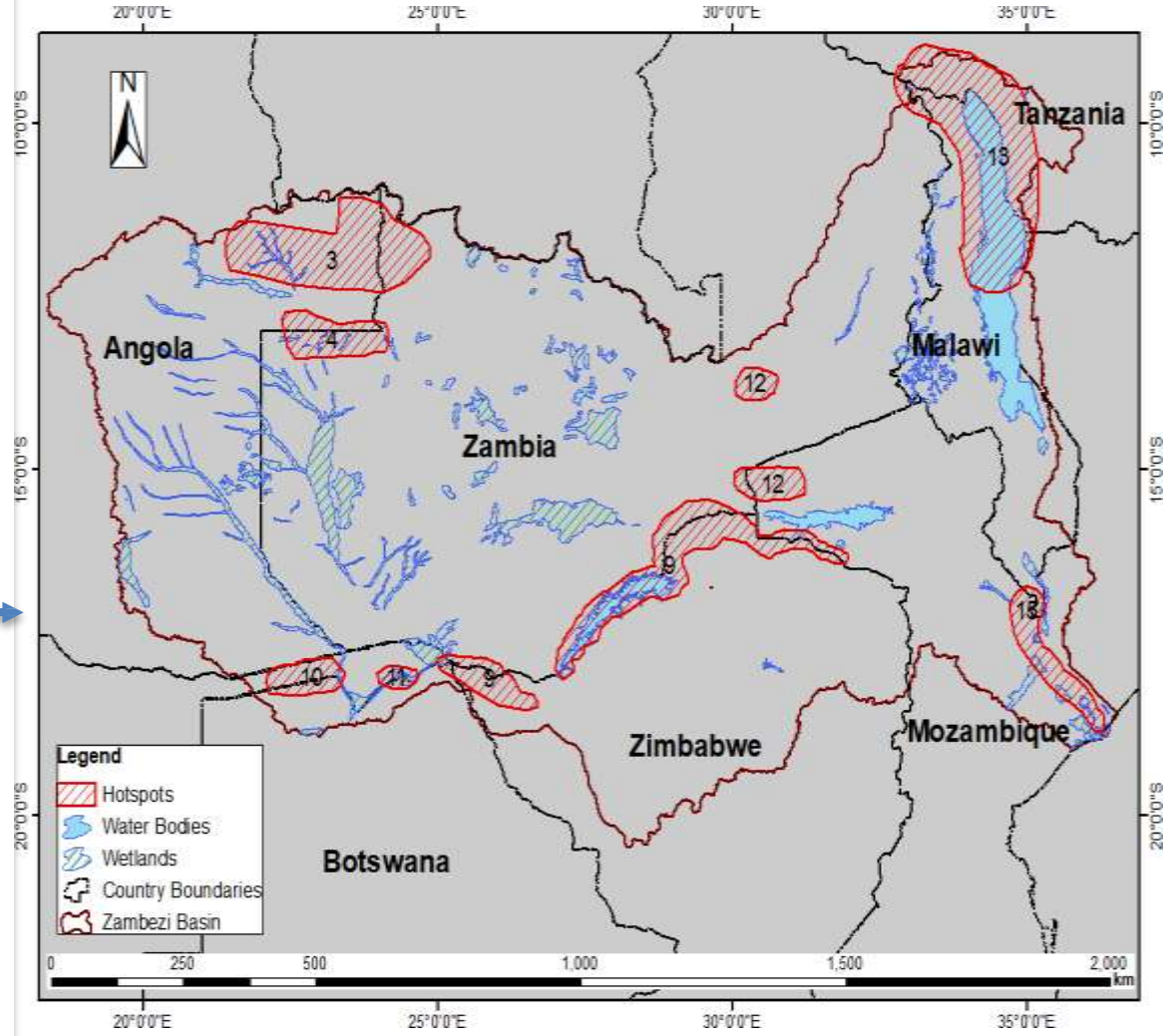
≈1.7m ha
Climate Resilience Target

>2.3m
People Expected To Benefit

- Ecosystem Restoration
- Integrated Water Resources Management
- Climate-smart Livelihoods

→ Priority Transboundary Hotspots

Supports Sustainable Fisheries Through Ecosystem Health



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Other ZAMCOM Existing Projects

ZAMCOM

WORLD BANK / MSIOA

Joint Lake Kariba Kapenta Fishery Management Plan; Enhance Transboundary Governance

EU ZIRWA

Proposed Fisheries management Plans/Policy Harmonisation; Water Information System & Ecosystem Management

SWEDFUND / WATER STORAGE

Pre-feasibility Studies For Multipurpose Dams (E.g., West Lunga) Prepare Investments for Fisheries Production

GEF-FUNDED PROJECT

Integrated Basin & Aquatic Ecosystem Management Through the Water–Energy–Food–Ecosystems Nexus



win-win coopera,on / cooperacao, ganhas tu, ganho eu

Partnerships/Support & Investment Needs

ZAMCOM

Priority Gaps to Advance Sustainable Fisheries-enabling Investments in the Zambezi Watercourse

REGIONAL GOVERNANCE

Harmonise Fisheries Plans, Policies & Protocols; Strengthen Cross-border Coordination

TECHNICAL EVIDENCE

Aquatic Biodiversity & Fish Habitat Assessments; Water Quality Analysis & Monitoring

PROJECT READINESS

Feasibility, Detailed Designs, Esias & Financial Structuring of Fisheries Investment

PRIORITY REQUEST: PROJECT PREPARATION GRANTS

Advance Fisheries-enabling Multipurpose Investments & Credible Pipeline of Bankable Projects (E.g., West Lunga) & Fisheries-related Investment Concept Notes



win-win coopera,on / cooperacao, ganhas tu, ganho eu

ZAMCOM

Thank you/Obrigado!



Magnificent Aerial View of Victoria Falls at Zambia / Zimbabwe Border

win-win cooperation / cooperacao, ganhas tu, ganho eu



Joint Fisheries Management: The Lake Kariba Experience

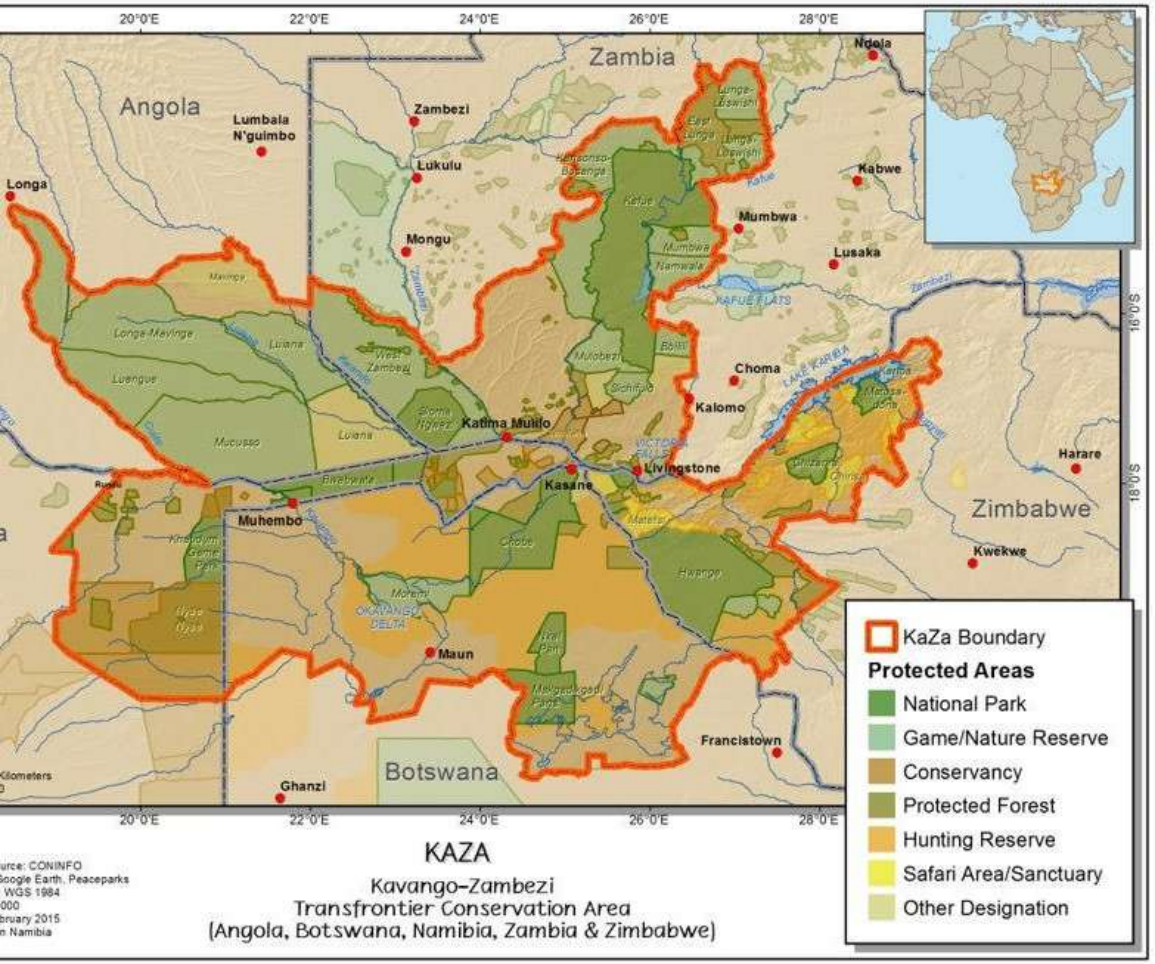
SADC TFCA side-event 12 November

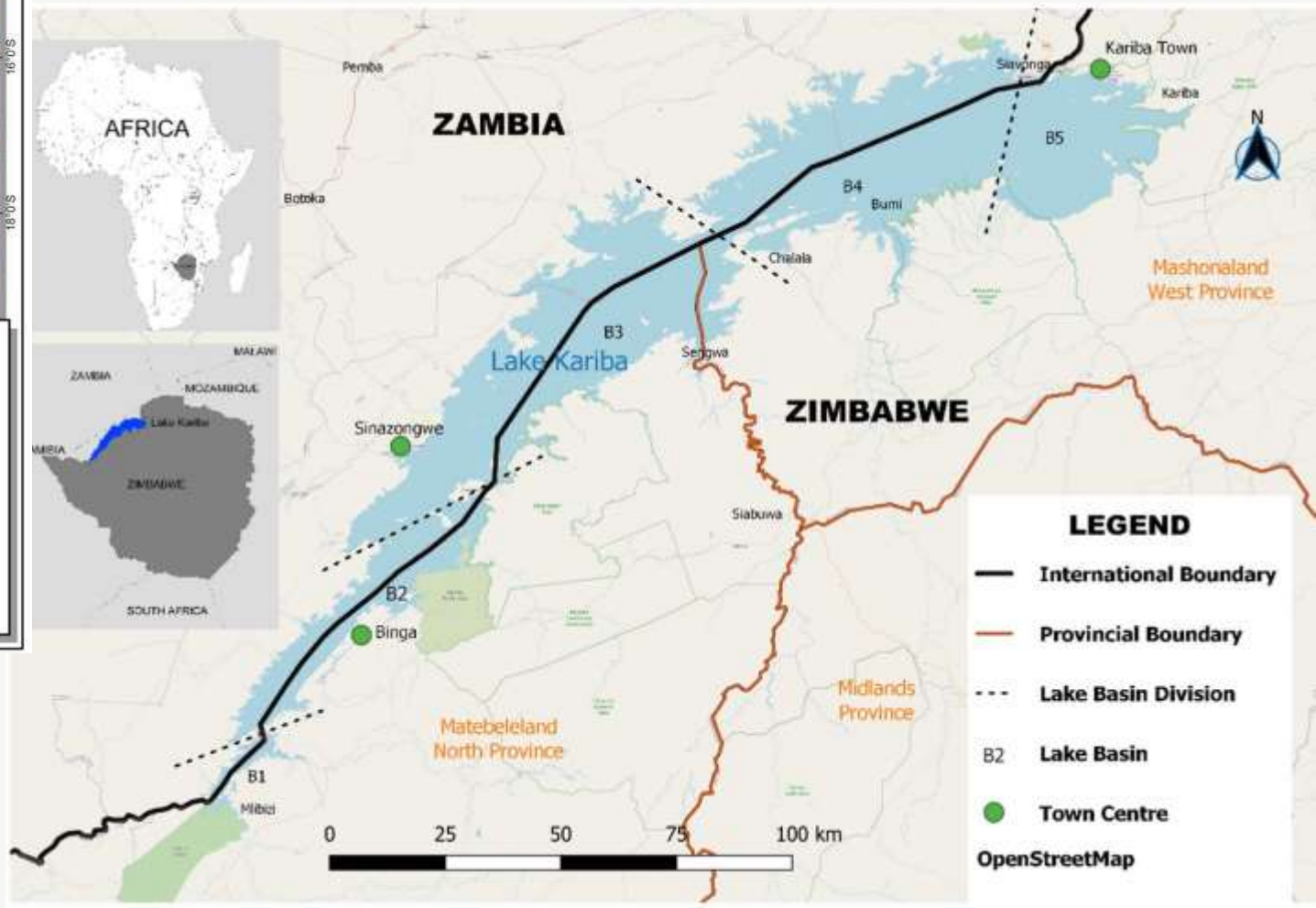
Freshwater Transboundary Fisheries Management: Exploring indigenous knowledge and best practices for transboundary fisheries management as well as the role of aquaculture in SADC TFCAs



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Lake Kariba


Angola
Zambia
Zimbabwe
Botswana
Namibia
Lumbala N'guimbo
Zambezi
Lukulu
Mongu
Ndola
Kabwe
Mumbwa
Lusaka
Choma
Kalomo
Livingstone
Kasane
Katima Mulilo
Muhembo
Maun
Ghanzi
Francistown
Harare
Kwekwe
Longa
KaZa Boundary
Protected Areas
National Park
Game/Nature Reserve
Conservancy
Protected Forest
Hunting Reserve
Safari Area/Sanctuary
Other Designation
KAZA
Kavango–Zambezi
Transfrontier Conservation Area
(Angola, Botswana, Namibia, Zambia & Zimbabwe)


AFRICA
ZAMBIA
ZIMBABWE
Kariba Town
Kariba
Siavonga
Pemba
Boboka
Bumi
Chalala
Sengwa
Sinazongwe
Siabuwa
Binga
Lake Kariba
B1
B2
B3
B4
B5
Mashonaland West Province
Midlands Province
Matebeleland North Province
N
0
25
50
75
100 km
LEGEND
International Boundary
Provincial Boundary
Lake Basin Division
Lake Basin
Town Centre
OpenStreetMap

TRANSBOUNDARY FISHERIES MANAGEMENT - LAKE KARIBA

Lake Kariba's $92M Value Chain Requires Bilateral Governance Across Shared Waters

5,580 km²

SHARED LAKE SURFACE

Zambia: 45% | Zimbabwe: 55%

World's largest artificial lake by volume

$92 Million

TOTAL VALUE CHAIN

$53M ex-vessel turnover

Kapenta pelagic + inshore artisanal

25,000 Jobs

DIRECT & INDIRECT EMPLOYMENT

3M+ basin population supported

Critical protein source for SADC

Ecological & Biological Realities

- Transboundary Migration: Mobile stocks move freely across national borders in response to thermal currents.
- High Productivity & Sensitivity: Fecund stock yielding up to 60 kg/ha; highly sensitive to nutrient inflows and lake level drops.

Why Transboundary Governance is Essential

- **Unilateral Action Fails: Overcapacity or lax enforcement on one shoreline immediately depletes the shared pelagic stock.**
- **Substantial Revenue Impact: Generates over $730,000 annually in government rig licensing fees across both nations.**
- **Socio-Economic Anchor: Provides vital animal protein (35% of Zambia's capture fish, 90% of Zimbabwe's total fish supply).**

Bilateral Cooperation Evolved Over 35 Years From Projects to Treaty-Based Strategy

1990

Zambia/Zimbabwe SADC Project

ZZSFP launched with DANIDA/NORAD support; established baseline hydro-acoustic & bioeconomic stock models.

Nov 26, 1999

Bilateral Kariba Protocol

Signed in Kariba; created permanent legal framework, 6-member Technical Committee & surface-area effort rights.

Nov 2002

1st Technical Consultation

Inaugurated FAO-supported technical consultations in Siavonga to align scientific data and operational rules. The 9th Technical consultation held in 2022.

2024–2036

Blue Economy Strategy & FMP

African Development Bank (AfDB) funded 10-year Blue Economy Strategy and Investment Plan

With the support of ZAMOCO and ZRA, the World Bank funding the Joint Kapenta FMP.

Bilateral Genesis: The Zambia-Zimbabwe SADC Fisheries Project (ZZSFP)

ZZSFP Profile & Research Framework (1988–1997)

- **Origin & Donors:** Initiated under SADC in 1988 (Phase 1: 1990–1997) with ~55M NOK funding from NORAD & DANIDA.
- **Core Mission:** Establish a scientific research foundation for joint management of shared Kapenta & artisanal inshore fisheries.
- **Infrastructure & Data:** Upgraded research stations (LKFRI Kariba & DoF Sinazongwe), deployed R/V Lymnothrissa, and instituted the Catch Effort Data Recording System (CEDRS).
- **First Bio-Economic Model (1997):** Estimated Kapenta MSY at 25,000 tonnes and recommended a strict lake-wide limit of 500 rigs (230 Zambia / 270 Zimbabwe).

Zambia/Zimbabwe SADC Project

ZZSFP launched with DANIDA/NORAD support; established baseline hydro-acoustic & bioeconomic stock models.

The 1999 Kariba Protocol Economic and Technical Co-operation Establishes Statutory Authority for Shared Management

Institutional Governance (Articles 2–4)

- Establishes 6-member Joint Technical Committee (3 per country) meeting annually.
- Mandated to oversee management, exotic species control, and biological data exchange.
- Authorized under Article 4(2) to make binding decisions on fishing effort control.

Effort Entitlement & Area (Article 6)

- Codifies the foundational legal principle for effort allocation on Lake Kariba.
- Effort entitlement is shared strictly in proportion to surface area (45% Zambia / 55% Zimbabwe).
- Prevents unilateral expansion beyond designated surface rights.

Cross-Border Operations (Articles 8 & 11)

- Mandates joint surveillance, law enforcement, and review of fishing regulations.
- Guarantees easy movement of personnel, vehicles, equipment, and patrol vessels across borders.
- Article 14 establishes amicable dispute settlement via Joint Commission of Co-operation.

TRANSBOUNDARY FISHERIES MANAGEMENT - LAKE KARIBA

The Technical Consultations Mechanism: Bilateral Dialogue & Basin Alignment

Institutional Setup & Frequency

- **Operationalizing Article 2 of 1999 Protocol:**

  Facilitated by FAO Subregional Office for Southern Africa (SFS) biennially (every 2 years) since November 2002.

- **Alternate Hosting & Multilateral Expansion:**

  Rotates between Zambia and Zimbabwe. Expanded since 7th Consultation to include Mozambique (Cahora Bassa) and Malawi for wider regional alignment.

- **Stakeholder Inclusion:**

  Brings together fisheries departments (DoF Zambia, LKFRI/ZPWMA Zimbabwe), research institutions, and producer associations (KFA, KAMIDA, ZKPA).

- **Steering Function:**

  Evaluates past recommendations, standardizes monitoring protocols, and prepares technical proposals for Ministerial adoption.

Core Technical Coverage Areas

- Pelagic Kapenta & Fleet Control: Rig numbers, MSY/MEY bioeconomic targets, and net mesh sizes.
- Artisanal Fisheries & Gear Bans: Frame surveys, gillnet limits, and monofilament net bans.
- Aquaculture & Animal Health: Carrying capacity, cage culture zoning, and joint disease surveillance.
- MCS & Pilferage Control: Joint VMS tracking, frame surveys, and curbing night-time illegal trading.

Milestones

- Catch recording standardization, and early Kapenta rig quotas.
- Full moon stoppage, fishing effort reduction from an average of 30 nights a month to 22 nights per month. 23% reduction in fishing effort. Two-fold increase in CPUE in 2015 from 88kg/rig/night to 188kg/rig/night in Basin 5.
- Patrols and monitoring
- Strides towards adopting a Vessel monitoring system
- Bioeconomic survey (2010)
- Joint (Zimbabwe and Zambia) hydro-acoustic survey was conducted in 2014

The Technical Consultations: Asymmetries in Governance

	Zambia	Zimbabwe
Licensing Authority	Local District Councils & Dept. of Fisheries	ZIMPARKS
Enforcement Capability	Severe lack of resources and patrol boats; reliance on local police.	Strong paramilitary ranger presence and impoundment penalties.
Lunar Closures (Effort Reduction)	10-day full moon fishing break.	7-day full moon fishing break.
Producer Representation	Fragmented associations lacking enforcement cohesion.	Unified Zimbabwean Kapenta Producer's Association (ZKPA) covering 75% of owners.

The PROFISHBLUE Project: Catalysing Regional Governance & Blue Economy Transformation

Program Identity & Funders

- Official Name: Multinational Program for Improving Fisheries Governance & Blue Economy Trade Corridors in SADC (PROFISHBLUE).
- Primary Funder: African Development Bank (AfDB) under African Development Fund (ADF-15) Regional Operations Window.
- Regional Leadership: Owned by Governments of Zambia & Zimbabwe; coordinated by SADC Secretariat.
- Technical Partner: Food & Agriculture Organization (FAO) under 2023 MoU.

Core Objectives & Scope

- Regional Reach: Covers 16 SADC states to promote sustainable fisheries, food security, & trade corridors.
- Climate Resilience: Enhances adaptive capacity of aquatic value chains against climate & external shocks.
- Poverty & Employment: Drives inclusive growth, youth/women empowerment, & smallholder integration.
- SADC Integration: Aligns with SADC RISDP (2020-2030) & Africa Blue Economy Strategy.

Key Deliverables for Kariba

- Blue Economy Strategy: Co-developed the shared 2024-2036 Blue Economy Strategy across 4 strategic pillars.
- Investment Plan (BEIP): Formulated the 10-year, $35M Investment Plan (2026-2035) to attract public/private capital.

The Resolution: The Lake Kariba Blue Economy Framework

The Lake Kariba Blue Economy Strategy

1. Lake Kariba Governance

Establishing a bilateral framework, collective water management, and joint aquatic resource enforcement.

2. Climate & Biodiversity Resilience

Biodiversity restoration, water-level adaptation, and nature-based loss/damage anticipation.

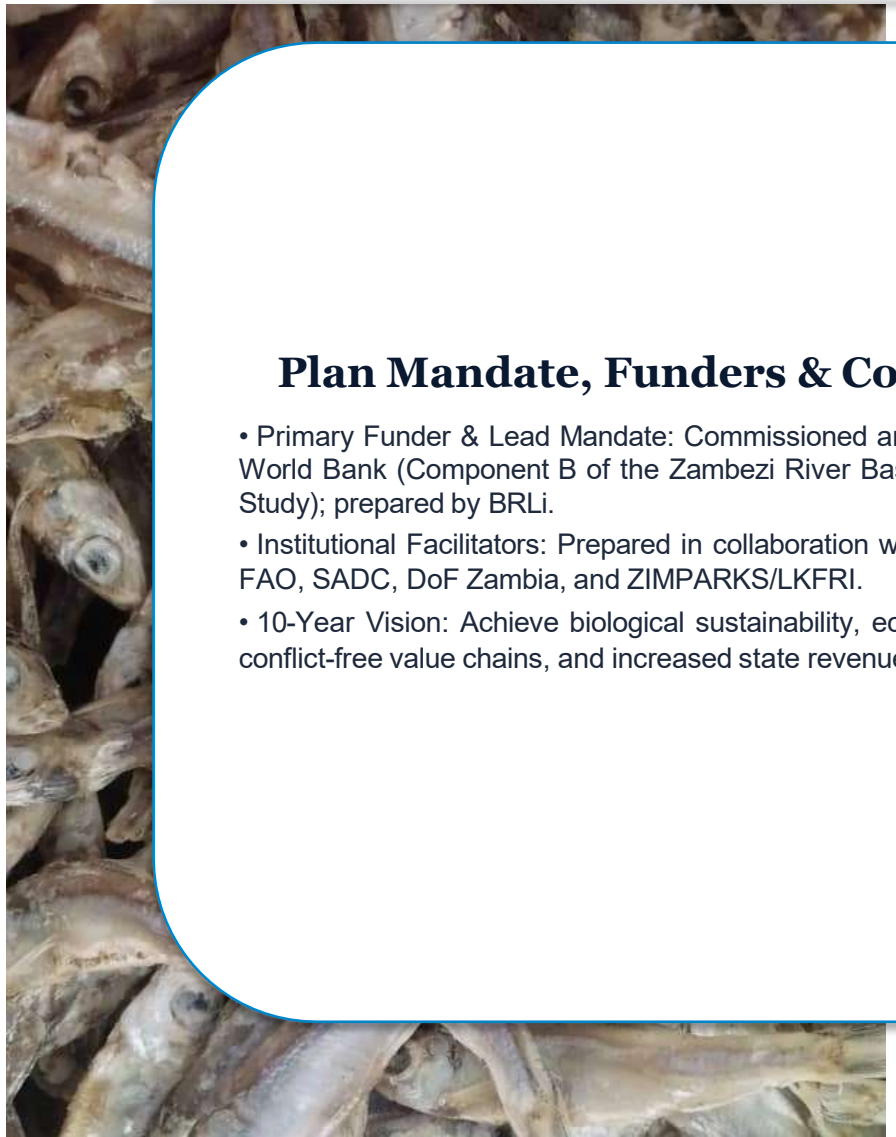
3. Fishery & Aquaculture Co-viability

Ensuring capture fishery sustainability alongside regenerative, multi-trophic aquaculture diversification.

4. Transversal Support

Joint hydro-acoustic research, regional capacity building, spatial/temporal planning, and shared VMS tracking.

Joint Kapenta Fishery Management Plan: Funders, Outputs & Action Plan



Plan Mandate, Funders & Core Targets

- Primary Funder & Lead Mandate: Commissioned and funded by the World Bank (Component B of the Zambezi River Basin Development Study); prepared by BRLi.
- Institutional Facilitators: Prepared in collaboration with ZAMCOM, ZRA, FAO, SADC, DoF Zambia, and ZIMPARKS/LKFRI.
- 10-Year Vision: Achieve biological sustainability, economic profitability, conflict-free value chains, and increased state revenues.

5-Year Action Plan (6 Priority Action Areas)

- Area 1: Control of Fishing Capacity — Public legalisation campaigns.
- Area 2: Regulatory Enforcement & MCS —strengthen joint patrols.
- Area 3: Data Collection & Research — Joint lake-wide frame surveys; mobile app catch reporting; standardized DoF-LKFRI data exchange.
- Area 4: Co-Management & Association Empowerment — Capacity building for producer associations (KFA, KAMIDA, ZKPA);
- Area 5: Bilateral Fisheries Cooperation —maintain Technical Consultations and related engagements.
- Area 6: Monitoring & Evaluation — Mid-term evaluation in Year 3; comprehensive plan revision in Year 5.

Joint Kapenta Fishery Management Plan: Vision

Shared Vision Statement

"A sustainable, resilient, and jointly managed kapenta fishery that secures livelihoods, strengthens food security, and conserves Lake Kariba's ecosystem for future generations."

Key Elements of the Vision

- **Sustainability:** Maintain kapenta stocks within the *Maximum Sustainable Yield (MSY)* range (≈ 23 500–25 400 tons per year).
- **Resilience:** Adapt fishing practices to climate variability — protect breeding areas, monitor lake temperature, and manage effort.
- **Joint Governance:** Zambia and Zimbabwe to coordinate policy, licensing, and enforcement through a **Joint Fisheries Management Committee (JFMC)**.
- **Economic Viability:** Ensure fair market access and profitability for fishers while promoting value-addition and local processing.
- **Community Empowerment:** Strengthen fishers' associations (KFA & ZKPA) and encourage inclusive participation of women and youth.
- **Environmental Integrity:** Safeguard water quality, biodiversity, and nutrient inflows from tributaries to sustain lake productivity.
- **Knowledge and Innovation:** Use joint research (LKFRI & DoF) and hydro-acoustic monitoring to guide adaptive management decisions.

Joint Kapenta FMP Guiding Principles

Principle	What it means in practice
One stock, one plan	Kapenta move across the whole lake; effort on either shore affects both. Measures are agreed and applied jointly.
Science-based effort control	Effort is set and reviewed on stock assessment and monitoring, not on rig numbers alone (effort rose 30.2% under Zimbabwe's moratorium).
Fair shares under the Protocol	Effort is allocated according to Article 6 of the 1999 Protocol (55% Zimbabwe, 45% Zambia). The current split is 25.9% to 74.1% of 1,770 licensed rigs.
Protect the legal fisher	Compliant operators are not disadvantaged by illegal effort; enforcement is fair, consistent and visible on both shores.
Harmonised rules	Common rules for stoppages, vessel registration and marking, basins and penalties, so that gaps between the two systems cannot be exploited.
Transparency and shared data	Complete catch and effort returns, a common vessel register and regular data exchange between the two countries.
Co-management and participation	Operators, fishers, local authorities and communities take part in decisions and share responsibility, including self-regulation.
Precaution in a changing climate	Lake level has fallen 3.2 m over the record and conditions are warming; measures allow for this uncertainty.
Whole-of-government	Fisheries, immigration, police, maritime and local authorities act together on compliance and community welfare.

Uniting Waters, Sustaining Livelihoods: The Kariba Experience

Thank you



Rural Aquaculture for Livelihood Diversification

Investment, community empowerment and collaborative conservation of shared water bodies

Georgina Simusonkwe Chibbamulilo
Small Scale Fisheries – AWFISHNET-Zambia
SADC TFCA side-event · 12 November

Discussion focus

Investment in the 3Fs sits at the centre of rural aquaculture development.

Fingerlings · Fish feed · Finance

Connected with:

- Capacity building
- Market access
- Community participation
- Indigenous knowledge
- Conservation of shared water bodies

THE ME Title: investment, community empowerment and collaborative conservation.

ROADMAP

Nine priorities for discussion

1. Invest in the 3Fs
2. Capacity building and financial literacy
3. Road and market access
4. Rural experiences and empowerment
5. Diversification through local alternatives
6. Co-management structures
7. Conservation, restocking and legal frameworks
8. Indigenous knowledge
9. Research and development

PRIORITY 1

Investment in the 3Fs

Fingerlings

Access to high-quality fingerlings.

Fish feed

Access to high-quality fish feed.

Finance

Access to finance to establish, operate and sustain aquaculture activities.

KEY MESSAGE Provision and proper management must go hand in hand: link investment to the skills and accountability to manage inputs and money.

PRIORITY 2

Capacity building and financial literacy

3Fs addressed

Fingerlings, feed and finance in place

Build capacity

Aquaculture production, enterprise management, financial literacy

Communities manage

Activities and resources managed effectively

KEY MESSAGE Once the 3Fs are addressed, prioritise capacity building so communities can run their enterprises.

PRIORITY 3

Road access and market access

Prioritise roads and markets alongside production investment, connecting rural producers with:

Input suppliers

Buyers

Opportunities to sell their fish

KEY MESSAGE Production without roads and markets leaves fish stranded.

PRIORITY 4

Rural experiences and empowerment

Scaling Up Nutrition (SUN) II · Shang'ombo

A nutrition project supporting young women with children under five through nutrition, and social and economic empowerment.

Fish cage farming · Siavonga

An experience that demonstrates livelihood diversification through cage-based aquaculture.

IN PRACTICE Two Zambian examples of empowerment and diversification in rural communities.

PRIORITY 5

Diversification through local alternatives

Aquaculture is one option

within a broader range of livelihood opportunities, not the only approach.

Livelihood diversification means pursuing alternatives that are:

- Available locally
- Appropriate to local communities
- Considered alongside aquaculture, not instead of other options

PRIORITY 6

Co-management structures

Two actions

- Strengthen co-management where it already exists
- Establish it where none is in place

Meaningful participation in

- Planning
- Decision-making
- Implementation
- Monitoring

KEY MESSAGE Communities work alongside governments and development institutions.

PRIORITY 7

Conservation, restocking and legal frameworks

CASE: LUANGWA RIVER

Concern over depleting fish species in a river shared by three countries:

Zambia | Mozambique | Zimbabwe

What is needed

- Community involvement in conserving shared water bodies, complementing governments
- Collaborative management
- Strong, aligned legal frameworks and regulations
- Conservation and alternative livelihoods
- Coordinated restocking, hinged on a legal framework

PRIORITY 8

Indigenous knowledge

At the centre of the discussion.

Communities' knowledge and experience can inform:

- **Conservation priorities**
- **Fisheries management**
- **Locally appropriate livelihood alternatives**

PRIORITY 9

Research and development

Prioritise research on small-scale actors in aquaculture and capture fisheries, covering their links to:

Livelihoods

Nutrition

Local economies

Condition of shared water bodies

This enables the region to:

- Better-informed regional decisions
- Recognition of small-scale actors' contributions
- Identify environmental and livelihood challenges
- Coordinated approaches that support community well-being while conserving shared resources

GUIDING DISCUSSION QUESTION

How can investment advance livelihood diversification and shared conservation?

Investment in high-quality fingerlings, high-quality fish feed and access to finance, supported by capacity building, infrastructure, strong co-management, indigenous knowledge and research.

Thank you.