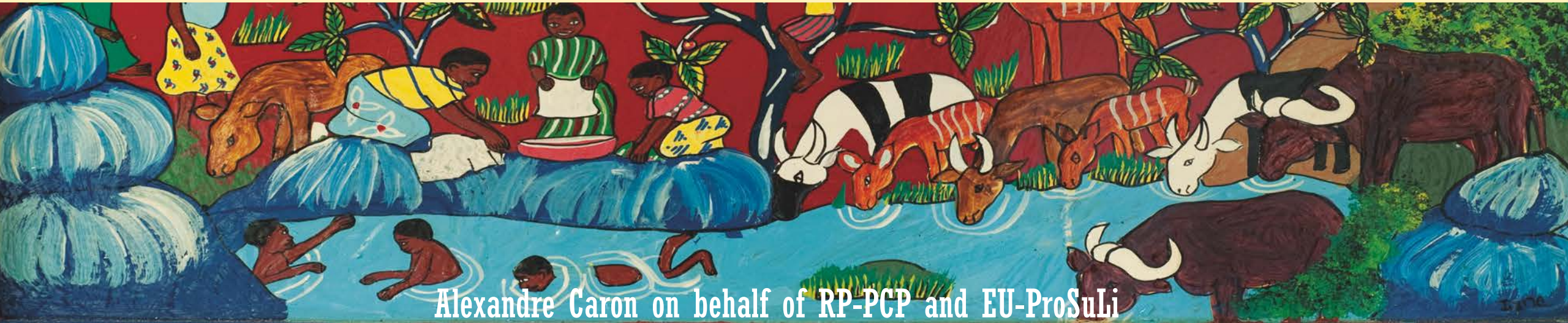


TEFCAs AS SOCIAL-ECOLOGICAL SYSTEMS

WHAT HEALTH?



Alexandre Caron on behalf of RP-PCP and EU-ProSuLi

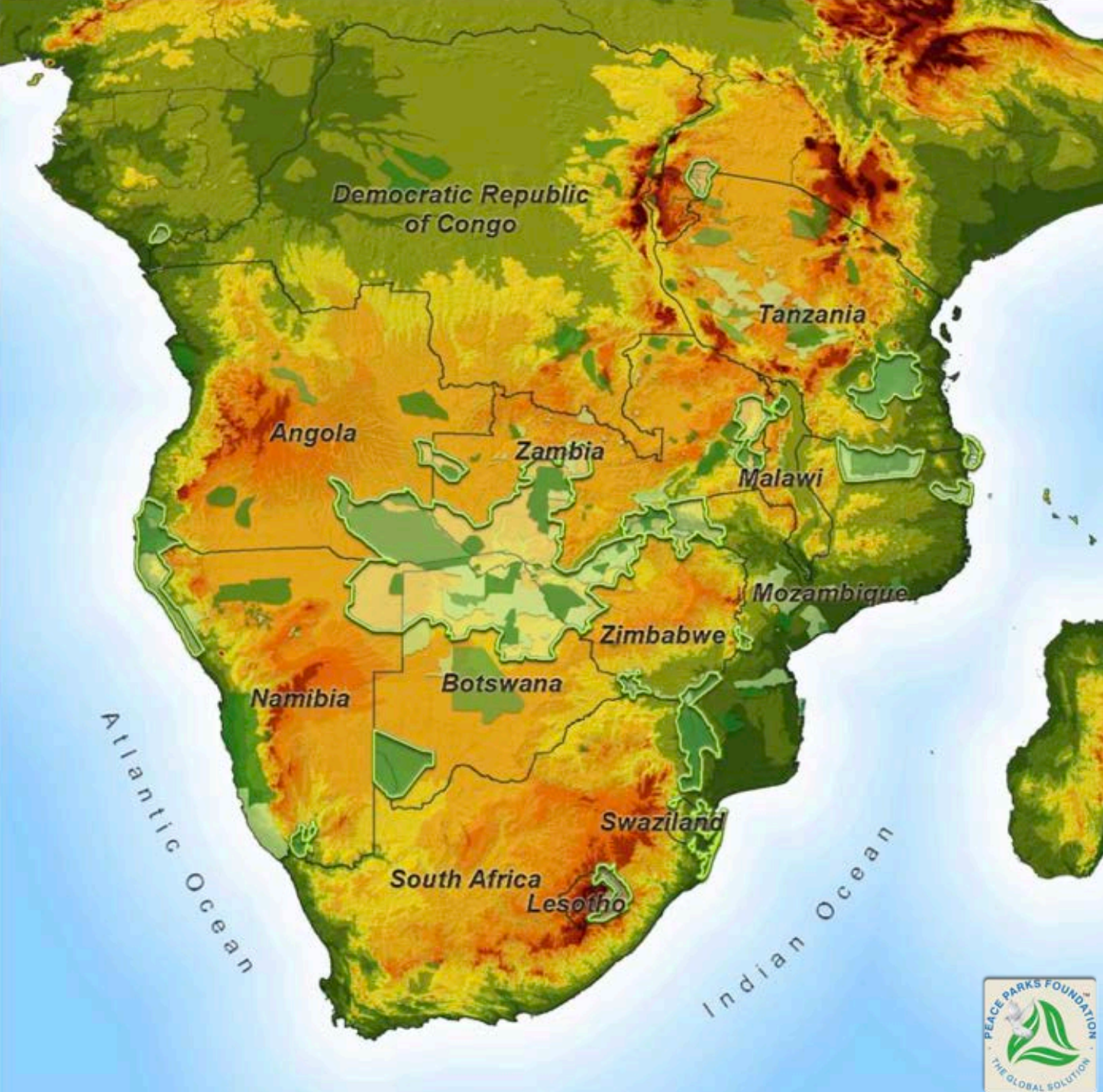
TRANSFRONTIER CONSERVATION AREAS

**...ARE NOT ONLY
CONSERVATION
INITIATIVES**

SADC WEBSITE

**TFCAS ARE FOUNDED (...) FOR
IMPROVED**

**BIODIVERSITY CONSERVATION
AND
SOCIO-ECONOMIC (*LOCAL*)
DEVELOPMENT**



- Livingstone's notebooks
- Mana Pools *Acacia albida* = human made
- Kruger nutrient hotspots = ancient kraals



COEXISTENCE BETWEEN PEOPLE & NATURE

VS.

WILDERNESS = Tourism selling point



LETTER

<https://doi.org/10.1038/s41586-018-0456-9>

Ancient herders enriched and restructured African grasslands

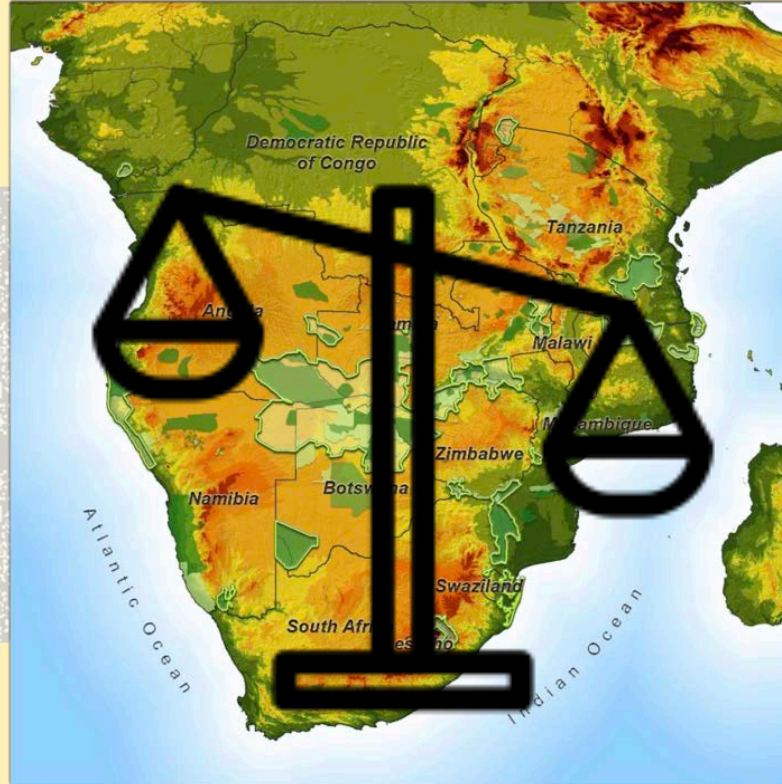
Fiona Marshall^{1*}, Rachel E. B. Reid¹, Steven Goldstein², Michael Storozum³, Andrew Wreschnig⁴, Lorraine Hu¹, Purity Kiura⁵, Ruth Shahack-Gross⁶ & Stanley H. Ambrose^{7*}

Is NP system natural without its keystone species, humans?

AFTER 20 YEARS, TFCA_s...

LOCAL DEVELOPMENT

POVERTY
FOOD SECURITY
LIVELIHOODS



**RELATIVE
UNBALANCE
CONS/DEV**

CONSERVATION

WILDLIFE POPULATIONS
ECOSYSTEM FUNCTIONING



THE (PERCEIVED) FAILURE OF CBNRM IN SOUTHERN AFRICA? (IN THE 80S'-90S')

Environment and Planning A 2010, volume 42, pages 644–660

doi:10.1068/a42140

Seeking 'telos' in the 'transfrontier'? Neoliberalism and the transcending of community conservation in Southern Africa

Bram Büscher



JOURNAL ARTICLE

From hope to crisis and back again?
A critical history of the global CBNRM narrative

WOLFRAM DRESSLER, BRAM BÜSCHER,
MICHAEL SCHOON, DAN BROCKINGTON, TANYA
HAYES, CHRISTIAN A. KULL, JAMES MCCARTHY
and KRISHNA SHRESTHA

Environmental Conservation
Vol. 37, No. 1, Thematic section. Community-based
natural resource management (CBNRM): Designing
the next generation (Part 1) (MARCH 2010), pp. 5–
15

- CBNRM = **DECENTRALIZATION** OF NATURAL RESOURCE MANAGEMENT
- ? FEW SUCCESSES, MANY FAILURES ? LOTS OF EXPERIENCES!
(E.G. ZIMBABWE FAILURE? NAMIBIA SUCCESS?)
- TFCA_s INITIATIVE AS AN OFFSHOOT OF THIS FAILURE: **RECENTRALIZATION**
PROCESS (BY THE STATE AND OTHER STAKEHOLDERS)
- CURRENT « **PARTICIPATION MISMATCH** » IN TERMS OF STAKEHOLDERS
ENGAGEMENT AND EMPOWERMENT.

THE FUTURE OF TFCAs IN SOUTHERN AFRICA?

RELATIVE UNBALANCE
CONS/DEV + PARTICIPATION
MISMATCH + MILITARIZATION
OF CONSERVATION
=

TFCAs ARE NOT INCLUSIVE,
NOT ACHIEVING DEVELOPMENT OBJECTIVES, SO
TFCAs ARE NOT SUSTAINABLE

HEALTHY TFCAs?

LANDSCAPE APPROACH

INTER-CONNECTED - INTERACTING LAND-USES

(PAs, COMMUNAL LAND, COMMERCIAL FARMS, MINES, URBAN
CENTERS ETC.)



Ten principles for a landscape approach
to reconciling agriculture, conservation,
and other competing land uses

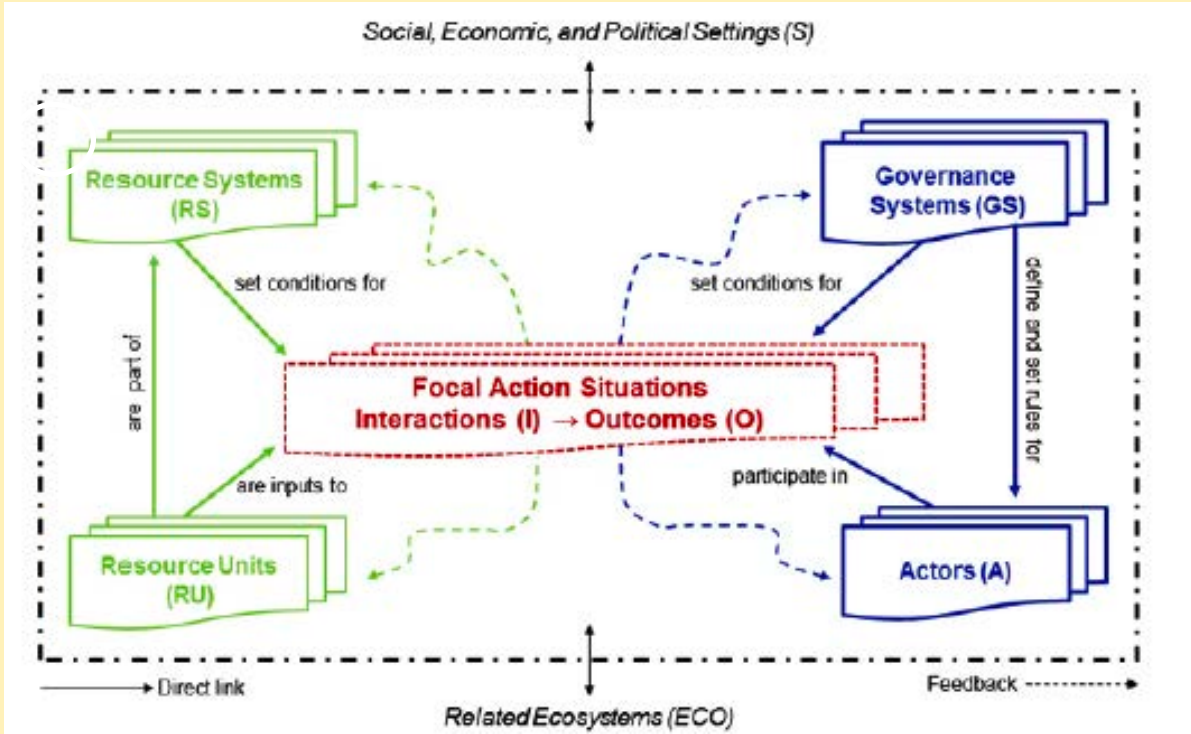
Jeffrey Sayer^{a,1}, Terry Sunderland^b, Jaboury Ghazoul^c, Jean-Laurent Pfund^d, Douglas Sheil^{b,e,f}, Erik Meijaard^{b,g,h},
Michelle Venter^a, Agni Klintuni Boedihartono^a, Michael Day^b, Claude Garcia^{b,i}, Cora van Oosten^j,
and Louise E. Buck^k

Sayer et al. PNAS, 2013

SOCIAL – ECOLOGICAL SYSTEM APPROACH

OSTROM ET AL.

Theory



- **MANAGEMENT OF COMMON-POOL RESOURCES BY ACTORS**
- **NATURAL RESOURCES DEFINITION? (WILDLIFE, WOOD, WATER, PASTURE, SOIL)**



Insight, part of a Special Feature on [A Framework for Analyzing, Comparing, and Diagnosing Social-Ecological Systems](#)

Social-ecological system framework: initial changes and continuing challenges

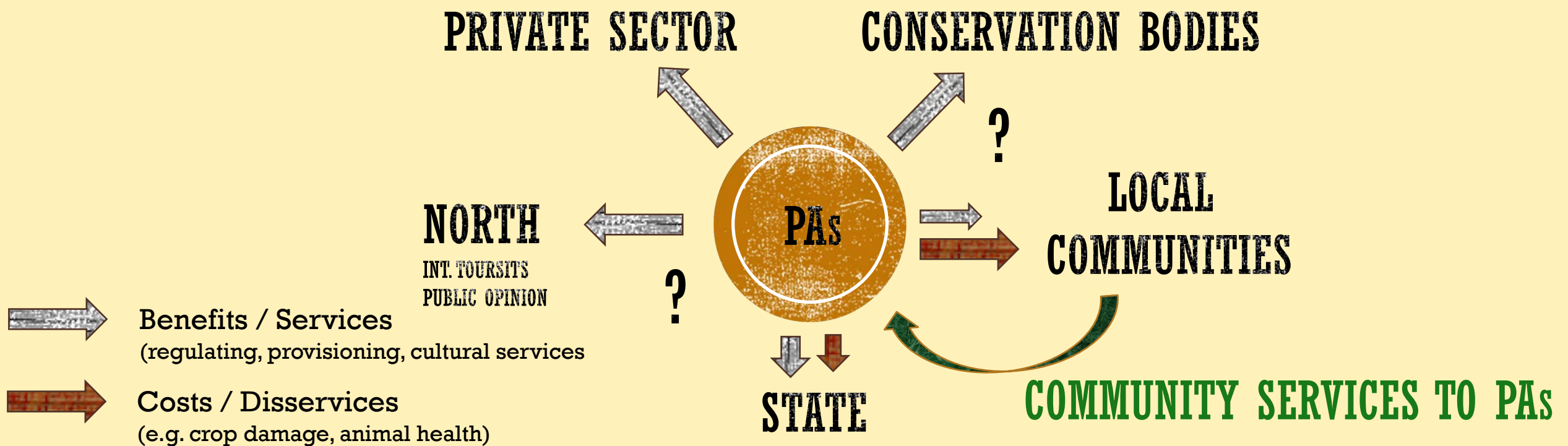
Michael D. McGinnis¹ and Elinor Ostrom¹



ECOSYSTEM SERVICES TO HUMANS APPROACH

BUT ALSO...

HUMAN SERVICES TO ECOSYSTEMS APPROACH



SOCIO-ECOLOGICAL FRAMEWORK OF ECOSYSTEM DISSERVICES AND SERVICES (SEEDS)

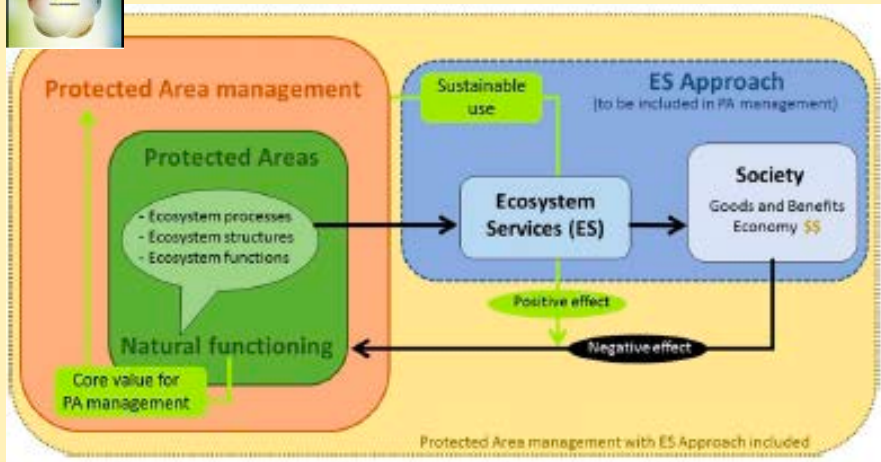
Conservation Biology 

Essay

Governing trade-offs in ecosystem services and disservices to achieve human-wildlife coexistence

Silvia Ceașu, Rose A. Graves, Alexander K. Killion, Jens-Christian Svenning, Neil H. Carter

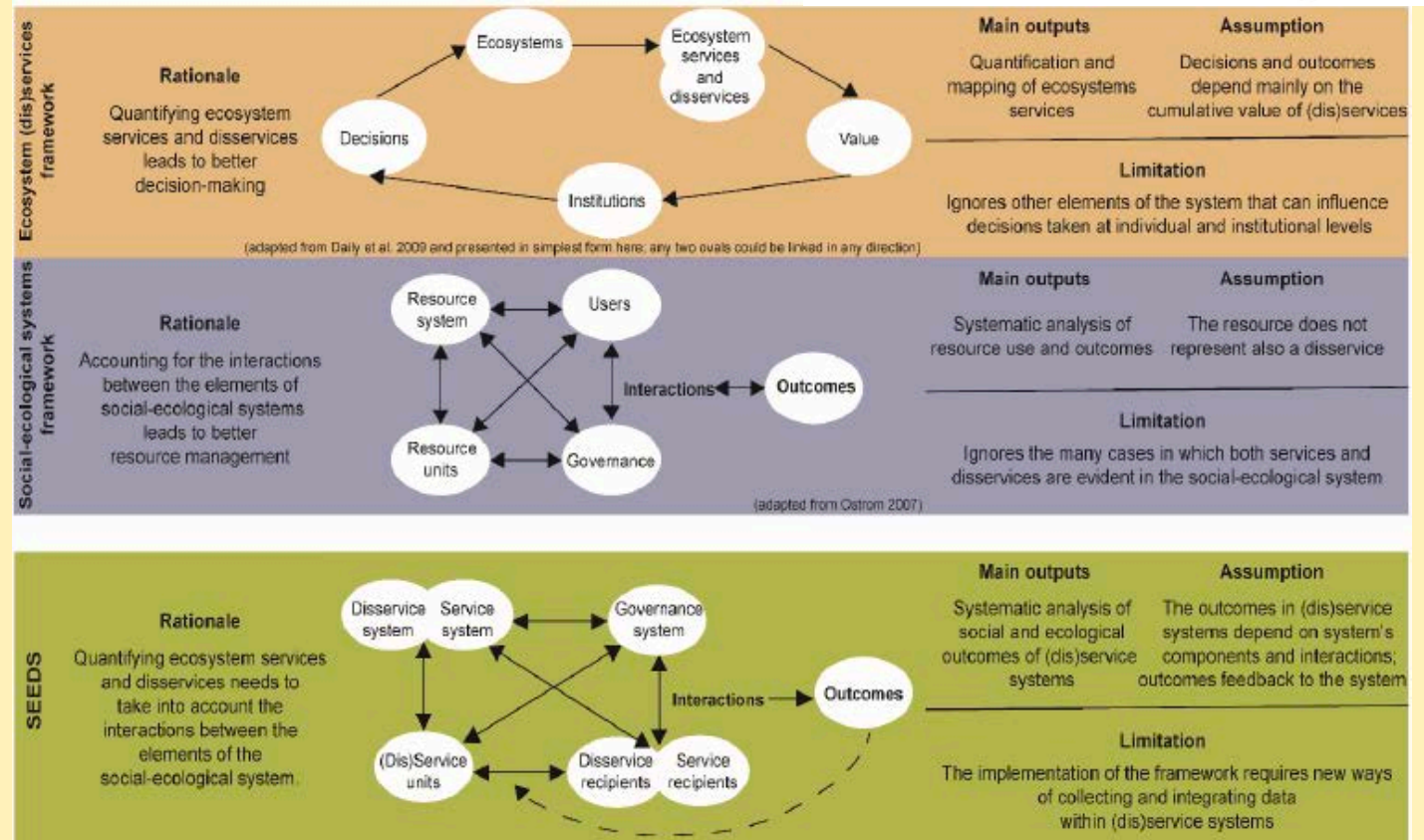
EXAMPLES



Protected Area management: Fusion and confusion with the ecosystem services approach

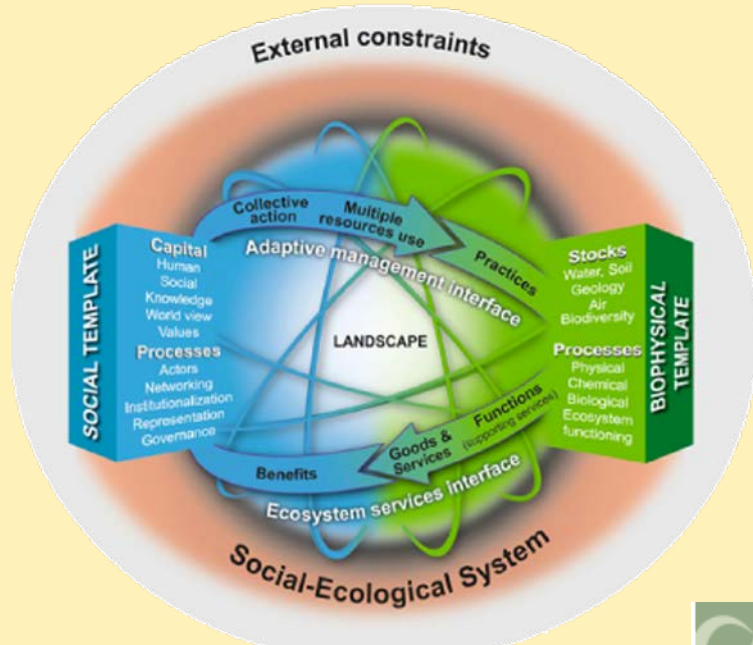
Christiaan Hummel^{a,b,*}, Dimitris Poursanidis^c, Daniel Orenstein^d, Michael Elliott^e, Mihai Cristian Adamescu^f, Constantin Cazacu^f, Guy Ziv^g, Nektarios Chrysoulakis^c, Jaap van der Meer^{b,h}, Herman Hummel^a

^a Royal Netherlands Institute for Sea Research and Utrecht University, Department of Ecotoxicology and Data Science, Yalebo, the Netherlands

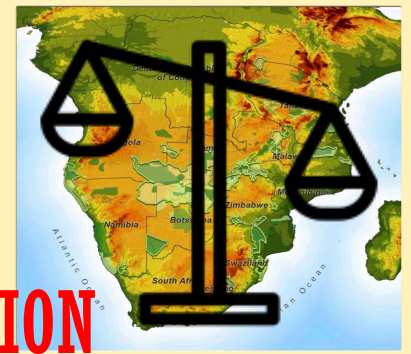


TFCAs AS SOCIAL-ECOLOGICAL SYSTEMS (SES)

Theory



LOCAL DEVELOPMENT + **RELATIVE UNBALANCE CONS/DEV**



PARTICIPATION MISMATCH + **CONSERVATION**

Action-orientated research and framework: insights from the French long-term social-ecological research network



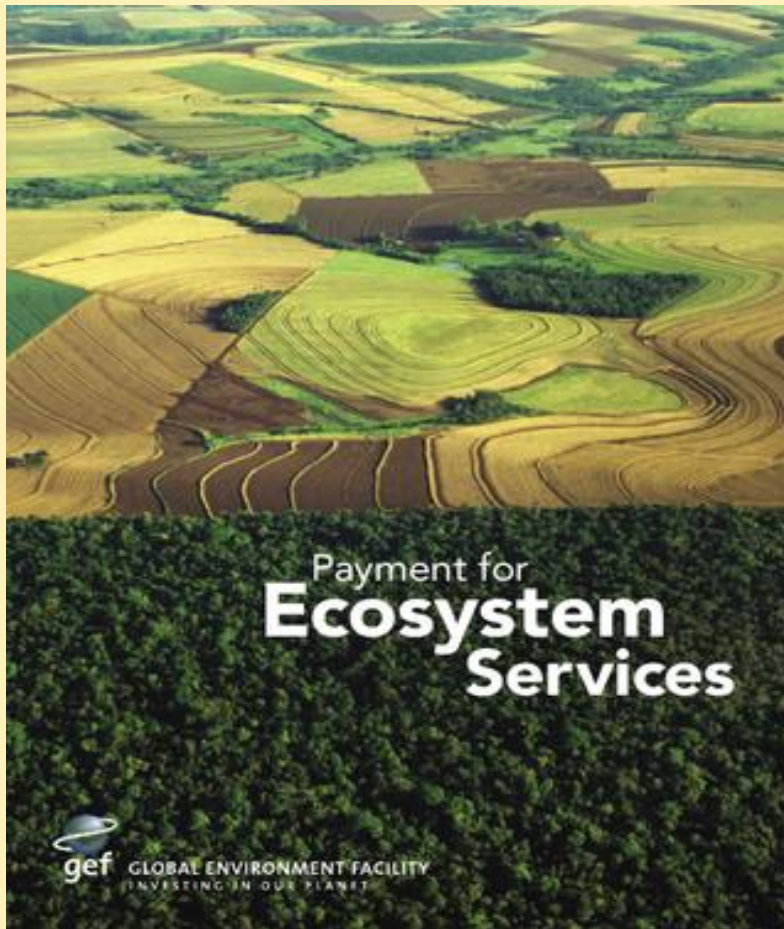
Vincent Bretagnolle¹, Marc Beaud^{2,3}, Mathieu Buisson⁴, Vincent Proust⁵, Joh. M. Church⁶, Sabrina Gaba^{7,8}, Daniel Gilbert⁹, François Gillet^{9,10}, Sandrine Glazeau^{11,12}, Chloé Guéhenne^{13,14}, Nicolas Lamouroux¹⁵, Marc Lehoucq¹⁶, Camille Mazé¹⁷, Jean-Marie Mouchel¹⁸, Annequin^{19,20}, Olivier Peyr^{14,21}, Christophe Péloux²², Olivier Ruysschaert²³, Sylvie Serrain^{24,25}, Thomas Spielberger^{26,27} and Hervé Fritz^{11,14,28}


LOCAL DEVELOPMENT IN THE CONTEXT OF TFCAs



HEALTHY TFCAs

PAYMENT FOR ECOSYSTEM SERVICES



- **NORTH PAYING FOR THE SOUTH**
- **HIGH POTENTIAL**
- **LINKING ECOSYSTEMS TO MARKETS** 
- **LONG SHOT**

TOURISM & THE COVID EXPERIENCE



• HIGH POTENTIAL BUT LINKED TO GLOBAL MARKETS



• FAIR ECONOMIC MODELS...



• FROM SELLING WILDERNESS TO HUMAN/WILDLIFE LANDSCAPE

• REGIONAL/LOCAL TOURISM — AFRICAN MARKET

nature ecology & evolution PERSPECTIVE
<https://doi.org/10.1038/s41559-020-1275-4>

Conserving Africa's wildlife and wildlands through the COVID-19 crisis and beyond

Peter Lindsey^{1,2,3}, James Allan⁴, Peadar Brehony⁵, Amy Dickman⁶, Ashley Robson⁷, Colleen Begg⁸, Hasita Bhammar⁹, Lisa Blanken¹⁰, Thomas Breuer¹¹, Kathleen Fitzgerald¹², Michael Flyman¹³, Patience Gandiwa¹⁴, Nicia Giva¹⁵, Dickson Kaelo¹⁶, Simon Nampindo¹⁷, Nyambe Nyambe¹⁸, Kurt Steiner¹⁹, Andrew Parker²⁰, Dilys Roe^{21,22}, Paul Thomson²³, Morgan Trimble²⁴, Alexandre Caron^{24,25} and Peter Tyrrell^{24,27}



PILLARS OF LOCAL LIVELIHOODS



- **MAIN PILLARS**
 - **CROP/SCROP PRODUCTION**
 - **LIVESTOCK PRODUCTION**
 - **(REMITTANCE FROM RELATIVES IN CITIES/ABROAD)**
- **BASED ON NR: WATER, PASTURE, SOIL, WOOD, WILDLIFE**
- **BASED ON INDIGENOUS KNOWLEDGE SYSTEMS**
- **BUT GLOBAL CHANGES, INCLUDING CLIMATE CHANGE...**



STRENGTHENING THOSE PILLARS

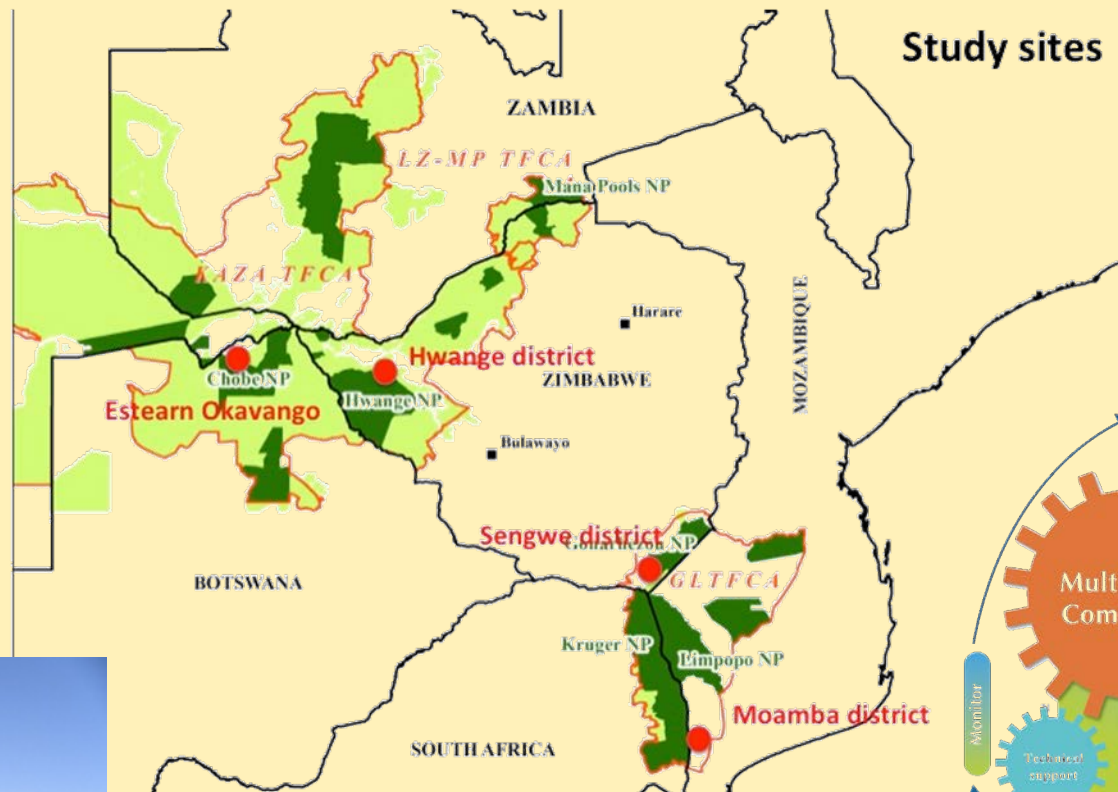


- **NEED TO DIVERSIFY LIVELIHOODS (E.G. COVID EXPERIENCE)**
- **NEED TO ADAPT / INNOVATION**
- **BUT AGAINST CULTURE — IMPORTANT ISSUE**
- **NEED TO BE TACKLED BY RURAL DEVELOPMENT SPECIALISTS**

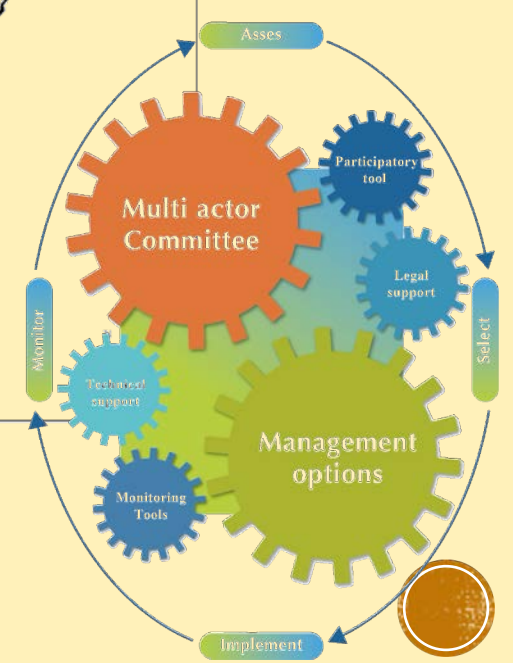
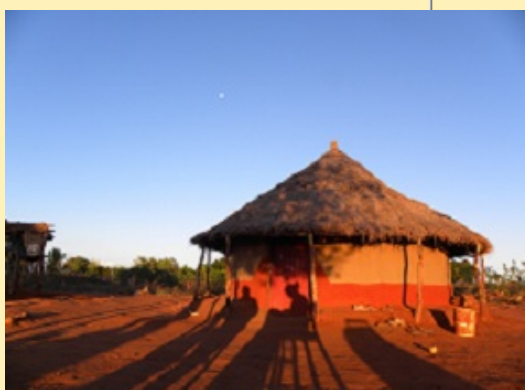


PROMOTING SUSTAINABLE LIVELIHOODS IN TFCAs

TO GIVE LOCAL STAKEHOLDERS
 AN OPPORTUNITY
 TO DESIGN AND IMPLEMENT
 LOCAL AND SUSTAINABLE OPTIONS
 FOR IDENTIFIED ISSUES AND/OR
 OPPORTUNITIES IN TFCAs



Study sites





DRIVING FORCES FOR EACH PROSULI SITES

Examples

**PARTICIPATORY
PROSPECTIVE
ANALYSIS**

ABOUT

FORESEEING FUTURES

Maese Botswana	Hwange Zimbabwe	Sengwe Zimbabwe	Mangalane Mozambique
Transport connectivity	Community & Governance	State of poverty	Access to water
Land use regulation and allocation	Natural resources	Governance capacity of local community	Family farming & food security
Education	Land use regulation & Allocation	Capacity to adapt to climate change	Livestock production
Human/wildlife interaction management	Local culture	Local culture & traditions	Community governance
Local job opportunities	Farming systems & livestock management	Type of farming systems (crop & livestock)	Local government functioning



Guide for co-elaboration of scenarios
Building shared understanding and joint action for reform and security of forest tenure

Robin Bourgeois, Nang Linnant, Constanza Melara, Alejandra Zamora, Tull Heneveld, Ilana Moutonno, Benard Mhale, Mari Kim Benjamin, Esther Mwangi, Aron Larson

Bourgeois et al. In prep



CO-DESIGN / CO-MONITOR SELECTED NR MANAGEMENT OPTIONS

CO-DESIGN

EMPOWERMENT

Secondary school

Diptank

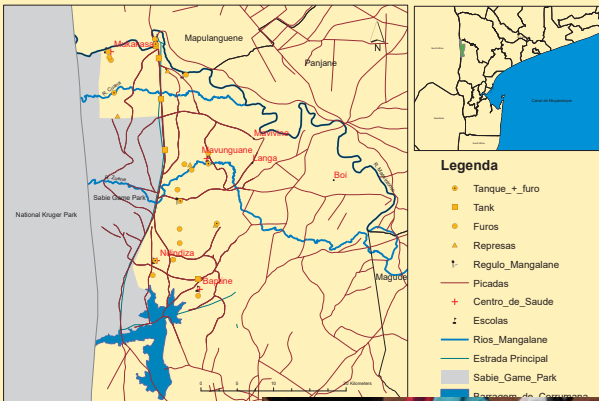
Irrigated gardens

Water

SUSTAINABILITY IN NRM ?

PARTICIPATION

CO-MONITORING

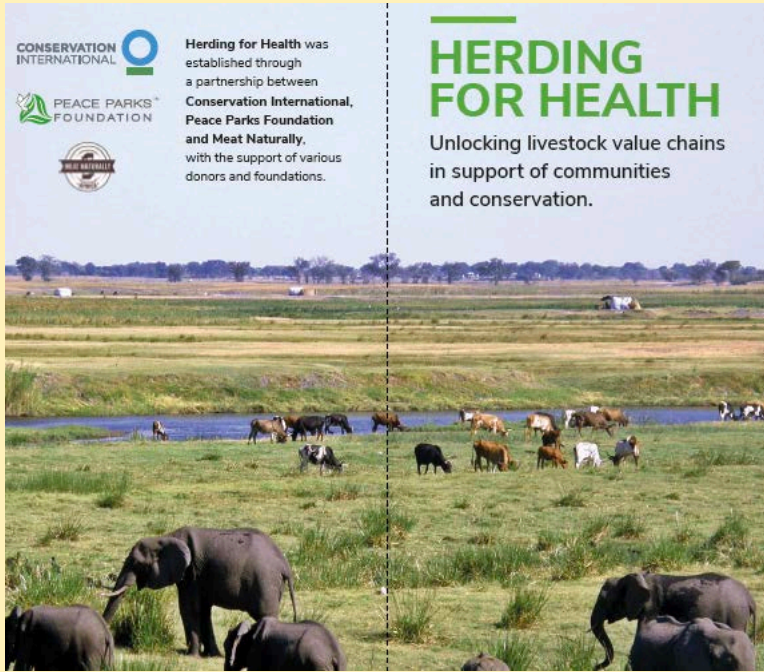


POST-GRADUATE TRAINING & RESEARCH

- SINCE 2007,
- 137 MSC/PHD SUPERVISED, 48 ON-GOING
- 65 IN ACADEMIC INSTITUTIONS & GOV SERVICES, NGOs LINKED TO TFCAS
- (>160 ARTICLES & BOOK CHAPTERS)



**TO STRENGTHEN THE LINKS
BETWEEN RESEARCH /
EXTENSION SERVICES / LOCAL
STAKEHOLDERS**



<https://www.peaceparks.org/h4h/>



<https://softfootalliance.org>

LOCAL

BASED ON INDIVIDUAL LEADERSHIP

LINK WITH RESEARCH TOO WEAK



<http://www.clawsconservancy.org>

HOW DO WE COME UP WITH FRAMEWORKS / APPROACHES FOR HEALTHY TFCAs?



<https://landportal.org/organization/terra-firma>



TO INVEST MORE IN

**LOCAL DEVELOPMENT IN THE CONTEXT OF
TFCA_s**

BASED ON CBNRM PRINCIPLES

**+ PAYMENT FOR ES
+ TOURISM**

TFCA_s PRIORITIES?



THIS MEANS

**NOT ONLY LINKED
TO CONSERVATION**

CBNRM 2.0 ?

**ACCESS TO NR
IN PAs?**

**MANAGEMENT NATURAL RESOURCES WITHIN
TFCA's LANDSCAPES (WATER, PASTURE, SOIL)**

**EXP. FROM
EASTERN AFRICA**



Conservation and Society 18(2): 183-199, 2020

Article

**It's Not Just About the Worm: Social and Economic Impacts of Harvesting
Imbrasia Belina larvae (Kruger National Park, South Africa)**

Louise Swemmer^{a*}, Rodney Landela^b, Patience Mdungasi^c, Stephen Midzi^b, Witness Mmatho^c,
Helen Mmethi^c, Daniel Shibambu^c, Alexis Symonds^d, Solly Themba^b and Wayne Twine^e



WHAT HEALTH FOR TFCAs AS SES?

WHICH FRAMEWORK FOR TFCAs?

WHICH SOCIAL/ECOLOGICAL/INTERACTION INDICATORS?

WHO MONITOR THEM IN THE LONG TERM?

WHAT TRAJECTORIES FOR TFCAs? (CONSERVATION & DEVELOPMENT)




M&E
COMPONENT

PARTICIPATORY
MODELLING



PROXIMAL CAUSES

DISTAL CAUSES

CRISIS	SHORT TERM SOLUTION		LONG TERM SOLUTION
COVID-19	FIND VACCINE		STOP DESTRUCTION OF NATURE CHANGE GLOBALISATION
CLIMATE CHANGE	REDUCE CO2 EMISSION		CHANGE GLOBAL SYSTEM
RHINO	ANTI-POACHING		STOP POVERTY IN TFCAs CHANGE CULTURE IN SEA

INCREASE IN SOLUTIONS' COMPLEXITY 



**Obrigado
Merci
Thank you**



10 PRINCIPLES OF SAYER (SAYER 2013)

1. Adaptative management
2. Common concern entry point (trust, start small)
3. Multiple scales
4. Multifunctionality
5. Multiple stakeholders
6. Negotiated and transparent change logic / Theory of Change
7. Clarification of rights and responsibilities
8. Participatory and user-friendly monitoring
9. Resilience
10. Strengthened stakeholder capacity



Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses

Jeffrey Sayer^{a,1}, Terry Sunderland^b, Jaboury Ghazoul^c, Jean-Laurent Pfund^d, Douglas Sheil^{b,e,f}, Erik Meijaard^{b,g,h}, Michelle Venter^a, Agni Klintoni Boedihartono^a, Michael Day^b, Claude Garcia^{b,i}, Cora van Oosten^j, and Louise E. Buck^k

E.G. WATER MANAGEMENT IN SAVANNAS

- **VITAL & RARE NR IN SOUTHERN AFRICAN SAVANNAS**
- **FOR WILDLIFE, AGRI. PRODUCTION AND HUMANS**
- **FOR WILDLIFE, LIVESTOCK AND HUMANS HEALTH**
- **WHAT WATER GOVERNANCE AT WILDLIFE/LIVESTOCK/HUMAN INTERFACE?**