

## Ecosystem services, landscapes and concepts for biodiversity protection: A "Pan-African" policy perspective

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## Objective of this presentation

- showing the similarity in African diversity of BIOTA “intervention”-related research of social sciences
- identifying future pathways for intensified exchange, linkage & networking for strengthening management of natural resources
- while focusing on most urgent unresolved research issues in policy formulation and interventions

## Exemplified by three interrelated research topics

1. Ecosystem services
2. Applied concepts for biodiversity protection
3. Policy instruments, strategies

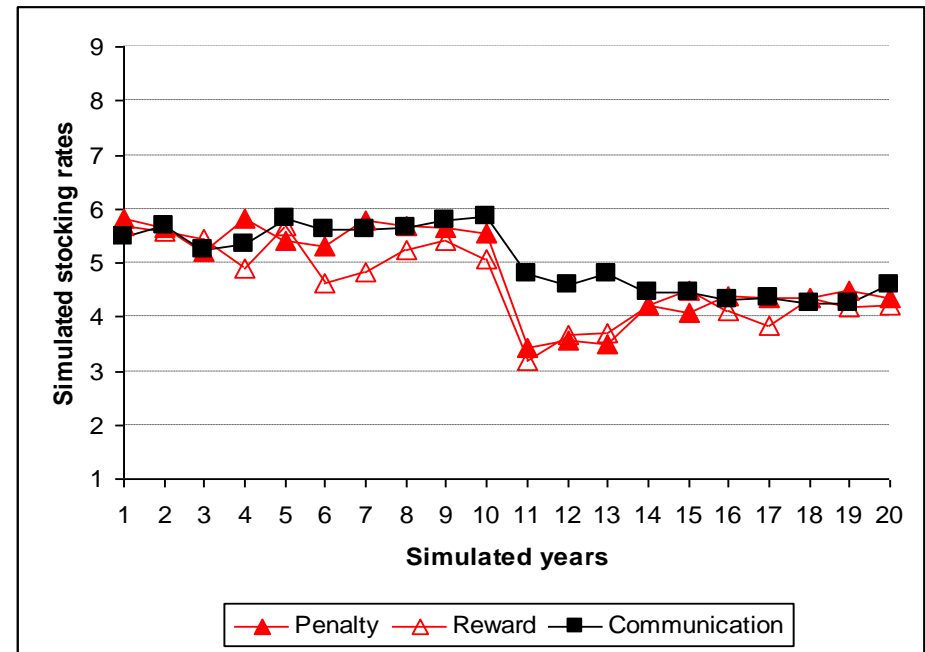


# 1. Ecosystem services, life support system and human wellbeing

Provision and valuation of eco-system services as a major challenge:

Is actually going along with the problem of *diminishing* services which show the negative impacts on the survival of farming communities

- A major, Africa-wide economic problem is to find *incentives* for ecosystem restoration
- A major institutional problem is to find *collective management* practices for ES
- A major social problem is to regulate *access and benefit sharing*





## west: termite mounds



## south: vegetation cover



## east: forest



**Scope:** Termites mounds: are essential for nutrient recovery and provide ecosystem functions

**Farmers/land users:** Farmers can not value and have a negative perspective of impacts, but!

**Search:** Research tries to establish positive values which are appreciated by farmers.

Vegetation cover facilitates water harvesting and growth of perennial grasses in *velds*.

Farmers cannot fully value state of vegetation for water catchment in drylands.

Research on management of large ecosystems helps to find recovery strategies.

Forests are used for fuel wood, grazing ground, thatch grass, medicine etc.

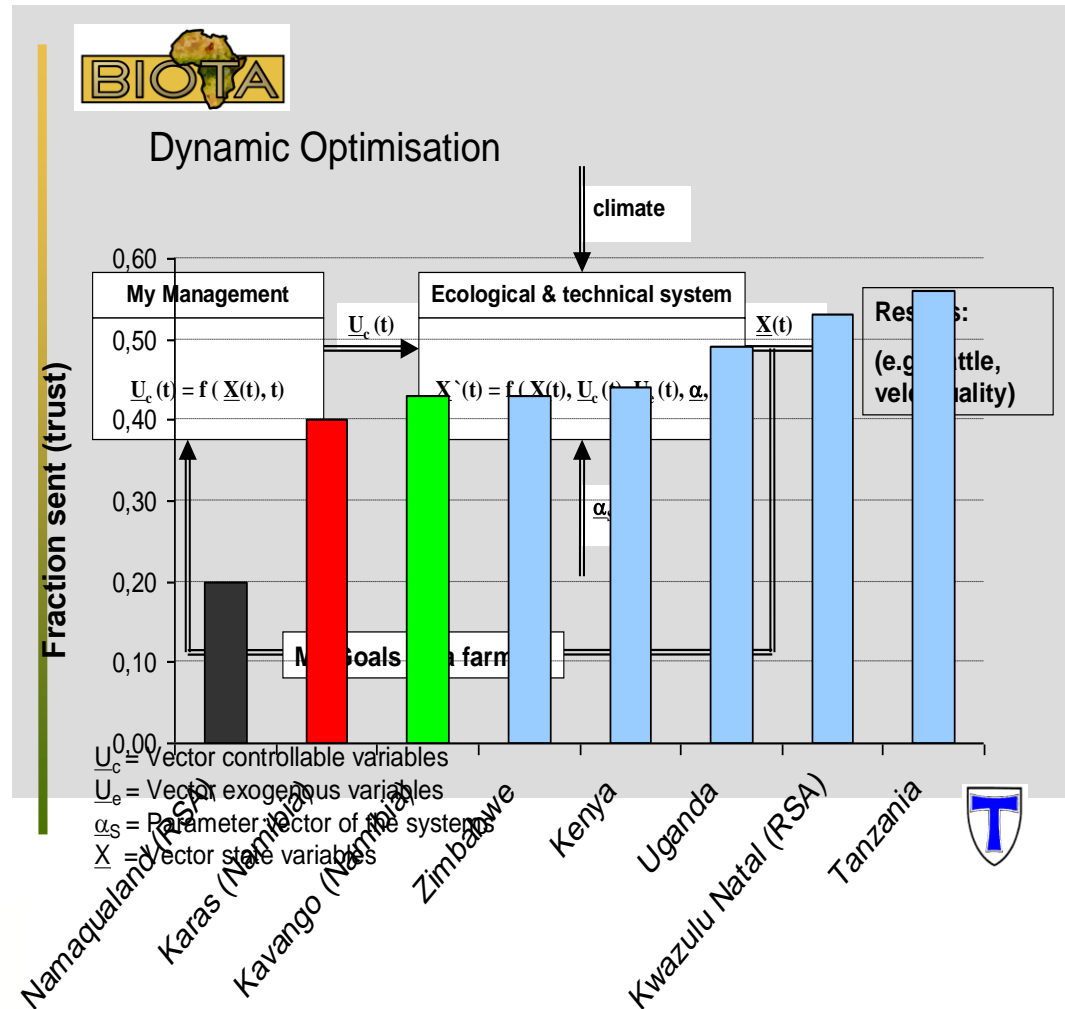
Poor farmers have few alternatives than using forest products and services

Research on alternative income opportunities helps to reduce pressure from forest

# 1. Pending joint, overarching BIOTA Africa ESS issues



- Human well-being (rural poor!) needs more consideration in ES perspective  
=> *tested in Kavango, Kakamega, Pendjari*
- Valuation needs system understanding and bio-economic modeling.
  - Value of whole forest or only of trees, timber, charcoal?
  - What size of ES brings what value?
- Ecosystems are collectively owned. How can, then, ES be privately acquired?  
=> *Cooperation, Trust*





# 1. Pending joint, overarching BIOTA Africa ESS issues

- What is the payment for services?
  - Who pays, when and how is paid or contributed for ES service?  
=> *Different institutional settings in East, West, and South, role of market?*
- Can international interests in ES (carbon sink) be translated into local markets for conservation?
- How can interest in ES maintenance be created under local conditions?



Photo: Prediger



- Future sustainable biodiversity protection concepts need ES valuation
- Valuation as an important tool for internalization of social costs
- Case studies on ES valuation are a first step for decisions of policy makers
- Need to calibrate and harmonize regionally-based approaches and compare results in a broader African context

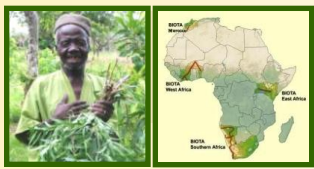


## 2. Applied concepts for biodiversity protection

- Research experience from East, West, South: Political will to integrate local resource users into conservation initiatives:
  - Community-based conservation (e.g. Conservancies)
  - Collaborative management
  - Integrated conservation and development projects
- However, BIOTA showed mixed socio-economic impacts of conservation
  - displacement of local populations
  - disregard for local land tenure
  - withdrawal of resources critical for livelihoods
  - neglect of local concepts of space, nature,
  - neglect of locally provided environmental services
  - negative side-effects of (eco-) tourism
  - misuse for political aims



## 2. Applied concepts for biodiversity protection



Existing concepts of biodiversity protection still lead to **unexpected externalities and social conflicts**



remaining challenge of regulating, coordinating, communicating divergent *values, knowledge, norms* and *interests*

of different stakeholder (e.g. customary law)

➔ Consider social dynamics of conservation

### Consequences for implementing concepts:

- inter-disciplinary expertise for complex social phenomena
- re-locating focus on micro-level processes
- lessons learnt for conservancies, participatory park concepts?



Photo: Gaesing

## 2. Implications for concepts for biodiversity protection

### Exchange of tested research approaches:

- Further clarifying who incurs costs & benefits from preservation
- In-depth studying of local problems arising
- Observing social dynamics leading to different economic innovations
- supporting incentives for self-organization, inter-group communication, and conflict resolution
- ensuring institutionalization of local interests in policy making





## Within multi-layer related policies

### 1. Integrating biodiversity

PRSP, National Action Plan

- Development of international payments for ecosystem services
- Testing the effect of payments for ecosystem services

### 2. Translating these into reformed national laws

- Include buffer zones
- Developing customary statutory law
- Dealing with overlapping land rights

Reconciling Biodiversity Conservation with Improved Rural Livelihoods

## Forest benefits

	Benefit	Overall (US\$)	US\$/ha
<b>Local</b>	<b>Fodder/grazing</b>	<b>783,066</b>	<b>32.63</b>
	<b>Firewood</b>	<b>748,790</b>	<b>30.69</b>
	Charcoal	25,424	1.27
	Thatch grass	147,312	7.37
	Local water regulation	225,676	9.20
<b>Regional</b>	Local erosion control	1,042,525	42.50
	Regional water regulation	909,081	37.06
	Entrance fees	43,262	1.76
<b>Global</b>	Reduced emissions from deforestation	40,548	1.65
	Carbon sequestration	122,650	5.00
	Recreational surplus	144,000	5.87
	Existence values	49,060	2.00
<b>Total</b>		<b>3,982,991</b>	<b>177.00</b>

Source: adapted from Guthiga 2008, Kasina 2007

Intro    Present Situation    Strategies    Outlook



## 3. National sector analysis

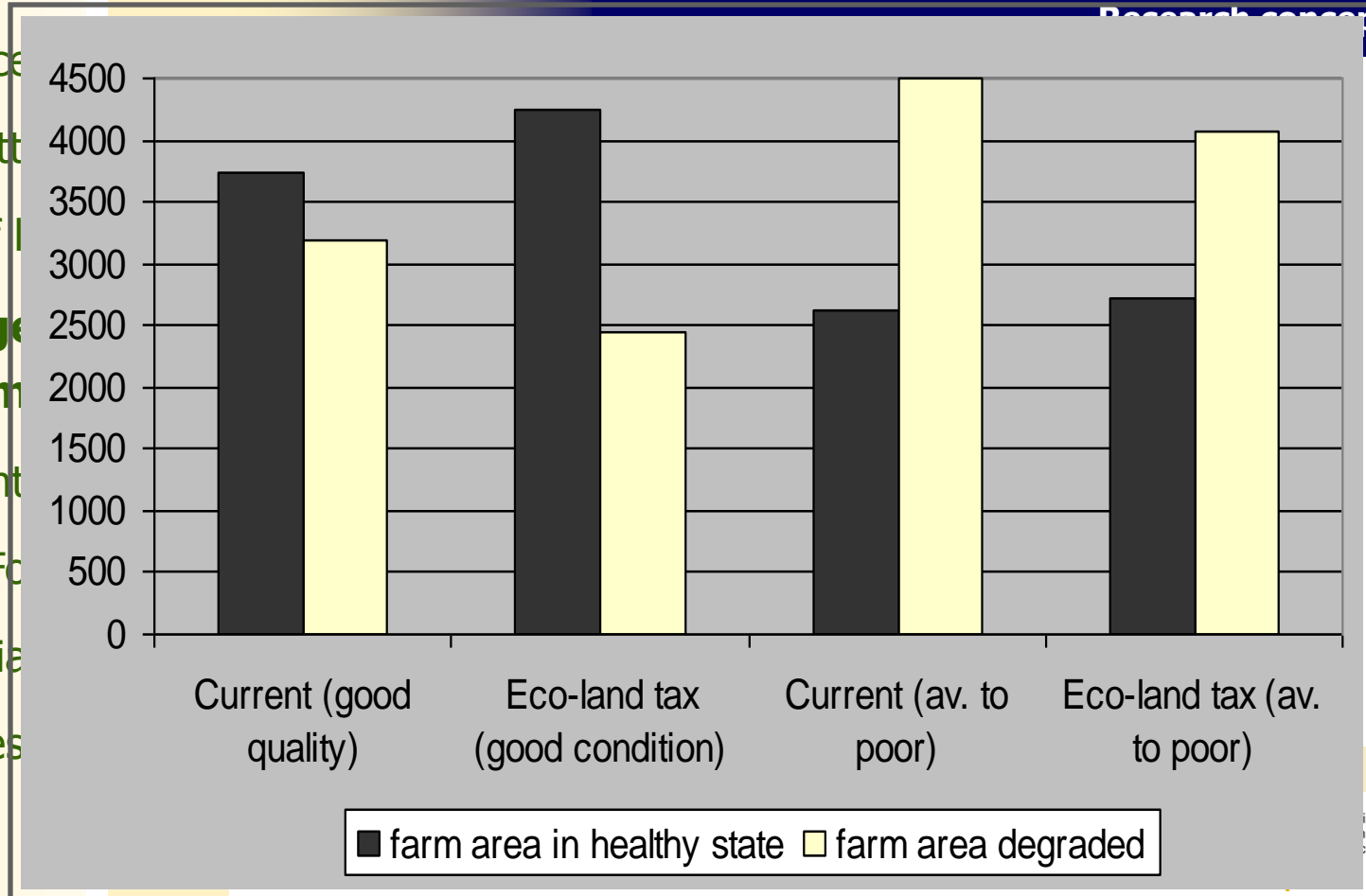
- Develop concept
- Assessing costs
- Evaluation of impact

## 4. Specific management options

- Integrating into
- Community Forest
- Healer associations
- Conservancies

Reconciling Biodiversity Conservation with Improved Rural Livelihoods

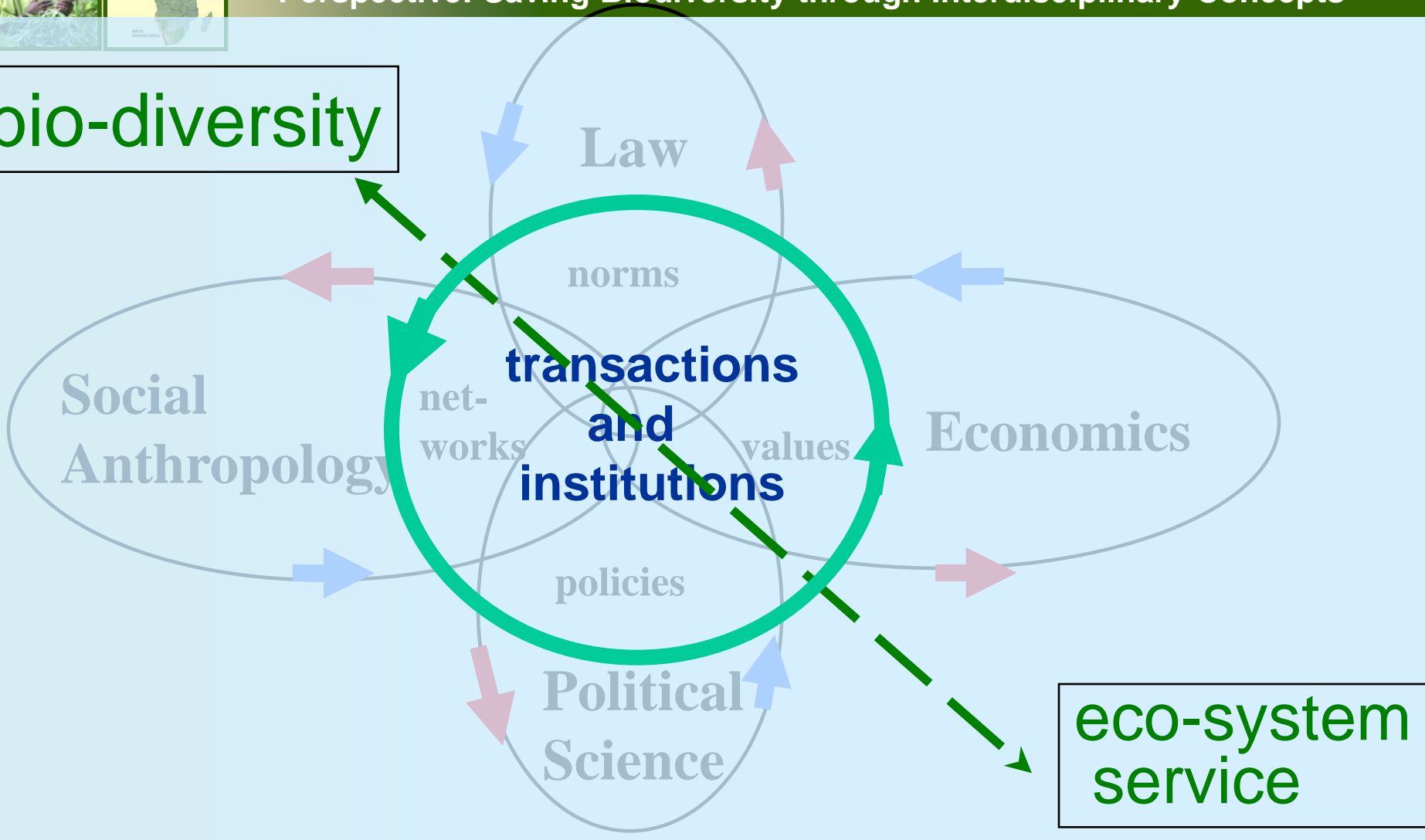
Research concept





# Perspective: Saving Biodiversity through Interdisciplinary Concepts

bio-diversity



eco-system service



**Thank you for your  
attention!**



Latour 2002

Intro

Ecosystem Services

Concept for BP

Policy Issues

**Conclusion**



BIOLOG



Projektträger im DLR



Federal Ministry  
of Education  
and Research