

**BIOTA**

**TREES**  
Tropical Rain Forest Ecosystem Services

## From biodiversity to ESS research

- building on BIOTA for TREES -

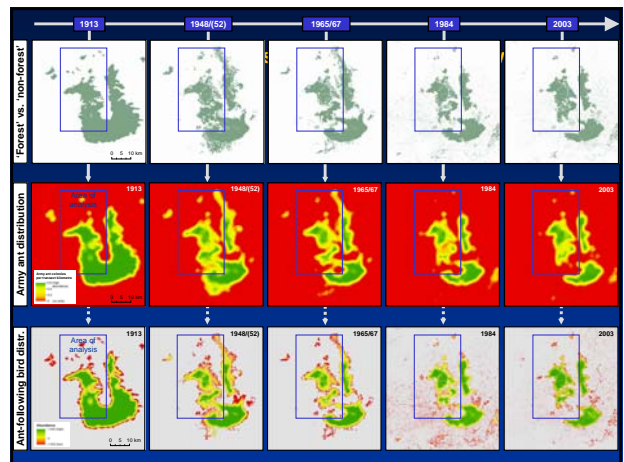
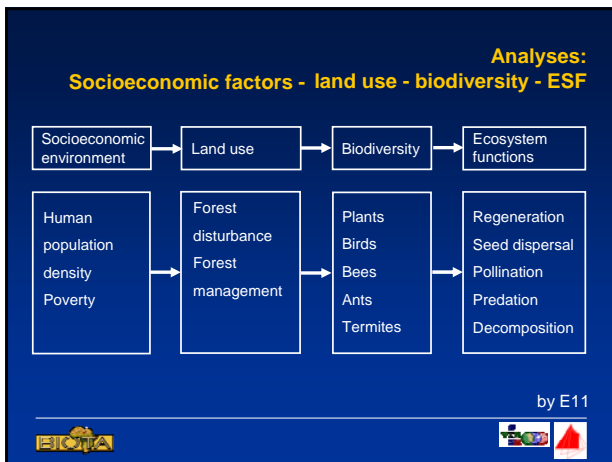
Gertrud Schaab  
(Karlsruhe University of Applied Sciences, Germany)

Representation of Ecosystem Services in the Modelling of Land Systems  
19-20 March 2010, Aberdeen (Scotland)

## BIOTA East Africa

**Comparative land cover time series**  
- over the last ca. 100 years  
- 9-11 time steps  
- 10-12 classes

- an integrated biodiversity research project
- funded by the BMBF, 2001-2010
- up to 16 subprojects, numerous counterparts in Kenya and Uganda
- investigation of 3 East African rainforests → effects of fragmentation, disturbance and human impact; comparison within and among forests
- recommendations for a sustainable biodiversity management
- subproject E02: GIS and remote sensing



## Scenarios: bird habitat guilds

not published yet

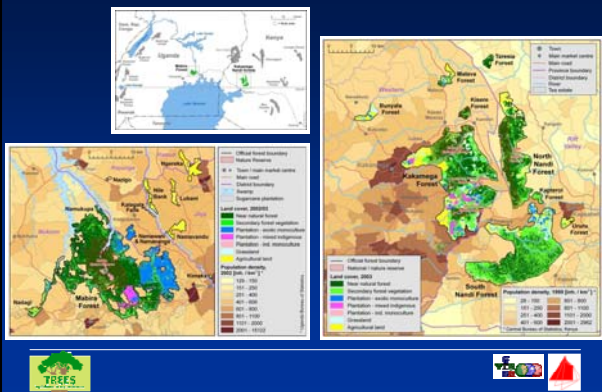
## Forest management zonation

- joint BIOTA-East proposal for a forest zonation plan
- recommendations:
  - fill any open space apart historical glades with mixed indigenous plantations
  - starting with corridors to link patches, restoring existing thin links

→ helpful in the PFM planning process

not published yet

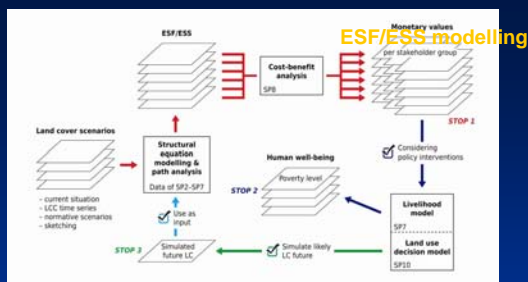
## TREES Tropical Forest Ecosystem Services Land use and rural livelihoods in East Africa



## Data sampling

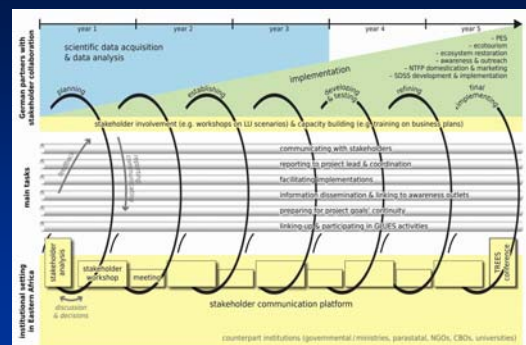
A joint study design

- for a wide range of forest ESF/ESS: e.g. timber, NTFPs, carbon sequestration, water regulation and quality, soil fertility and erosion, crop pollination, pest control, diseases, and cultural services
  - natural science SPs – in different forest management types: → 44 plots
  - natural science SPs – in adjacent agricultural areas with different land-use intensities: → 30 plots
  - socioeconomic SPs: x 5 distance classes x 40 households → 800 households
- basis for functional and quantitative studies on interactions and feedbacks, cumulative effects, trade-offs and synergies between ESF/ESS at different spatial and temporal scales



- development of a spatially explicit DSS by integrating the results of the statistical analyses, of the cost-benefit analysis and simplified socio-economic modelling approaches into one, easy-to-handle system
- conducting regular workshops allowing for contributions to model development by counterparts plus training them in the SDSS's use

## Stakeholder participation/dialogue



## To be pointed out

- small forest remnants as the typical situation in East Africa
- solid ground: (geo)data, methods, implementations, logistics, networks (stakeholders), experience reg. cooperation
- immediate start of implementation
- strength: capacity building/enhancement
- "new": model development on a joint data sampling effort
- keep fingers crossed (funding not through yet)

## Challenges

- different levels of uncertainties
- sustainability at counterpart institutions