Modelling concept
Reconciling future food production with environmental protection

Rational
GlobE-Wetlands involves scientists from 12 different disciplines. Such multi-disciplinary collaboration is required for gaining an integrated understanding about functional characteristics of East-African wetlands. The required hardware, a network of climate stations and an integrated data base structure has been established. Modelling methods are applied to support cross-disciplinary communication, to sharpen research hypotheses and to integrate the findings of cooperating groups. The wetland model design fuses quantitative and qualitative research approaches.

Concept
The model concept supports the balancing of resources supply and demand through technology and management interventions.

Highlights
The hardware and physical infrastructure for data collection sharing and computing has been established.
The wetland model design is based on the supply-demand concept.
Methods of system analysis are continuously applied to refine cross-disciplinary collaboration.
Model design fuses quantitative and qualitative research approaches.

Modelling methods
- Statistical analyses of ecosystem services
- Econometric modelling
- Statistical climate scenarios
- Storylines of wetland uses and boundary conditions
- Mathematical modelling of catchment hydrology
- Multi-agent modelling
- Mathematical modelling of water and nutrient transport
- Dynamic modelling of vegetation growth
- Data classification, spatial-temporal pattern search, landuse modelling

New automated weather stations were installed at all GlobE Wetland sites as part of a comprehensive agroecological monitoring program aimed at understanding wetland system responses to perturbations of the natural and human environments.

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