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The Economics of Ecosystems and Biodiversity
Agriculture & Food (TEEB AgriFood)

TRADE-OFFS BETWEEN LAND USES IN THE SOUTHERN HIGHLANDS OF TANZANIA

TANZANIA PROPOSED PILOT STUDY

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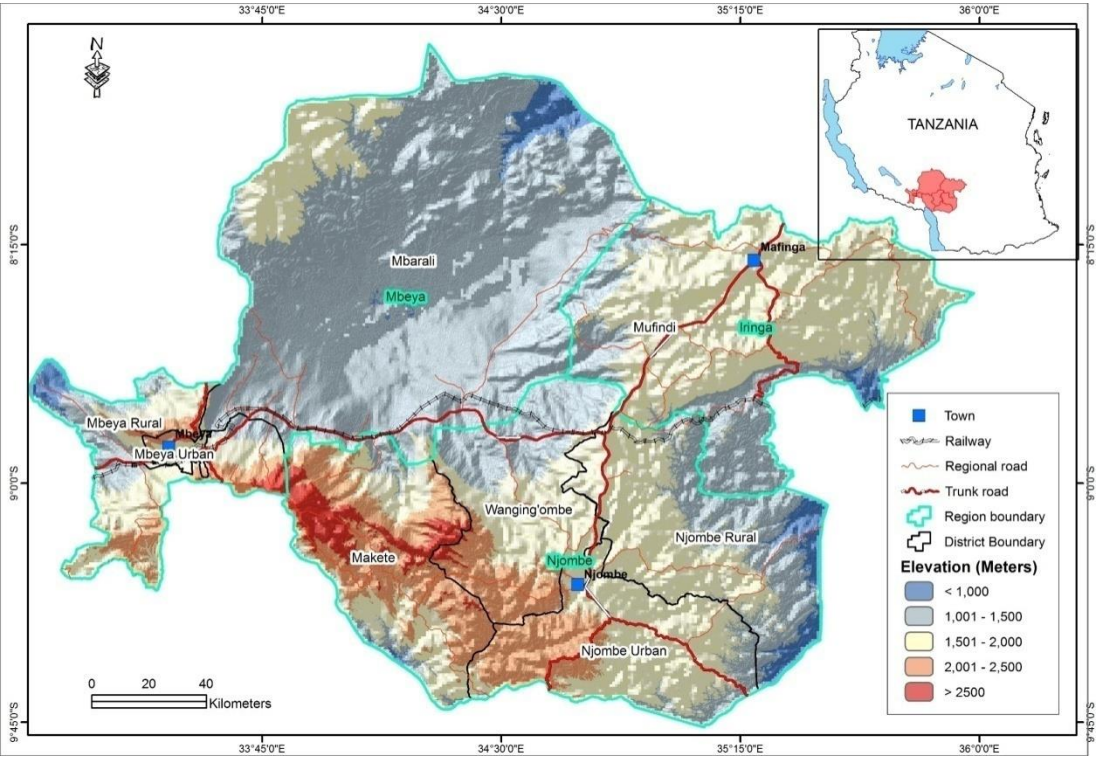
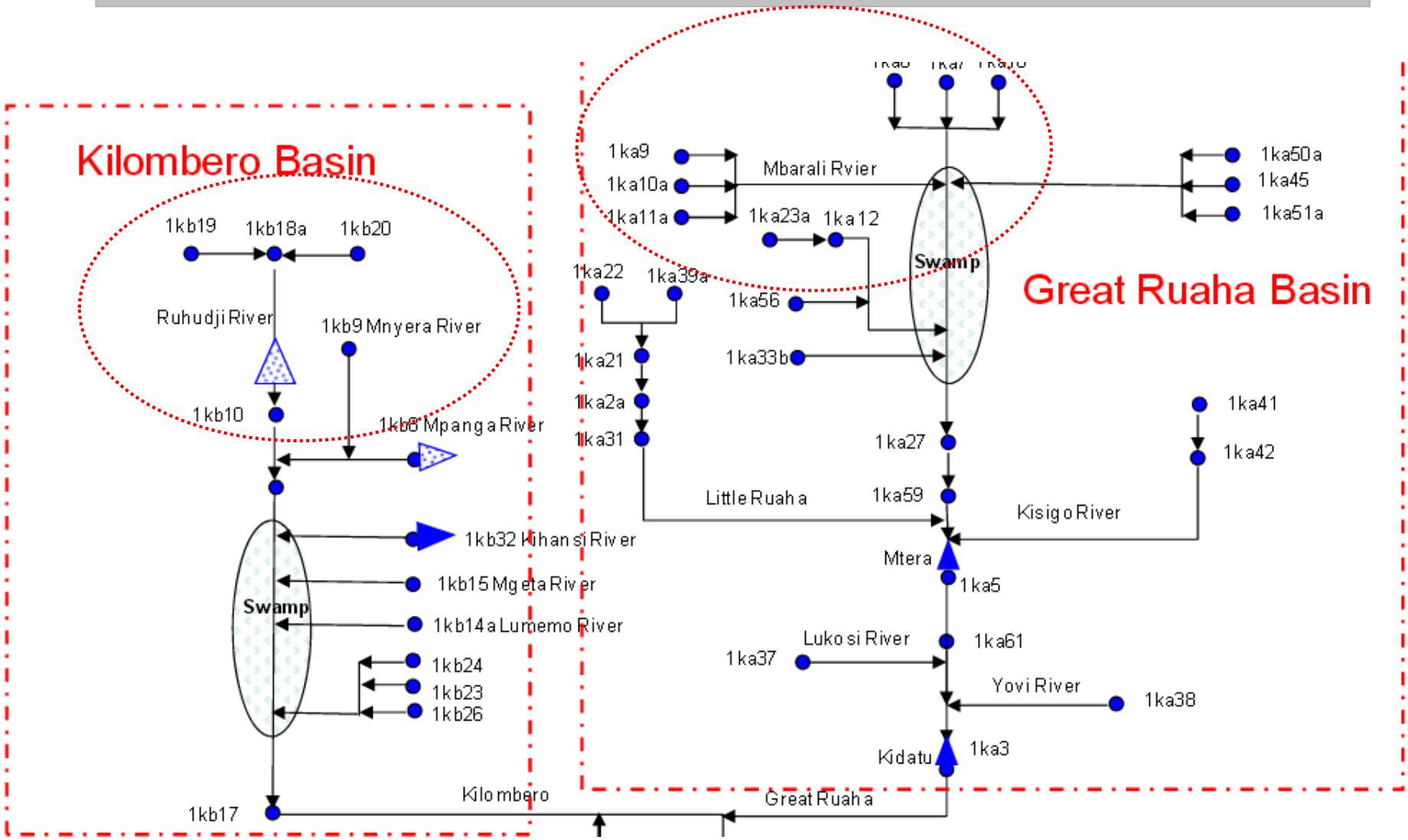
INTRODUCTION /1



- The TEEB AgriFood study will be undertaken in the upper catchment areas of the Great Ruaha and Kilombero Rivers
- This region is the headwaters for the agriculturally important Kilombero River Basin and eventually the Rufiji River Basin.
- The Rufiji watershed is critical for Tanzania's development plans, particularly as they relate to food security, water security, and energy production.

- TEEB AgriFood study would be conducted to inform land use policies, including agriculture and agroforestry policies, in the Southern Highlands region.

SCHEMATIC DIAGRAM – RUFIJI BASIN



Some pastoralists in Kilombero basin

Irrigation schemes - Udzungwa

Potatoes growing in Njombe

Kilombero irrigation schemes

INTRODUCTION /2

- Before the 1980s the natural ecosystems in the upland areas of the Southern Highlands were largely mountain grasslands often with scattered natural woodland patches especially along drainage areas.
- In the 1980s these ecosystems came under rapid pines forestation, transforming the ecosystem into artificial forests - transforming some of the grasslands into croplands.
- **WITNESSED:** Shrinkage of mountain grasslands and wetlands which are associated with drying up of formerly perennial rivers and streams during the dry seasons and heavy flooding during the rainy seasons.

Project's Objective

- ***The project's main objective is to mainstream the values of nature in decision-making by highlighting the several trade-offs made in land-use decisions, which are usually not captured through conventional assessments such as Strategic Impact Assessments.***

- These include hidden and often invisible contributions of nature to agricultural production, both positive and negative impacts of agriculture on biodiversity, human health, and other links of agricultural systems with communities and ecosystems

Definition of study scope and scenarios to be compared

- Delineation and mapping of the Southern Highlands and associated sub-catchments
- Land use policy and management review in each sub-catchment, to include responses to the following questions that would be site-specific:
  - What are the current agricultural and non-agricultural land uses in the Southern Highlands?
  - What are the current land use systems and existing community-based management plans in the study area, particularly as they relate to resource use for crop cultivation, woodlots and livestock grazing?
  - What are the agencies involved in making policies and managing land use in the Southern Highlands?
  - A mapping of planned development projects, especially as they relate to water use in the watershed

Biophysical and valuation data: Assessment of data availability and modelling

- Literature review and multi-stakeholder consultation (to include other research institutes, Ministries, NGOs working in the regions) to determine biophysical data availability for natural capital and ecosystem services
- Identification and filling of critical data gaps through the application of methodologies such as satellite imagery interpretation, rapid field surveys and stakeholder/community consultations

Scenario analysis /1

- Knowledge of the relationship between land use and ecosystem services, particularly water quality and quantity, food production and regional food security is the essence of this study.
- The study will examine trade-offs in different land cover/use scenarios, conduct scenario analyses to inform policies for land management in the region, and evaluate impacts throughout the agro-ecological value chains affected by the changes.
- The team will also provide a policy strategy and be responsible for engaging with government and other stakeholders to guide the research scope and to report findings and make recommendations.

Scenario analysis /2

- TEEB AgriFood Framework, including evaluation of natural, manufactured, human and social capital stocks and all associated positive and negative impacts of predicted changes to these stocks under different future scenarios will be conducted.
- Value chains, from production to consumption, will be described for each land use category within the basin: agriculture, grasslands (livestock grazing), plantation forest, and any natural or non-cultivated land cover.
- The project will identify any differences in social, produced, natural, and human capital for a predicted business as usual (BAU) and two alternative policy scenarios, at every step along the value chain.

Stakeholder participation

- Because of its multidisciplinary and multidimensional nature, the study will involve consultations with diverse stakeholders at different times during the project implementation.

- The stakeholders will include small and large scale farmers, tree growers and investors on tree growing, upstream and downstream water users, Local Government Authorities, the Tanzania Investment Centre (TIC), and representatives of the SAGCOT.

- For example, engagement with the Government will discuss past, current, and future policies and their ramifications.

Communication strategy

- ✓In order to generate uptake of policy recommendations, the team will need to engage in both formal and informal consultations with key change agents, such as those listed below:
    - Vice President's Office
    - Ministry of Agriculture;
    - Ministry of Natural Resources and Tourism;
    - Ministry of Water
    - TAWIRI;
    - TAFORI;
    - Ministry of Livestock and Fisheries;
    - SAGCOT Centre
    - Ministry of Energy
    - TANESCO;
    - TANAPA; and
    - TAWA