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“Exploring opportunities ...
for managing natural resources and a better life for all”

Resilient interfaces for integrated land and water resource management of various catchments in Ethiopia, Kenya, Uganda, Mozambique, and Burkina Faso

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Abstract

This paper examines the role of land-water interface zones – including buffer strips and adjacent agricultural areas near streams, rivers, wetlands, and lakes – across various catchments in Ethiopia, Kenya, Uganda, Mozambique, and Burkina Faso. The project aims to enhance our understanding and application of ecosystem services and agroecology to improve the health of critical natural habitats and ecosystems by reviewing existing literature, experimental data, and pilot studies.

Central to our research is a comprehensive approach to catchment management that addresses climate change impacts and socio-ecological dynamics. Specific attention is directed towards managing entire catchments to mitigate severe erosion, enhance carbon capture, improve water infiltration and retention, and raise groundwater levels to manage droughts and floods better. Additionally, we focus on nitrogen and phosphorus management to improve water quality for human use, maintain ecosystem health, and boost fish production.

Gender and diversity considerations are woven throughout the project, particularly in agriculture, forestry, and water quality. The paper aims to adapt to increasing global uncertainties by refining methods to understand trends and mechanisms that affect socio-ecosystems and sustain global well-being. The Sustainable Development Goals (SDGs) serve as a framework for monitoring the project's impact and assessing progress towards understanding and implementing Agenda 2030.

Five pilot projects, represented by our Africa-UniNet partners, will provide the practical material for catchment management using ecosystem-based approaches and nature-based solutions. How these global change-relevant activities can be managed and established at the catchment level will be discussed based on other projects handed into this call by African partners. This will expand the international and geographical perspective while increasing the knowledge base:

- (1) Gender-specific, adaptive capacity on Climate Change and Food Security. Status: A catchment approach to agroforestry land-water systems.
- (2) Integrated Agri-Aquaculture Systems for Food Security and Poverty Reduction.
- (3) Strengthening Research and Adaptive Management of Buffer Zones in Lake Tana catchment.
- (4) Strengthening community-based research for river health and climate change mitigation in Eastern Africa.
- (5) Rural women productive resources and their resilience to climate changes.

Keywords: Agroecology, climate change mitigation, community-based research, ecosystem management, land, SDG, water