

## Introduction

Kakamega Forest is the eastern-most relic of the once vast Guinea-Congolian equatorial forests and the only true equatorial rainforest found in Kenya. As is the case with other indigenous forests, Kakamega Forest provides several ecosystem services and benefits. These include catchment protection, wildlife conservation, provision of pole and fuel wood and other non-timber products, and provisions of medicinal plants and animals. International Union of Conservation of Nature, (IUCN, 1995) has accorded Kakamega tropical Forest the third highest priority for conservation among indigenous forests in Kenya. This is because of its high species richness and habitat heterogeneity and rarity, both of which are of priority for conservation. Anthropogenic activities such as overexploitation and habitat alteration threaten biodiversity, given the relatively small size of the forest and the large surrounding population – Kakamega forest is located in one of the most densely populated agricultural areas in the world with over 700 persons per square km. the forest has six very important ecological sub-systems of great interest for research: the riverine and /riparian systems, near natural forest systems, forest (grassland) glades, secondary forest systems, exotic and indigenous plantations and the soil system.

The establishment of the Centre for Kakamega Tropical Forest Studies (CEKATFOS) at Masinde Muliro University of Science and Technology (MMUST) was necessitated by the important national, regional and global roles of the Kakamega Tropical Forest. The Kakamega Tropical Forest plays an array of vital ecological roles that include alternative agricultural land use, an agent of landscape change, a wildlife habitat, an environment for recreation, a moderator of climate change, a carbon sink, and, not least, the source of raw materials for a range of timber and non-timber products. These important ecosystem services provided by the forest have led to immense conservation efforts of this important non-renewable bio-resource. Key to this effort is coordinated research that must provide the requisite data for long-term planning and foresight because decisions made today will impact on future delivery of ecosystem services and social impacts on the surrounding dependent communities.



The policy upon which the centre operates is derived from the overall vision and mission of MMUST whose primary facet is excellence in research in science and technology, Kenya's Vision 2030 and the Millennium Development Goals. CEKATFOS is designed to be a one-stop shop for research and linkages in Kakamega Tropical Forest Ecosystem both at local, national and global levels.



The functions of the centre are dependent on partial funding by Masinde Muliro University, stakeholders, research grants from participating scientists, institutional memoranda of understanding – in particular Kenya Wildlife Service, Kenya Forestry Research Institute and the Kenya Forest Service, and linkages that will facilitate.

## Vision

The vision of CEKATFOS is excellence in research and technology in the Kakamega Forest Ecosystem with capacity to be a linkage centre between Masinde Muliro University of Science and Technology, the Kakamega Forest and the rest of the world.



## Mission

To be a centre of linkage for local, regional and international research, training and policy on Kakamega Forest ecosystem in the areas of effects of climate change in the forest, carbon sequestration and trade, biodiversity and habitat conservation, forest restoration, water catchment management and participatory forest management involving local communities and other stakeholders.

## Objectives

The general objective of CEKATFOS is to be the lead and coordinating centre for research in the Kakamega Forest ecosystem that will provide leadership in research aimed at understanding and maintaining an appropriate balance between conservation, sustainable utilization and development. The specific objectives are:

- ❑ To strengthen the capacity for biodiversity in research by developing a stronger and more proactive leadership role in the Kakamega Forest ecosystem.
- ❑ To conduct baseline studies on Kakamega Forest ecosystem through literature search, gap analysis, comprehensive field ecological surveys as a basis for establishing a biodiversity database.
- ❑ To establish and promote links with other research institutions and individuals in order to design and lead in providing appropriate management responses to emerging ecological management issues and threats.
- ❑ To establish the sustainable yield levels of non-timber resources and recommend modalities that ensure conservation, sustainable utilization and equitable access by all local communities in the Kakamega forest ecosystem and at the same time search and identify equivalent alternatives.
- ❑ To provide solutions to current and future conflicts between biodiversity conservation and sustainable utilization in order to nurture responsible stewardship for future posterity.
- ❑ To stimulate and enhance sustained local and regional economies, through use of fauna and flora, human capital, and catchment assets using new technologies and innovations.
- ❑ To promote important biodiversity assets of the society and cultures of the region through knowledge of mechanisms that promote ecosystem diversity, dynamics and resilience.
- ❑ To build and maintain a database on ecological dynamics of the Kakamega forest ecosystem and appropriate ecological and management responses.



### Stakeholders forum

CEKATFOS requires external financial support for its operations. This external support is expected to be realized through the establishment of a stakeholders' forum that will comprise members from among others: Kenya Wildlife Service, Kenya Forest Service, CBOS around the Kakamega forest ecosystem, Conservation Forest Associations, National Council for Science Technology and Innovation (NACOSTI), the ministries of Environment, Forestry and Wildlife, national and international conservation NGOs, collaborating scientists/individuals, Kenya Forestry Research Institute, the Kakamega County government and corporate support from trade and industry.

The main functions of the stakeholders are to provide both material and financial support and to evaluate the performance of the centre as a hub of quality research and training for the Kakamega Forest ecosystem.



### Research and Training Facilities

- ❑ **Research staff:** Research staff from Masinde Muliro University of Science and Technology's supporting faculties/departments and collaborating institutions form the core group under the direction of the research collaboration department of CEKATFOS.
- ❑ **Laboratory facilities:** the existing laboratory facilities within MMUST i.e. the department of Biological Sciences and the department of Pure and Applied Chemistry will support research and innovation in respective areas in the Kakamega Forest ecosystem. It is the responsibility of CEKATFOS to make these laboratory facilities known to all researchers making MMUST the choice place for data and analysis. Any additional resources will be sourced through proposal funding requests and from stakeholders.
- ❑ **Field station:** In consultation with the Kenya Forest Service and the Kenya Wildlife Service, CEKATFOS intends to construct a field research station within the Kakamega Tropical Forest using funds sourced from collaborating partners. The station will be MMUST property and will be equipped with specialist equipment vital for research by students and members of academic fraternity locally, regionally and internationally. This station will eventually house the CEKATFOS.

- ❑ **Computer facilities:** because the centre wishes to establish a biodiversity database for the Kakamega Forest ecosystem, computing facilities will be established and networked between MMUST and all other partners. A functional website for the centre is to be set up to market it as a one-stop shop for all individuals and institutions interested in research within the Kakamega Forest ecosystem.



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