

3. Integrated Management strategy

An integrated management strategy for management of Embobut River Basin should focus on the multiple-use conservation approaches. Some of the areas within the forest showing signs of relatively little human impacts can be designated for strict conservation. Conserving ecological systems, plant communities, and species provide a more ecologically integrated conservation strategy. Conservation, in order to be effective, must strive to balance the protection of countable objects of diversity and the use of natural processes.

4. Enhancing indigenous knowledge

Inhabitants of Embobut are losing the IEK. For this reason, the inventory generated by this study ought to be printed and used to educate the younger generation about the varied types of plant resources and their uses. In order for the indigenous traditional knowledge to be better appreciated by the youth, the curriculum should be revised to integrate IEK. Additionally, the study has shown that integrating new scientific knowledge with IEK can yield greater results in terms of sustainable utilization and management of the local flora.

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Introduction

In the North Rift Region of Kenya, the Embobut River Basin has undergone massive human settlements resulting in unsustainably use of forest resources leading to massive deforestation. The encroachment into the forest has led to loss of biodiversity, soil erosion, fragmentation and degradation (). The region experiences environmental perturbations that may further modify forest species structure and plant use. There is need to study how the plant vegetation of the region respond to natural environmental process as well as human induced disturbances.

The preservation of biodiversity and indigenous knowledge of plants require accurate information from a wide variety of sources. Since inhabitants of such areas depend on food and medicinal plants as their main source of livelihood, information about their biodiversity and spatial distribution with respect to natural environmental and human attributes is essential. Despite significant efforts to develop biodiversity indicators, global indicators still fall short of an accurate and comprehensive picture of local biodiversity, and are often underused in decision-making. Biodiversity data are lacking in the tropics because (1) data is either scarce or of poor quality due to poor research efforts and (2) available data may not be accessible for lack of collaboration between institutes or because data are not adequately presented, published or centralized.

This policy brief outlines the plant species biodiversity and local community indigenous knowledge in Embobut River Basin in Kenya. Development of policies should therefore look at the vegetation changes and take into account the biodiversity and local indigenous knowledge into a new paradigm that recognizes the value of ecological in addition to traditional and indigenous knowledge in management of plant biodiversity resources.

Project approach

This study was undertaken along the Embobut River Basin in the Elgeyo Marakwet County (latitude 110' to 114'N and longitude 3527' to 3542'E).

The vegetation was sampled through transect methods. Evidence of human and animal activities that included grazing, logging, charcoal-burning firewood collection, cultivation within the sampling areas were recorded along transects. The environmental parameters included slope of the plot, aspect of plot, altitude, temperature, rainfall, humidity and wind speed which were measured and related to plant species composition and abundance. Plants use was determined through surveys of 157 households. Data was collected using questionnaires, focus group discussions and key informant surveys.

BIODIVERSITY AND INDIGENOUS KNOWLEDGE OF PLANT USE IN EMOBOT RIVER BASINS FOR CONSERVATION



Findings on the Embobut River Basin Plant species biodiversity

There were 41 tree species, 62 shrub species, 7 liana species and 126 herbaceous species. The sparsely populated areas within the escarpment and highland forest and mountainous regions had more plant biodiversity compared to the densely populated areas within the lowland and valley floor.

Environment and human control of plant biodiversity

Among the environmental factors, humidity, rainfall, wind speed, temperature and altitude acting singly or in combination exerted more control of plant biodiversity. Also several human activities reported specifically: grazing (65%), logging (61%), collection of firewood (52%), uncontrolled burning (52%) and charcoal burning (51%).

Utilization and management of vegetation by the local community members

Plants were used for: food (25%), fencing (34%), charcoal (44%), medicinal purposes (46%) ornamentals (48%), timber (52%) and firewood (56%).

Policies for a sustainable management

A wide variety of policies specifically environment policy, agricultural policy and water policy can promote Sustainable Ecosystem Management on a large scale. Some measures should increase the enforcement options available to governments. Substantial opportunities recommendations exist for designing and implementing environmental fiscal reform to enable sustainable ecosystem

1. Regulatory frameworks encouraging investment and conservation

Governments and other stakeholders can provide policy frameworks and strategies that scale up environmentally friendly activities which are needed in order to go beyond small niche markets and include strong economic sectors that highly contribute to local and national economies. These frameworks can provide a transparent and enabling environment for environmentally friendly practices. Numerous cases of illegal access and use of genetic resources and traditional knowledge have cast a shadow over the Intellectual Property Rights systems. Biodiversity rich countries constantly point at the failure to discourage biopiracy and other forms of misappropriation.

2. Enforcement and compliance

Effective surveillance and control is critical to the success of both regulatory and incentive-based management. Countries must strengthen their governance through investment in surveillance and enforcement capabilities, and in improved procedures for prosecuting.