

# Balancing livelihood needs and environmental protection

The people living around protected areas have to develop alternative livelihood sources to make a living. People on the forest fringe often depend on the utilisation of products and services provided by natural resources. The use of these formerly ‘free’ products is regulated and limited nowadays, also for environmental reasons. How can a balance be achieved between the needs of the poor neighbourhood and the requirement to conserve the rich biodiversity?

After many years of either promoting agricultural and food security projects or pursuing the protection of the environment, researchers, development experts and politicians have realised that there is a strong link between the two. It is now emphasised that one side cannot exist without the other and that without taking into account the livelihood needs of the people living close to or inside protected areas, research focusing on conserving biodiversity will not lead to any sustainable improvement for either side.

## ■ The research programme in Kakamega Forest (Kenya)

After six years of continuous research under the frame of the BIOTA East Africa research programme (see Box), the Department of Spatial Planning in Developing Countries, TU Dortmund University, has developed a number of strategies which help to balance the delicate equilibrium between the needs of a poor population living around a protected area and the need

**Dr Karin Gaesing**  
Technical University Dortmund  
Department of spatial planning  
Dortmund, Germany  
karin.gaesing@tu-dortmund.de

to conserve the rich biodiversity of such an area and manage it in a sustainable way.

The research setting is the Kakamega Forest in Western District, Kenya, and the surrounding Kakamega District (see Map), which has one of the highest population densities in rural Africa, with up to 500 inhabitants per square kilometre. An extensive household survey provided insight into the livelihood sources of rural households next to the forest. They depend on four different types of livelihood source:

1. Forest products and services,
2. Non-forest related and non-agricultural (alternative) income,
3. Remittances and wages, and
4. Agriculture and livestock production.

People extract firewood, medicinal plants, thatching grass, timber and food from the forest, they produce charcoal, and they lead their cows into the forest for grazing.

*Community beehives improve livelihood and biodiversity.*



Photo: K. Gaesing

The farms around the forest are subsistence-oriented, mainly cultivating maize on holdings of less than an acre of land; a smaller portion of farmers also grow tea or sugarcane as cash crops. Each household tries to keep some cows despite the severe shortage of grazing grounds. Alternative incomes do not play a substantial role and are mainly generated from petty trading and small businesses and crafts. The forest accounts for about 20 percent of the livelihood sources; however, whereas for poorer households, dependence on forest products can be considerably higher, for better-off households they mainly constitute a complementary income source.

In former times, the access to the forest products and services was free of charge for the population. Nowadays, in the southern part of the forest, the off-take is regulated by fees; in the northern part, any utilisation of forest products is strictly forbidden. However, there is illegal forest exploitation in both parts, because the forest-adjacent communities highly depend on forest products and services for their living. In order to balance the livelihood needs of the people and the need to conserve the forest and its rich biodiversity, alternative livelihood sources have to be developed.

## ■ Participatory Land Use Planning for environmental protection and development

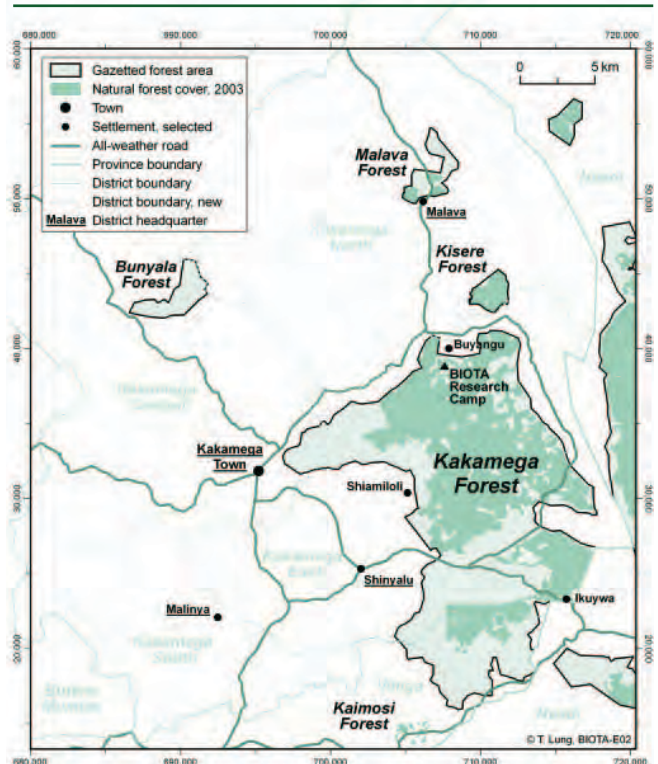
The researchers of the BIOTA programme closely cooperated with three forest-adjacent communities to learn more about the relation between the forest and the surrounding population. With the help of participatory research and planning methods such as Participatory Land Use Planning (PLUP) and Action Research, the team of researchers mobilised forest-adjacent communities to analyse their own problems, challenges and potentials and to identify solutions that

could lead to alternative livelihood sources reducing the pressure on the forest.

As a first step, a team of people from local community-based organisations, non-governmental organisations and government officers were trained in PLUP. Officers from the Kenya Forest Service (KFS) and the Kenya Wildlife Service (KWS) were part of the team. PLUP is based on the philosophy and tools of Participatory Rural Appraisal. Since different types of land use affect the status of biodiversity in varying degrees, land use decisions and tools for problem solving were prioritised and concrete actions targeted.

During the analysis phase of the workshops, men and women separately drew a map of their community indicating physical and social infrastructure, water ways, natural resources, settlement areas and any other features they considered important. The main purpose of the exercise

**Map of Kakamega Forest and District, showing the three case study villages**



was to help the participants develop an overview of their community, its resources, potentials and problem areas. The maps were then used as a basis for discussion on natural resource related problems and potentials. This was followed by a transect walk, an institutional analysis, a seasonal work calendar, an income and expenditure profile, a narrative of the village history and a gender diagggregated problem analysis. Based on this situation analysis, the community elaborated an action plan.

## BIOTA East Africa Research Programme

The BIOTA (Biodiversity Monitoring Transect Analysis) research programme in East Africa was launched by the German Federal Ministry of Education and Research in 2001 in order to conduct an inventory of biodiversity in one of the last remaining rainforests in East Africa and to analyse the effects of human activities on biodiversity. It is composed of ten sub-projects, most of which deal with zoological, botanical and ecological aspects of the rich biodiversity of Kakamega Forest. The Department of Spatial Planning in Developing Countries of the TU Dortmund in co-operation with GIGA Hamburg/sept Leipzig and ARTS/University of Bonn joined the programme from 2004 to 2010 to analyse the relation between the forest and the surrounding population and to develop strategies which reconcile rural livelihood and biodiversity conservation.



Photo: K. Gaesling

The action plan aimed at improving the livelihood situation of the respective communities while at the same time conserving the rich biodiversity of Kakamega Forest. Income-generating activities figured most prominently in all action plans of the three communities. With the assistance of the PLUP team, the communities managed to transform the plans into project proposals to be submitted to the Constituency Development Fund, a government fund which is aimed at reducing regional imbalances and at fighting poverty. Pilot activities were financed by the project.

Each village formed a self-help group with a management committee, registered it with the responsible government office and opened a bank account in Kakamega Town. The activities chosen differed from village to village. Two of the communities intended to start with beekeeping, while the third focused on dairy development as a first activity for community development. Both activities chosen are closely related to the objective of conserving the forest. The installation of beehives on the forest fringe enhances pollination and helps the forest vegetation to regenerate,

*Zero grazing project in combination with biogas development.*

because for fear of being stung, neither people nor browsing animals will frequent the location. Dairy development has been selected not only for income generation and diet improvement, but also as a showcase for other farmers and communities to learn about zero grazing, fodder planting, high-yielding milk cows and cow dung utilisation on farms. In a second step, this experience is combined with biogas development to substitute firewood as an energy source.

### ■ Participatory planning enhances self-help capacity

Local communities in the area are not only aware of the quality of their environment but also highly committed to reconciling the improvement of their livelihoods with biodiversity conservation. Individual farmers and community based organisations proudly present their indigenous tree nurseries and agro-forestry practices. A local non-governmental organisation promotes eco-tourism, beekeeping, butterfly farming and environmental education programmes for school children. The research project has recognised these local initiatives as potentials for further development and included local catalysts for biodiversity conservation and economic development in the planning workshops.

The participatory planning approach has strengthened the communities' self help capacities and organisational potential, and it has brought together relevant actors for local development. Taking into account the tense relationship between community members and forest management authorities, PLUP provides an important platform for reciprocal better understanding. The information about the development initiatives has spread and attracted other communities' interest.

*Community members developing a resource map of their village.*

## ■ Embedding into regional development planning

Asked what assisted them most in developing economic activities, community members attributed equal importance to experience exchange and training and to credit. Gender balance in decision-making, planning and implementation ranked third. Research results revealed that credit institutions and development funds are available in Kenya and in Kakamega District. However, they do not always meet the needs of groups and communities demanding assistance, while communities are ignorant of them and their acquirement procedures. Regional planning and institutional cooperation can serve as a mediator to improve the information flow between communities and financing institutions such as banks with their rural credit programmes and NGOs providing micro-credit. The incorporation of a capacity-building and a monitoring programme improves business success and repayment rates.

People have realised that their own development efforts can be more successful and are more likely to be sustainable if they are supported by local institutions and organisations. Administrative and planning authorities have been active partners in the research project from the beginning. They have realised the relevance of participatory



Photo: K. Gaesing

local level planning for the elaboration and implementation of tailor-made development plans which embed community development in regional development strategies. Only by taking the needs, capacities and opportunities of the local population into account can roads, transport facilities, markets, schools, clinics, finance and training institutions be provided exactly where they are needed and in the way they are required. Ownership has become a key factor in development. Projects planned and implemented in a participatory way have a greater chance of being effective and sustainable, because people feel ownership and show commitment.

The livelihood situation of individual households engaged in alterna-

tive income activities has considerably improved as is illustrated by the case of one of the farmers who embarked on biogas and vegetable production. With two cows already kept in a stable in their compound, husband and wife found it easy to fit biogas into their maize and dairy farm. They immediately recognised the potential of the fertile slurry and changed part of their plot into a vegetable garden to improve diet and income.

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*For more detailed information on the research project see: Gaesing, Karin (ed.)(2009): Reconciling Rural Livelihood and Biodiversity Conservation. SPRING Research Series 52. TU Dortmund*

## Zusammenfassung

Die Bevölkerung im Umfeld von Schutzgebieten muss sich alternative Einkommensquellen für ihren Lebensunterhalt erschließen. Bewohner der Waldrandgebiete sind oft von der Nutzung der Produkte und Dienstleistungen in Verbindung mit den natürlichen Ressourcen abhängig. Die Nutzung dieser ehemals ‚freien‘ Produkte ist heute auch aus Umweltgründen reguliert und begrenzt. Wie lässt sich dennoch eine Balance zwischen dem Bedarf der Armen und den Forderungen nach Erhalt der

reichen Biodiversität finden? Der Beitrag untersucht, wie Haushalte sich an alternative Einkommensformen anpassen können, welche alternativen Einnahmequellen existieren und wie diese verbessert werden können.

## Resumen

Las personas que viven en torno a áreas protegidas deben desarrollar medios de vida alternativos para asegurar su subsistencia. Los habitantes de las zonas aledañas a los bosques dependen de la

utilización de productos y servicios proporcionados por los recursos naturales. El uso de estos productos – antes de libre disposición – hoy en día se encuentra regulado y limitado, en gran parte debido a razones ambientales. ¿Cómo puede lograrse un equilibrio entre los requerimientos de los pobres y la necesidad de preservar una biodiversidad abundante? El artículo trata de las capacidades de los hogares para adaptar sus medios de vida, las opciones de medios de vida alternativos y los factores que producen mejoras.