The Ecoagriculture Snapshots series highlights the work of different organizations around the world to implement ecoagriculture landscape management approaches.

# Enhancing Agricultural Productivity on the Margins of Kakamega Forest, Kenya

The Kakamega Forest lies 150 kilometers west of the Rift Valley in Kenya at an altitude of 1600 meters. It is the only surviving rain forest in Kenya and the eastern-most fragment of the Guinea-Congolian rainforest, which once stretched from Kenya across Uganda, Central Africa, and the West African Coast. Covering an area of 230 square kilometers, the forest is home to a considerable variety of habitat, including rainforest, swamp and riverine forest, colonizing forest, disturbed forest, forestry plantations, natural glades, and recent clearings made for pit-sawing and charcoal burning. Closed canopy indigenous forest covers about 25% of the area. The forest is home to over 300 species of birds and 350 species of plants. About 10 to 20 percent of the animal species in the forest are not found elsewhere in Kenya.

As an island of relatively 'natural' habitat in a sea of human-dominated landscape, the Kakamega Forest is invaluable to the people that live around it.

***The Valonji Women's Group members were trained to make fuelwood energy-saving devices on a commercial basis. Source: Wilber Lwande/ICIPE***


***Community members living adjacent to Kakamega forest cultivate and process the medicinal plant, Ocimum kilimandscharicum for manufacture of Naturub. Source: Wilber Lwande/ICIPE***

Immigration and high population growth rates have made this area one of the most densely settled parts of Kenya, with over 200,000 people, mostly farmers on small family farms, settled on its edges. An important watershed for some of the rivers that flow into Lake Victoria, Kakamega Forest provides timber, fuel-wood, herbal medicines, building materials, food, and new land for agriculture and settlement. While many of these traditional uses are now officially outlawed, they continue because high levels of poverty leave inhabitants with no easy alternative, and haphazard law enforcement poses little risk. These pressures have not only steadily diminished the forest but also its capacity to recover. As a result, Kakamega Forest has lost more than half of its total area in the last 30 years.

In 2000, projects coordinated by the International Centre for Insect Physiology and Ecology (ICIPE) brought together international and local organizations

to diversify economic opportunities and increase productivity on existing agricultural lands at the forest margins, thus relieving pressure on the forest. These efforts included the introduction of agroforestry trees as an alternative source of timber; commercial cultivation and processing of indigenous medicinal plants; energy conservation techniques; beekeeping and silkworm rearing; and credit loans to community groups.


***Community members adjacent to Kakamega forest cultivate Mondia Whytei, the roots of which are used in the manufacture of the product, Mondia Tonic. Source: Wilber Lwande/ICIPE***

Since the start of the project, more than half a million indigenous tree seedlings have been planted by community members on their farms. Extension workers who were trained in agroforestry techniques such as tree seed collection, extraction, sowing, and management in turn have gone on to train community youth groups, women's groups, and school children. The extension workers also propagated and distributed seedlings to be used for firewood, timber, medicine, and fodder by other community members.
Community-based commercial cultivation and processing of two medical plants, *Ocimum kilimandscharicum* and *Mondia whytei,* was also introduced as a means to diversify economic opportunities. Facilities for processing the two medicinal plants were established adjacent to the forest. Two commercial product lines were developed from the two plants and are now on retail shelves across Kenya.

Because the communities living around Kakamega Forest rely so much upon fuel-wood, the project also focused on energy-saving techniques to reduce the amount of forest-wood harvesting. More than 53,000 community members have so far been introduced to methods such as mud stoves, shielded fires, saw-dust metal stoves, and clay food warmers. Over 17,000 fuel- and energy-saving devices have been installed. The project has also set up a Financial Services Association ('village bank') to provide credit facilities for business, agriculture, school fees, medical expenses, and other activities.

In addition, community members were trained in more efficient methods of beekeeping, honey production, and silkworm rearing through workshops and demonstrations. More than 800 langstroth hives were installed in rural households during the life of the project. Community-based women's groups now cultivate honey from the modern hives and silkworm cocoons from six silkworm rearing huts and mulberry farms established by the project.

The project has promoted community-driven environmental and conservation education through training and improvement of the facilities and activities of a community-based environmental conservation group, the Kakamega Environmental Education Programme (KEEP). The group has taught environmental and conservation education to over 29,000 children and 5,000 adult community members at its resource centre in Kakamega forest. KEEP also conducted over 1,500 visits to schools and community groups and attended more than 110 public meetings in villages around the forest to promote conservation awareness.

**For more information, please visit:**
**http://www.mnh.si.edu/kakamega/onfarmForestry.html**
**http://www.columbia.edu/~mc51/web-pages/Research_Kakamega.html**
**http://www.bridgeworks.ch/bilder_inhalt/in_the_press/Comesa.pdf**

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