



Beyond Timber: Forest management models for transforming conflict into cooperation

In brief

The competing needs of different groups who depend upon the Congo Basin rainforest can be met if innovative, new research-based models for multiple-use forest management are employed.

The models, together with accompanying policy guidance, have been endorsed by the region's forest administration body COMIFAC and offer the potential to alleviate both the conflict between groups and the pressures on the landscape, allowing livelihoods and forest to flourish.

Underpinned by groundbreaking, multi-disciplinary, international research, the models embody combined insights into local people's needs, the ecological and genetic basis of forest sustainability and regeneration, and the interests of commercial logging outfits.

Background

The Congo Basin rainforest – the second largest area of tropical forest in the world, covering an area of two hundred million hectares and home to more than 50 million people – has long been plagued by conflict over its abundant resources and, more recently, by accelerating deforestation.

At ground level the conflict occurs between local people, who depend upon the forest for fuel wood, shelter and wild foods, and representatives of corporate interests such as logging companies, who require easy access to land and trees.

Some 40% of the forest is given over to commercial logging allocations, or concessions.

Where these apply, logging activities can have considerable, negative impact on the livelihoods of local people, not least because concession areas and community lands often physically overlap.

The impacts range from intrusive traffic and polluted waterways to the destruction or degradation of local hunting and foraging grounds. The latter can lead to depleted diets, malnourishment and poverty, since forest products are critical to the food and nutrition security of rural communities and to their subsistence and market economies.

Longer term, the impacts of a declining forest resource will worsen, with increasingly

adverse effects at local and wider scales. The imperative for the region is therefore to reduce deforestation while reconciling the needs of all who harvest timber and non-timber products from the forest.

The challenge of integrating these competing requirements is further complicated by the uneven bargaining power of local people and commercial interests; and by a dearth of data describing how communities depend upon the forest, and how forests respond to different uses.

Research that unpicks this complexity can play a critically important part in meeting this high-stakes challenge.

The project

The Beyond Timber project was led by Bioversity International in strategic partnership with the Center for International Forestry Research (CIFOR), bringing in national research partners in Gabon, Cameroon and the Democratic Republic of Congo (DRC) (respectively: Institut de Recherche Agricole pour le Développement (IRAD); Institut de Recherche en Ecologie Tropicale (IRET); and Université de Kisangani (UNIKIS)).

Beyond Timber ran for more three years between April 2011 and December 2014. Its aim was to “maintain ecosystem integrity and sustain the livelihoods of forest-dependent people in the Congo Basin by increasing multi-functionality of forest management.”

Research teams at international and national levels worked on detailed studies of forest ecology and genetics, local diets, and livelihoods, to see how forest products meet local nutritional and economic needs, and how competing interests affect the forest’s capacity to supply those products – and villagers’ ability to access them. Consultations with local people, logging companies and regional authorities formed a key component of the work, and two cross-cutting themes (gender and multiple-use forest management models) provided additional focus.

The project was supported by the Congo Basin Forest Fund (CBFF) and the CGIAR Research Program on Forests, Trees and Agroforestry. It operated within COMIFAC’s Convergence

Plan and referred to forestry laws in Cameroon, Gabon and DRC, also taking account of the FSC certification scheme for reducing the impact of forest harvesting in Central and West Africa.

Results

The study led to an increased understanding of the relationship between forests and local diets and of the genetic and ecological aspects of forest resilience and regeneration, in six different areas with logging concessions spanning three countries in the Congo Basin (Cameroon, Gabon and DRC).

These findings, combined with information gleaned from participatory community consultations and exchanges with logging concession administrators, formed the basis of three published forest-management models, each tailored for the conditions in its respective country.

Specifically, the science research highlighted the contribution to nutrition, poverty alleviation and food security of six particular forest species (most of which are also exploited for timber), namely: moabi (*Baillonella toxisperma* - provides fruit and oil); ozigo (*Dacryodes buettneri*); gambeya (*Gambeya africana*); mvout (*Tricoscypha abut*), ebaye (*Pentaclethra macrophylla*) and poga (*Poga oleosa*). Evaluated for their vitamin A, C and E content; macronutrients, and minerals such as calcium, sodium, iron, zinc and magnesium, they were shown – if taken in adequate quantities – to have higher potential for contributing to daily dietary needs than several domesticated fruits.

Ecological studies on five tree species – moabi, sapelli (*Entandrophragma cylindricum* - provides edible caterpillars and medicinal bark), tali (*Erythrophleum suaveolens* - provides edible caterpillars and fruits used as fishing bait), ozigo and gambeya – revealed low densities in concession areas, and with a few exceptions, low densities around villages also. However, they also revealed that concessionaires had respected requests made by communities that they not log moabi because of its importance to livelihoods. Characterizations of the genetic diversity and gene flow patterns of three species showed that the reduction of tree



densities due to logging can negatively affect the viability of regeneration; although the potential for harvest-driven opening of tree canopies to lead to an increase in regeneration was unclear.

The socioeconomic and gender-based studies showed that villagers (men, women and children) collect important forest foods (such as wild fruits, condiments, bushmeat and caterpillars) within a 10 km radius of their community centres and sometimes beyond; that women are involved in 80% of the labour-intensive processing work for priority non-timber forest products, which brings low returns; and that women have access to trees but little control of the land on which they grow.

The participatory research entailed consultations in five to seven villages for each concession area, amounting to more than 300 households. NGOs, elected leaders and regional authorities were also involved. The consultations allowed affected parties to explore and agree the feasibility of suggested plans and incentives for integrating all stakeholders' needs.

THE FOREST MANAGEMENT MODELS

The three forest management models, each tailored to conditions in its respective country, provide methods for integrating the local use of non-timber forest products with commercial imperatives in ways that allow all parties to benefit.

In broad terms: the Cameroon and Gabon models entail promoting the collection of non-timber forest products, implementing controls on hunting and chainsaw logging and introducing financial incentives or support for community agroforestry and tree planting initiatives.

The DRC model is similar but with additional support for charcoal production.

The models each identify acceptable trade-offs between stakeholders, including tax relief, technical and financial support to local projects, and the reduction of some illegal practices.

Each requires a commitment from logging companies to be more socially responsible, to carry out an inventory of the multiple use timber tree species within the reach of communities and to make sure they leave behind an adequate number of these trees to meet the needs of local communities.

Photo: Children of forest community in Eastern Cameroon with one child holding fruits of wild/bush mango (*Irvingia gabonensis*). Credit: Bioversity International/R.Fungo



Photo: Gnetum africanum leaves, locally known as KoKo, on display for sale in Eastern Gabon Market of Francville City
Credit: Bioversity International/R.Fungo

Scaling the results

The research partners documented and disseminated the project results and recommendations in the form of 10 policy briefs, one synthesis report and three research manuals, to target groups including communities, concession owners, administrative bodies, scientists, students and researchers from eight COMIFAC member countries (Burundi, Cameroon, DRC, Gabon, Congo Republic, Equatorial Guinea, Central African Republic, Rwanda).

COMIFAC also disseminated the project results in workshops and international conferences and agreed on a means to ensure the continuous distribution of these results beyond the project timeframe.

The two primary outputs were widely disseminated and endorsed as official policy recommendations by COMIFAC. These are:

- Practical, operational guidance on integrated forest management approaches that reconcile timber and non-timber production and safeguard local people's access to key livelihood resources.

This Brief is based on a report prepared for the CGIAR Research Program on Forests, Trees and Agroforestry aiming at documenting outcomes achieved by the Program's research activities.

Citation

Ceci P., Taedoumg H., Gotor E., Spedding V. (2016) *Beyond Timber: Forest management models for transforming conflict into cooperation*. Bioversity International, Italy.

- Multiple-use management models and interventions aimed at minimizing the negative impacts of timber extraction – particularly on food security – and at maximizing the benefits derived from forests.

A comprehensive communications programme followed the publication of results, which included 12 presentations at six international conferences, 12 workshops at the local and international levels and innumerable other articles and blog posts.

Key to the successful take-up of the results and recommendations by relevant parties was the guiding philosophy of partnership, which was embedded and emphasized throughout the project.

ADDITIONAL OUTPUTS

There were a number of further outputs, which contribute to regional capacity building, as follows:

- Research insights into forest genetics and nutrition, available as levers for implementing sustainable forest management.
- Research insights into gender-specific roles relating to forest use by local communities, available as levers to influence gender-sensitive policy-making.
- A large number of interns, students and partners gained valuable skills and qualifications, resulting in 16 Masters theses and six potential PhDs. Of the 19 students trained at graduate and postgraduate levels, seven were women. Of the nine young researchers from national research institutes, four were women.

What next

Longer-term funding and actions are needed in order to measure the impacts at community level of the recommendations as disseminated by COMIFAC, and to continue a multi-stakeholder dialogue around forest concessions that promotes the adoption of the models over the next 3-5 years with a particular emphasis on obtaining commitments from forest concessionaires.

If successful, this would be expected to lead to co-management arrangements for the forest, the setting up of village-forest dialogue and negotiation platforms, and ultimately the integration of resulting agreements into forest laws and regulations as they are updated.