Three nations, one conservation complex

The future of a TBCA in a large forested landscape in the Congo Basin depends on benefits accruing to local people

by Grégoire Ngono

Specialized Research Centre on Forest and Environment

Meyomessala, Cameroon

Baby chimp: The chimpanzee is one of the most endangered species in the TRIDOM landscape. *Photo: FAO/FO-0034/Souvannavong*

TRIDOM – the Tri-national Dja–Odzala–Minkébé landscape – lies within the Western Congo Basin Moist Forest Ecoregion, the world's second-largest expanse of rainforest. It is a zone of about 14.6 million hectares spanning territories in the Republic of Congo, Gabon and Cameroon (see map next page) and includes seven protected areas with a total area of 3.6 million hectares (see table). The TRIDOM cooperation agreement between the three countries was signed in 2005 and defines a tri-national governance structure.

Gorillas and more

National protected areas in TRIDOM

Country	Protected area	Year of creation	Area ('000 hectares)
Congo	Odzala-Koukoua National Park	1935/1999	1250
Gabon	Minkébé National Park	1997/2002	757
	Ivindo National Park	1971/2002	300
	Mwagna National Park	2002	116
Cameroon	Boumba-Bek National Park	2005	309
	Nki National Park	2005	238
	Dja Fauna Reserve	1950	526
	Mengame Gorilla Sanctuary	2001	122
Total			3618

Most of the TRIDOM landscape is covered by forest, including dense mixed forests rich in Meliaceae, Ulmaceae and Sterculiaceae (in particular *Triplochiton scleroxylon*) with an abundance of *Terminalia superba* and *Lophira alata*; forests scattered with Marantaceae; forests with a monodominance of *Gilbertiodendron dewevrei*; and young and old secondary forests with *Musanga*. Common timber species are *Entandrophragma utile* (sipo), *E.cylindricum* (sapele), *E. angolense* (tiama) and *E. candollei* (kosipo); combined, these make up 90% of exports of sawnwood from northern Congo and their abundance explains the interest of logging companies in the region.

In Cameroon, logging is becoming an increasingly important part of village economies, especially since 40% of the taxes collected on logging are transferred to the communities but also because community forestry is growing in significance there. In Gabon there has been an increase in the practice of 'family felling', which is affecting bands of trees located within 5 km of roads. No community forests have yet been designated in these areas and the local people sub-contract logging to medium-sized companies. This is a new source of quick income for rural populations, but it also has environmental implications. Studies carried out in the Odzala-Koukoua National Park, for example, show that the Marantaceae forests have a tendency to spread, to the detriment of dense forests (Brugière *et al.* 2000).

The TRIDOM landscape is one of the richest ecoregions in Africa, supporting many species of mammals, including the western lowland gorilla and forest elephant, and a diversity of endemic birds, amphibians, fish and swallowtail butterflies. The region also provides food, materials, medicine and cultural resources for over 20 million people and plays an important role as a sink for and potential source of global emissions of carbon dioxide. In the majority of the landscape the average human population density is 1–2 inhabitants per km^2, but it reaches 3–4 inhabitants per km^2 in the Djoum and Somalomo regions in Cameroon.

TRIDOM landscape

Tri-national Dja-Odzala-Minkébé TBCA

Note: Cameroon's Mengame Gorilla Sanctuary, which is adjacent to Gabon's Minkébé National Park, is not shown.
Source: IUCN.

Vast expanses of the landscape, especially in Gabon and the Republic of the Congo, are totally uninhabited. The majority of people live in villages located along roads and in nine larger towns (see table below).

Big lights

The principal towns and cities of the TRIDOM landscape

Country	Town or city	Number of inhabitants
Cameroon	Yokadouma Lomié Djoum	15 000 4000 3000
Gabon	Makokou Oyem	12 000 23 000
Congo	Ouesso Sembe Souanke Mbomo	18 000 3000 5500 5000

The main ethnic group is Bantou composed of the Fang, Badjoué, Bulu, Kwélé, Kota, Nzime, Ndjem, Mboko, Bonguili and Sangha-Sangha. In addition to this group, which mostly comprises farmers, are Ba'aka and Bakola Pygmy communities, whose cultural attachment to their forests and their dependence on subsistence hunting and gathering make them extremely vulnerable to the enforcement of hunting control measures established to target commercial operators.

The area faces increasingly severe threats which have a number of diverse and interlinked root causes. In addition, a limited public-sector capacity to plan, oversee and control natural resource use, as well as the absence of a mechanism for coordinated transboundary activities, is contributing to the unsustainable exploitation of natural resources in the landscape.

The main objective of our project was to improve transboundary conservation management in collaboration with key partners and institutions in order to reduce pressure on the TRIDOM landscape. The project was initiated in 2007 by the Specialized Research Centre on Forest and Environment (CEREFEN) in collaboration with the National Forestry Department staff of Cameroon, Gabon and the Republic of the Congo.

Data were collected through desk and field studies and a range of rapid participatory diagnosis techniques. Measures undertaken by the project were:

- the identification of existing community groups that could constitute an entry point for project interventions in the landscape, and a review of their capacity needs for the uptake of best-bet natural resource management practices
- the introduction of agricultural and agroforestry innovations to forest-fringe communities in order to intensify agriculture outside the forest and provide incentives for communities to adhere to forest management objectives
- baseline desktop and field surveys and establishment of a database and library
- establishment of a system for long-term monitoring of forest ecosystem integrity and land-use patterns
- development of research and dialogue approaches involving all stakeholders in decision-making processes and the definition of landscape-level visions for long-term management.

Through desk studies and meetings with individuals and institutions, the stakeholders of the bushmeat industry were identified as: traditional hunters (groups, individuals); rural communities; bushmeat traders (buyers, sellers); urban society; state agencies charged with wildlife conservation and protection; international and national conservation institutions; the donor community; logging and mining companies; and policymakers. These stakeholders perform the five major functions of production, consumption, supply, management and research support.

The study revealed that biodiversity conservation in the TRIDOM landscape is realized by different stakeholders at three levels:

- the local level, composed of ethnic groups or Indigenous populations with socially and culturally oriented values
- the national level, represented by governments and logging companies with economically oriented values
- the international level, represented by international NGOs, funding agencies and development programs with ecologically oriented values.

The rapid participatory diagnosis revealed that:

- Major livelihood activities are agriculture with plantain, groundnuts, maize and vegetables, hunting and fishing, timber exploitation and NTFP gathering.
- Constraints to livelihood improvement are the loss of soil fertility, low yields from local crop varieties, and the absence of alternatives to the intensive use of forest land and resources (hence the destructive impact of use on the resource base).
- Forest management was considered by the communities to be the sole responsibility of forestry officers.

The main threats to biodiversity were the same in all three countries, albeit with varying intensities as a function of accessibility and proximity to urban centres. They were:

- livelihood-related, such as illegal timber harvesting, farming, and poaching
- governance-related, such as
  - the absence of an efficient resource management structure at the grassroots level
  - consequent inequity in resource use and benefit-sharing.

The following biodiversity conservation corridors are proposed in the area:

- a cross-border corridor between the protected areas of the Dja, Nki and Minkébé
- a cross-border corridor linking the Minkébé forest with a relatively new protected area in Cameroon (the Mengame Gorilla Sanctuary)
- a conservation corridor between Odzala-Koukoua National Park and the forests of the Djoua and the Ivindo National Park
- a conservation corridor linking the forest of Minkébé to the forest of the Djoua and the Odzala-Koukoua National Park.

The most endangered species in the landscape include elephants (*Loxodonta africana),* the western lowland gorilla *(Gorilla gorilla)*, buffalo *(Syncerus caffer)*, the bush pig (*Potamochoerus porcus)*, chimpanzees (*Pan troglodytes)* and the hippopotamus due to disruption of critical habitats. Some timber species, including *Baillonnella Toxisperma, Entandrophragma utile, E.cylindricum, E. angolense* and *E. candollei,* are threatened by illegal logging and by deforestation from slash-and-burn practices.

The real impact of the disappearance of the elephant is difficult to evaluate because the forest 'reacts' slowly to ecological modification. The elephant may play a very important role in forest ecology: for example, moabi (*Baillonella toxisperma*), a very slow-growing species, is highly desired by loggers. By transporting fruit from protected areas to the concessions, elephants may compensate for the increased scarcity of the trees.

Although most signs of gorilla presence were found in secondary vegetation, they were also found in agricultural fields on the edges of human settlement. In contrast to the gorilla, chimpanzees are widely distributed, occurring in primary forest as well as in secondary vegetation.

Surprisingly it was found that the logging and protected areas had complementary roles in the maintenance of species' populations. Many large mammals used different parts of the landscape at different times of the year and moved freely between protected and logged-over areas. Some common game species, such as *Atherurus africanus* (the African brush-tailed porcupine) are resilient to human pressures such as habitat degradation and hunting

Dialogue between border communities and resource managers is effective at the grassroots and regional level, and communities are now open to collaboration with the state in preserving biodiversity. We have learnt that:

- It is important to provide farmers living in or near protected areas or threatened ecosystems with the right incentives for forest conservation.
- If local people living in and around TRIDOM are granted the right to make resource-related decisions, they will embrace the responsibility to sustain those resources.
- The improvement of livelihoods will remove the necessity or justification for beneficiaries to continue with unsustainable or undesirable livelihood practices (e.g., slash and burn, wildlife poaching, illegal lumbering and illegal trading) to meet family needs.

Cleared: Slash-and-burn agriculture for cocoa plantation in the TRIDOM landscape. *Photo: G. Ngono*

- Conservation corridors between protected areas can improve connections between habitats and facilitate ecosystem dynamics through the flow of resources and energy and by accommodating the complex interrelated processes of ecological systems.
- While political boundaries provide certain benefits in terms of organization, they make it difficult to coordinate the activities of the individuals, organizations and communities separated by those boundaries. In conservation, boundaries maintain distinct zones on the landscape that reflect anthropogenic priorities, which affect the management and of wildlife, plants, and water .

Recommendations include:

- The TBCA development process should seek to empower people to solve problems actively by fostering participation, self-confidence, dialogue, joint decision-making and self-determination.
- International commitments for the conservation of genes, populations, species and assemblages of species or habitats should be reflected in the legal and regulatory frameworks guiding the allocation and use of land for production forestry.
- More use should be made of stakeholders' traditional or Indigenous site-specific knowledge on natural resource management and traditional conservation systems.