

Case Study 3 - Protected Areas Land Use Planning : Lessons Learned from the Tayna Community-Managed Nature Reserve

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Introduction

In 2000, more than 150 international scientific experts convened a workshop in Libreville, Gabon to determine priority areas for the conservation of terrestrial ecosystems within the Congo Basin¹. This workshop led to the identification of 11 Priority Landscapes² that formed the basis of multiple conservation interventions for the Congo Basin Forest Partnership (CBFP) launched in 2002 at the World Summit on Sustainable Development in Johannesburg, South Africa.

Unknown to these experts, another workshop was taking place in 2000 in eastern Democratic Republic of Congo (DRC). As the civil war still raged, traditional chiefs of the Bamate and Ba-

tangi Nations were in the mountains of North Kivu meeting with their constituencies and discussing how they could develop a community conservation programme, an initiative they launched in 1998. This programme was spearheaded by Pierre Kakule Vwirasihikya, who had been an ICCN³ warden for 15 years, but was on a leave of absence. Pierre was born in the region and had learned first-hand both the need for conservation and the difficulties faced by traditional, government-run national parks. Realizing the potential for a protected area for gorillas in the mountains near where he spent his childhood, he enlisted the support of the traditional paramount chiefs (Mwamis) of the Batangi and the Bamate peoples, Mwami Stuka Mikundi II and Mwami Mukosasenge II (Figure 1), to catalyze a commu-

¹ This workshop is described in Kamdem-Toham, A. et al. 2006. A Vision for Biodiversity Conservation in Central Africa: Biological priorities for conservation in the Guinean-Congolian forest and freshwater region. Washington, DC: WWF.

² A 12th landscape was later added to the CBFP Priority Landscapes: The Virunga National Park (and its surrounding buffer zones) in eastern Democratic Republic of Congo.

³ ICCN is the Institut Congolais pour la Conservation de la Nature (Congolese Institute for the Conservation of Nature), the DRC wildlife and parks authority.



Figure 1. Founders of the Tayna community conservation program. Center - Pierre Kakule; with founders of the program, Mwami Mokasasenge (left) and Mwami Stuka (right). These days, leopard skin hats are synthetic.

nity-managed project to create the “Tayna Gorilla Reserve”.

The Tayna model proved successful. By late 2002, seven other community associations had joined Tayna, creating a political federation called UGADEC (the Union of Associations for Gorilla Conservation and Development in Eastern DRC), with the goal of establishing a series of similar reserves for an area of more than 12,000 km² (the proposed integral zones⁴), creating a biological corridor between Maiko National Park (10,000 km²) and Kahuzi-Biega National Park (6,600 km²), and working hand-in hand with the ICCN to preserve biodiversity (Figure 2). This integrated approach between communities and national park management authorities was first supported by Dian Fossey Gorilla Fund International (DFGFI) in 2000 and was significantly strengthened when CI formed a strategic partnership with DFGFI in 2003.

By 2006, the Tayna Nature Reserve, as well as another UGADEC project member, the adjacent Kisimba-Ikoba Reserve, were both declared Nature Reserves (for their integral zones, 900 and 970 km², respectively) by the Minister of Environ-

ment, becoming part of the official network of protected areas in the DRC. Significantly, these declarations were accompanied by unique co-management plans, in which the ICCN entered into a legal agreement with the local communities (represented by NGOs based on traditional/customary governance) such that these NGOs were sub-contracted to manage their reserves in perpetuity.

In the sections that follow, the history of this unique grass-roots approach to conservation is chronicled to provide an understanding of how this programme developed locally and was then successfully supported by the international conservation community. From the history of this programme, we can also extract a number of lessons learned, with the hope that the approach can be replicated in other areas of DRC, other communities in the tropical forests of the Congo Basin and perhaps in other areas across the globe.

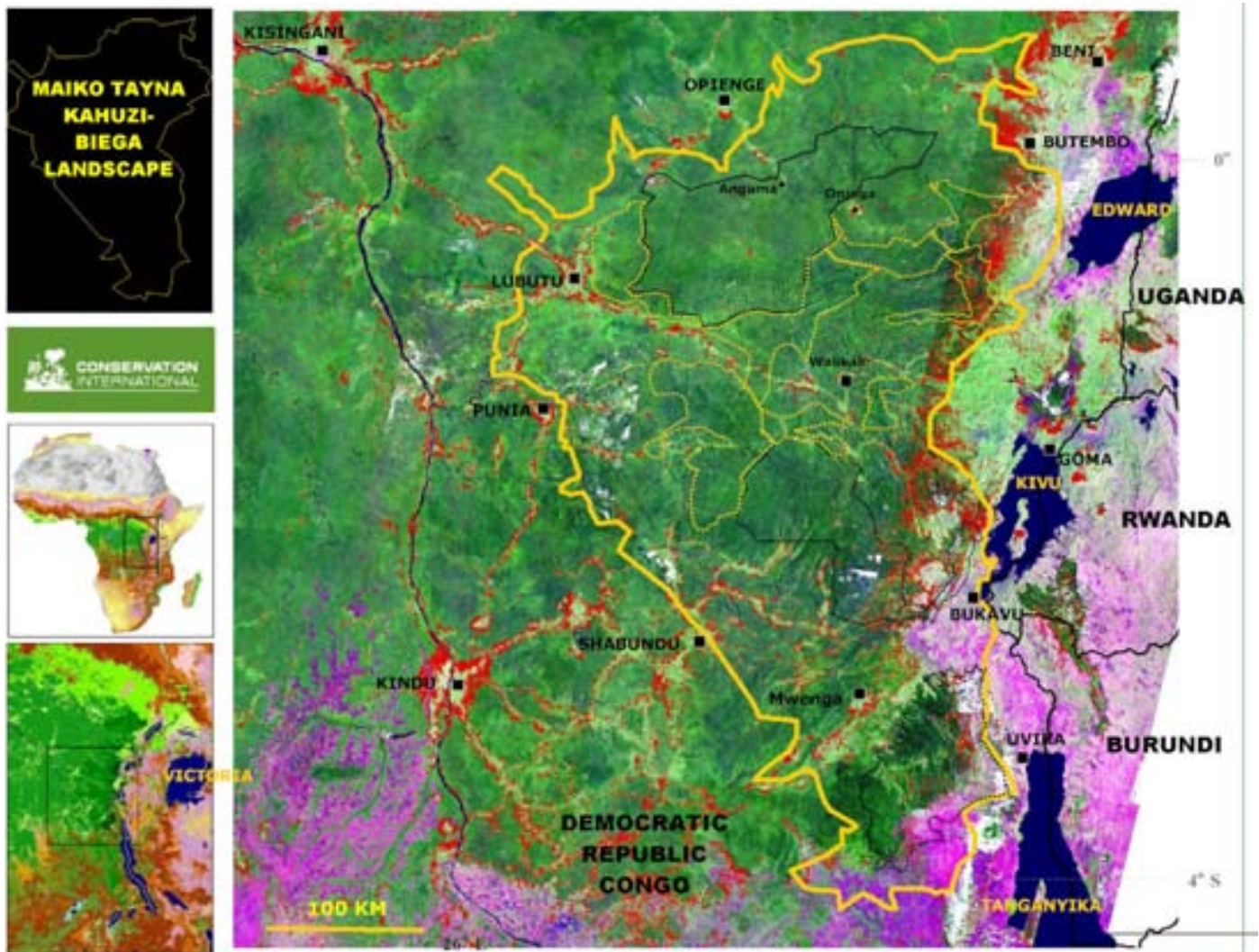


Figure 2. Tayna Nature Reserve (A) and the similarly managed Kisimba-Ikobo Nature Reserve (B) with 6 other projects (C1-C6) form the UGADEC Federation. The UGADEC community conservation zone forms a biological corridor between (and with) the Maiko National Park (D) and the Kahuzi-Biega National Park (E), which are located in the CBFP Maiko Tayna Kahuzi-Biega Landscape (yellow). Red areas indicate deforestation between 1990 and 2000 (satellite image courtesy of University of Maryland, CARPE program). A further Nature Reserve area, Itombwe, is located in area F.

⁴ The integral zone (from the French term) is a core protected area; it is completely protected and does not permit extraction of any kind.

⁵ A “Wilderness Area” is defined by having 70 percent of its original habitat still intact; a “High-Biodiversity Wilderness Area” is defined similarly, but contains more than 1,500 endemic plant species, and along with Hotspots is how Conservation International sets its priorities throughout the world. A Hotspot is defined as having lost more than 70 percent of its original habitat, and contains more than 1,500 endemic plant species. The “hotspots” concept was first articulated by British ecologist Norman Myers in 1988 and adopted by CI as a priority-setting framework in 1989. See Mittermeier, R.A., Robles Gil, P., Hoffman, M., Pilgrim, J, Brooks, T., Mittermeier, C.G., Lamoreux, J. and da Fonseca, G.A.B. 2004. Hotspots Revisited. Cemex Books on Nature; Mittermeier, R.A., Mittermeier, C.G., Brooks, T., Pilgrim, J., Konstant, W., da Fonseca, G.A.B. and Kormos, C. 2003. “Wilderness and biodiversity conservation”. PNAS 100: 10309–10313.

⁶ Tayna is home to a suite of globally threatened large animals typical of the region, such as the Eastern chimpanzee (*Pan troglodytes schweinfurthi*), the African forest elephant (*Loxodonta africana cyclotis*) and Grauer’s gorilla (*Gorilla berengei graueri*), as well as a number of species found only in the Albertine Rift (for example, there are reports of a completely black morph of the forest leopard, *Panthera pardus*, the Endangered Ruwenzori morph). These restricted-range species include several poorly known, threatened birds, such as the Albertine owlet (*Glucidium albertinum*), as well as locally endemic mammals, such as the Ruwenzori sun squirrel (*Heliosciurus ruwenzorii*) and the Ruwenzori otter shrew (*Mesopotamogale ruwenzorii*). Also see, *The Forests of the Congo Basin: State of the Forest 2006*, pp.198–205, <http://www.cbfp.org/>.

Ecology and history of the Tayna region

The Tayna Nature Reserve is situated in a transition zone between the lowland forests of the High Biodiversity Wilderness Area of the Congo Basin and the highlands of the Albertine Rift, part of the Eastern Afromontane Hotspot⁵. It ranges in altitude from 850–2150 m, and holds exceptionally high levels of biodiversity and globally threatened species, such as Grauer’s gorillas, Chimpanzees, Okapi, Forest elephants, and 14 species of primates⁶.

The Tayna Reserve lies within two chefferies (chiefdoms)⁷, the Batangi and Bamate chiefdoms, who have become so intertwined socially and politically that it is virtually impossible to map them separately (see Figure 4 for the location of the Batangi Bamate Chefferie within the Territory of Lubero). They are part of the Banande People (Bantu), living in North Kivu, and share close affinities with other Banande such as the Bapare, Bashwa, etc.

The oral traditions of the Bamati and Batangi⁸ recount that their ancestors arrived in the Albertine Rift in the highlands west and north-west of Lake Edward more than 500 years ago, as part of a wave of Banande immigrants fleeing land disputes and tribal warfare in Uganda. Despite the centuries they spent expanding into the Albertine Rift, their oral traditions indicate a much more recent arrival in the mountains of the present-day Tayna Reserve: they suggest the first pioneers moved into these mountains seeking new hunting grounds and agricultural fields only about 200–250 years ago.

By the period of colonial rule, at the beginning of the 20th century, Belgian-led expeditions began entering the area to hunt elephant, trade for ivory and to explore for mineral wealth (primarily gold).

In the 1920s they began construction of a dirt road from Beni to Mbohe, west across Tayna, and then west north-west to Oninga, a small mining centre (Figure 2, visible now as agricultural fields and small villages following the long-degraded road system; also see Figure 3). They never completely finished a road between Oninga and the Anguma gold mine, which would have crossed the present-day Maiko National Park (Figure 2).

In the 1930s, the Belgian colonial authorities declared the majority of the present-day Tayna Reserve to be the “South-west Lubero Hunting Reserve” identical to the “hunting reserve” created at that time for what is present-day Maiko National Park. In reality, these reserves were not gazetted for hunting; they were created to limit migration into the area by local people seeking their fortunes looking for gold and diamonds. While doing this, the Belgians simultaneously developed one of the largest alluvial gold mines in the region at the Lutunguru gold mine (location indicated in Figure 3), which at its peak in activity in the 1930s had more than 15,000 miners working and living in camps in the area. Of historical note, an even larger mining camp developed near the deep-shaft gold mine in Maiko NP at the Anguma mining site (Figure 2).

In 1959, Schaller and Emlen surveyed this area⁹ and reported several pockets of forest with Grauer’s gorillas, but what was once surely a contiguous block of forest from Tayna to Tchiaberimu (near Lake Edward, Figure 3) had by the time they conducted their surveys already become fragmented by increasing human population pressure.

⁷ Administrative organization in rural DRC is by Province, then Territory, then Chefferie (Chiefdom, formerly called a Collectivité chefferie) or Sector.

⁸ The Bamati and Batangi are two tribes of the Tayna area, who through intermarriage and land-use sharing have substantially intermingled over the last century; they share a very similar oral history.

⁹ Emlen, J.T. and Schaller, G.B. 1960. “Distribution and status of the mountain gorilla (*Gorilla gorilla beringei*), 1959”. *Zoologica* 45: 41–52; Schaller, G.B. 1963. *The Mountain Gorilla: Ecology and Behavior*. Chicago, IL: University of Chicago Press. Also reviewed in reference xvi.

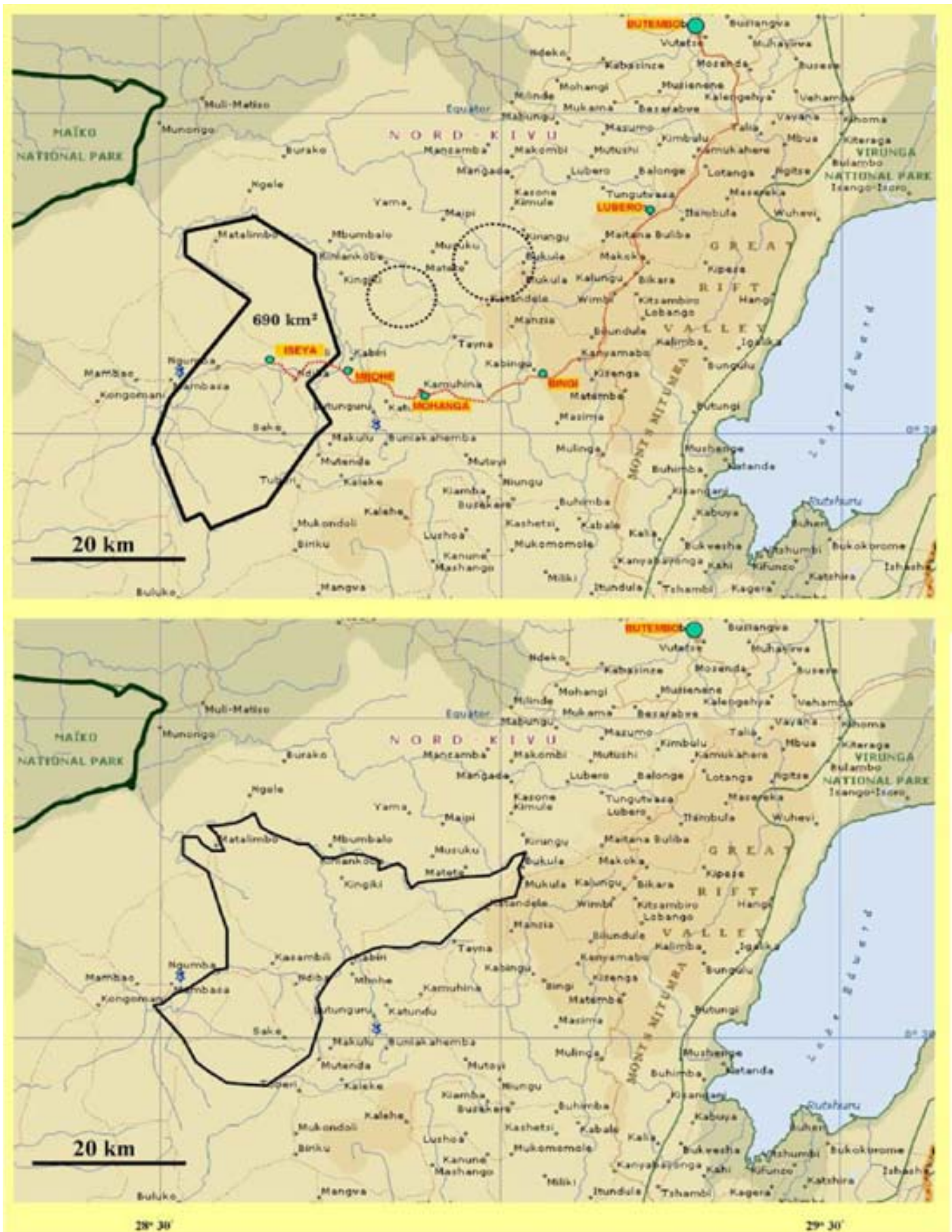


Figure 3. A comparison of the original boundaries proposed for the Tayna Nature Reserve (upper) with the final configuration (lower, see text). One of the principal access routes into the reserve is shown in the upper figure. An asterisk marks the location of the Tayna Center for Conservation Biology University.

1998–2000: Local origins of the Tayna community conservation programme

Eager to update some of Schaller and Emlen's 1959 surveys, in June–July 1997, Thomas Butynski and Esteban Sarmiento revisited the area near the present-day Tayna Reserve, arriving almost at its current eastern limits in the village of Mbuhe (Figure 3). In discussing the reported presence of rich wildlife west of their position, they suggested to local community representatives (Mwami Stuka and others) that the area might be protected through some kind of community action. Following this suggestion, Pierre Kakule and Mwamis Stuka and Mukosasenge realized the area's potential for future ecotourism and ecosystem services, and having watched their forests disappear to commercial cattle ranchers and agricultural settlements creeping west, they began discussions with their local village chiefs surrounding present-day Tayna as to how this might be accomplished. By 1998, the Mwamis had banned the use of shotguns in the area and were considering the creation of a communal reserve in a mountainous forest with only the presence of a dozen small villages west of Mbuhe (Figure 3). Equally important to them, they noted the presence of Chimpanzees to the north-east of their first target area near the important cultural village of Kasugho, which contained a sacred forest, a waterfall, and a series of caves, and thought that this could also be gazetted as a separate reserve (Figure 3).

From the beginning of 1998 through mid-2000, despite the civil war raging in their area with various battles between armed militias and foreign armies (Congolese Mai Mai, Rwandan Interhamwe and Congolese rebel forces, the MLC and RCD¹⁰, as well as the Ugandan army), Pierre and the Mwamis kept the idea of a com-

munity reserve alive and continued discussions with local people as often as possible. In 2000, Pierre Kakule created a local association, the RGT (La Réserve des Gorilles de Tayna – Gorilla Reserve of Tayna¹¹) composed of about 10 staff members (with no salaries) who came from the area. In 2000, the RGT began to seek help from several international conservation organizations, but the civil war (and risk aversion on the part of the NGOs) prevented any significant action at that time.

2001: International support for the Tayna project

From April 2001 to the present day, the RGT began to receive significant amounts of international financial and technical support. In April 2001, Tayna signed its first contract with DFGFI, in which Tayna accepted DFGFI as its “primary partner” (UGADEC signed an identical agreement in 2002). In doing so, they agreed to the principle that all financial and technical support to Tayna would be channeled through a single international partner, DFGFI. It was felt by both parties that this would eliminate multiple donors with multiple (and sometimes contradictory) technical inputs. The primary partner agreement first signed in 2001 is still in effect today eight years later, and is the fundamental basis with which Tayna (and UGADEC) receive international support.

2001–2003: Support from the Dian Fossey Gorilla Fund and the US Congressional “Gorilla Directive”.

In mid-2000, Tayna staff requested a donation from Dr Liz Williamson, then-Director of the Kari-

¹⁰ MLC was one of the rebel factions during the civil war backed by Uganda, the Movement for the Liberation of Congo (Mouvement pour la Libération du Congo); RCD was another rebel faction backed by Rwanda, the Rally for Congolese Democracy (Rassemblement Congolais pour la Démocratie); Interhamwe are illegally armed Rwandan militia in DRC who, being responsible for the Rwanda genocide, fled into DRC; Mai-Mai were (and in some cases, still are) locally based Congolese militia formed during the civil war to resist external rebel forces such as the MLC or the RCD.

¹¹ The Tayna Gorilla Reserve (La Réserve des Gorilles de Tayna – RGT) received local NGO status in 2001, and was legally registered in DRC in 2005 (when it received its “personnalité juridique”).

LESSON LEARNED 1

Support local initiatives as opportunities arise, but only after feasibility and due-diligence studies are conducted to calibrate potential conservation outcomes with an appropriate level of investment. Local people sometimes present autonomously developed projects to international NGOs. It is highly desirable to support these projects, but only after initial due-diligence and feasibility studies. It is best to begin a first phase with small grants to assess their capacity to manage funding and achieve conservation outcomes. In some cases, a Primary Partnership between a local and an international NGO is advantageous, since it channels funding and technical inputs from a single partner to the local NGO, and can avoid multiple (possibly contradictory) conditions and objectives associated with several funding sources.

soke Research Center, DFGFI, and she secured a small fund to support community meetings for Tayna that took place in late 2000. By February 2001, Pierre Kakule met again with DFGFI senior staff (the author and Dr Dieter Steklis), and presented a plan and local maps that had been created by community members. DFGFI was interested in the visionary approach of the Tayna group, and the author made arrangements for a due-diligence trip into Tayna a month later. In March 2001, the author traveled from Butembo to just beyond Bingi by road, and made his way to Iseya, a small village located within the targeted area for the reserve (Figure 3). During this trip, he met the Mwamis, village chiefs and community members who made clear their desire to create a gorilla reserve. The author did as much biological prospecting as was possible

given the conditions, and confirmed the presence of gorillas and healthy forest blocks within the tar-

geted reserve area. The author became convinced that creating a community reserve was not only feasible, but desirable, in that local communities were leading the process, rather than a more traditional approach of creating a protected area from the top-down, usually led by government authorities and international conservation NGOs. From March–October 2001, DFGFI provided approximately US\$65,000 to support the Tayna Reserve. In October 2001, DFGFI successfully obtained an award from the US Congressional “Gorilla Directive” (administered by USAID), and with DFGFI internal funding, from then until September 2003, was able to provide Tayna (and other project members from UGADEC) direct operations funding at approximately US\$215,000 US for each of the two years.

2003–2008: Support from DFFGI, Conservation International (CI) and the USAID CARPE¹² and Gorilla Directive programmes.

By 2003, the ongoing CBFP process and the Tayna community conservation programme successfully intersected. One of the landscapes identified in the CBFP process was the Maiko Tayna Kahuzi-Biega (MTKB) Landscape and the zone between Maiko and Kahuzi-Biega NPs was precisely where Tayna had begun its programme and scaled it up with other UGADEC communities (Figure 2). By chance, this guaranteed an essential role for DFGFI in the incipient Landscape programme, since it was the primary partner for Tayna and UGADEC, and was working with communities outside of (and between) National Parks within the MTKB Landscape. As proposals were being called for by the USAID CARPE programme, DFGFI and CI created a strategic partnership to support the UGADEC community zone and Maiko NP in order to submit simultaneous

¹² CARPE is the Central African Regional Program for the Environment (Phase I began in 1995). Phase II, begun in 2003, was specifically designed to support the 11 Priority Landscapes of the Congo Basin Forest Partnership. CARPE II is divided into CARPE IIa (October 2003–September 2006) and CARPE IIb (October 2006–September 2011).

¹³ Direct funding figures quoted here are estimations of those funds that were directly provided to Tayna, UGADEC and the Tayna Center for Conservation Biology; they exclude Maiko National Park, and operational funding and administrative fees for DFGFI and CI.

proposals to CARPE and to CI's Global Conservation Fund (the latter providing match funding to the CARPE programme). These awards were successfully obtained, and with DFGFI's third and final year of the Gorilla Directive Funding, DFGFI internal funding, CI's Global Conservation Fund, and CI's award from USAID CARPE Phase IIa, the Tayna and UGADEC community conservation programme received US\$1,750,000 in direct operations funding from October 2003–September, 2006¹³. This partnership and funding arrangement has continued from late 2006 until today, with support from USAID CARPE Phase IIb, CI's Global Conservation Fund, DFGFI internal funding, and special CI donors.

2001–2006: Development and implementation of the Tayna programme

As noted above, the vision for a community-based gorilla reserve for the Tayna area of North Kivu did not originate in Washington, Paris or Kinshasa, but rather with the inspired leadership of the customary powers from the region. By the time international funding first arrived, they had a clear vision that they wanted to protect gorillas. They understood that this could improve local economic development through ecotourism, through development incentives linked to conservation outcomes, and through simply hiring and paying local staff, whose salaries would circulate locally in a very impoverished area. They had identified a mountainous region within their chefferie where intact forests and gorilla populations still remained. They had discussed creating a reserve with local stakeholders (village and clan chiefs, local landholders, village inhabitants) despite having to deal with the tragedy of civil war sweeping through their villages on many occasions¹⁴.

Below, the various phases of the development and implementation of the Tayna project are described from early 2001 until today, as it now func-

LESSON LEARNED 2

Conservation work in contexts of civil strife (or civil war) must attempt to remain apolitical at all times. The success of this project, as it developed in a context of civil war, can largely be attributed to it maintaining an apolitical stance, and its representation by local people who were well-known in the area and who were willing to talk to every side to advance their conservation cause. The international sponsor, DFGFI, left all local political matters completely in the hands of the local NGO, the Tayna Gorilla Reserve Project.

tions as one of DRC's official protected areas.

Start-up phase for the Tayna project. By early 2001, DFGFI and Tayna staff had conducted a number of planning meetings and concurred that the first actions to accomplish would be to:

- Complete the receipt of formal NGO status for the Tayna working group;
- Establish an agreement between the Tayna group and the ICCN;
- Hire, equip and train field staff who could immediately begin work in and around the area targeted for the community reserve, to both conduct rigorous biological censuses and to provide more extensive awareness raising with the local population.

Interactions with “government” during the start-up phase. In mid-2001, the RGT received formal status as an NGO in eastern DRC. Because Goma was controlled by a rebel government at that time, NGO status was obtained from RCD Goma officials (by 2005, the RGT had applied for and received NGO status through the new unified DRC government in Kinshasa, obtaining a Personnalité Juridique). In mid-2001, the RGT also entered into a Memorandum of Understanding with the ICCN through their officials

¹⁴ It is important to note that when this project first received funding during the civil war, their region was partially controlled by various armed factions, such as the Mai-Mai, the Ugandan army, the MLC, and on some occasions, RCD Goma. This created a political context in which there was simply no central government. For the region of the incipient Tayna reserve, the only truly functioning government entity during this time was the traditional, customary powers.

LESSON LEARNED 3

When hiring and training field staff, hire locally and be willing to hire former hunters.

All staff hired for this project were from the Tayna area, and since one of their primary duties was to sensitize local people, they could not have succeeded if they had not been local people. Former hunters were hired as trackers, and with a regular salary, made much more for themselves and their families than they would have gained from subsistence hunting and local trade of bushmeat. Most remain with the project today.

stationed with RCD Goma, and with the MLC, which controlled much of North Kivu. Since Mai-Mai militia groups also controlled the reserve area, the RGT also met with them and explained their apolitical status, obtaining permission to conduct field work. During the time the Mai-Mai controlled the area, they insisted on supporting the RGT by providing protection against other illegally armed groups by accompanying RGT and DFGFI staff on field missions.

Deploying field staff for Tayna. Field staff for the project were recruited from the Tayna region. Amongst the first 25 field staff, there were 15 “rangers/guards” and 10 trackers, the former being young men who had left the area to obtain university degrees and in a few cases, ICCN training, and the latter being local men living in the area as hunters and agriculturalists (in several cases, the sons of village and groupement chiefs). The first funding support went to equipping and paying the RGT field staff as well as to creating an office in Goma. Field staff created a small camp at Iseya (Figure 3) with tents and traditional huts. Field staff received blue uniforms to distinguish them from all other groups in the region, and they were provided typical field equipment, such as tents, backpacks, binoculars, compasses, etc., as well as GPS units and satellite-image-based maps. A small supervisory staff of four to six RGT employees remained in Goma (as well as Butembo) to deal with administration, finance and NGO relations. In the first year, foot

LESSON LEARNED 4

Train field staff immediately on the use of satellite imagery and how to geo-reference their field work.

Traditional hand maps were essential for working with local people, but very early in the project, field staff were trained to translate these into geo-referenced maps. This was essential to the project in order to understand boundaries and customary claims, to understand the collection of biological and socio-economic information related to previous published work, and for the staff to navigate efficiently in a mountainous and difficult field context.

messengers were responsible for all communications between Goma and Iseya (later, radio communications were established between Iseya and Goma). The RGT, in developing its identity, made an immediate decision to use the title of “Guide”, rather than “guard” or “ranger”, emphasizing that field staff were there to “guide” the local population in conducting community conservation, rather than assuming a police function usually associated with traditional national park staff. The Tayna guides and trackers were unarmed (as they are today).

Early training – biological data. In discussions with DFGFI scientific staff, the Tayna group determined the first objective for this initial phase of work: to transform traditional knowledge about the location of intact forests and presence of gorilla, chimpanzee, and elephant populations into a quantified and geo-referenced database that would enable them to target limits for their reserve. It was presumed that protecting these forest blocks would, by default, protect the full range of biodiversity and ecosystem processes, a position the Tayna group rapidly reached as they become more fully aware of the IUCN Red List and international protected area efforts. As a result, they transformed their original concept from only protecting gorillas to creating a fully functioning, internationally-recognized protected area.

To enable the Tayna group to create this database, in June 2001, the author, Stuart Nixon and Pierre Kakule (DFGFI employees at the time) traveled to Iseya and provided the first biological training for the staff in a “learn by doing” approach. Until that time, staff had been using traditional maps (both hand-made and government maps which often dated back to the colonial area) to understand better the location of small villages, geographical markers (rivers and mountains), the location of gorilla populations, and the location of important forest blocks relative to degraded or active agricultural areas. This was an opportunity to upgrade and fully modernize their tool kit.

In this first training, the RGT field staff were introduced to satellite mapping, the use of GPS units for field orientation and to record the location of all geographical data. They learned to identify the presence of all fauna (not just gorillas) and were trained in identifying IUCN Red-listed species. Importantly, they were also trained in how to create and cut line transects, and conduct censuses along these, collecting data on the presence of all fauna and anthropogenic disturbance. Since RGT and DFGFI both wished to emphasize gorilla protection as the iconic species that represented the reserve, the staff were trained in how to collect quantitative data for gorilla nest sites, using methods the author had developed in the Central African Republic¹⁵, combined with DFGFI’s long experience collecting data on mountain gorillas at the Karisoke Research Center. (One year later, four of the RGT staff traveled to the Karisoke research center in Ruhengeri, Rwanda and received further training. This programme, which had great promise, was cut short by the Rwandan government when it blocked these exchanges, fearful that RGT staff may have had undesirable political affiliations)¹⁶.

Early training: Sensitization/awareness-raising approach while deploying the first development incentives. Training staff to conduct biodiversity surveys was rapid and relatively simple compared to the much more challenging task that the Tayna staff set out to accomplish (and requested DFGFI to assist with): how to work with local people so that they see the advantage of “ceding” their customary rights to hunt or expand their agricultural fields in areas of the reserve. In the start-up phase, field staff, when conducting biological and geographical surveys, were also expected to contact local villages, estimate their sizes, determine their locations, collect initial data on livelihoods and needs, and through communicating the advantages of preserving biodiversity to local people, sensitize inhabitants about the desire of the chefferie to establish a community-based gorilla reserve.

By the time of the first field training session in June 2001, the staff had already contacted many villages and had encountered some challenges. In general, those villages to the east of the reserve had village chiefs who had been sensitized by the Mwamis, and thus had come to understand a long-term vision; they were eager to hear how creating a reserve could benefit their future. In contrast, villages farther west and south were asking tough and pointed questions: “were the Mwamis selling “their” land to foreigners for a profit; was a National Park going to be established that would be run by outsiders; what immediate trade-offs would be offered as compensation, etc?” These initial interactions with locals were the first serious challenge for the RGT. Could they communicate effectively to isolated, local people that a reserve could maintain essential ecosystem services, create opportunities for ecotourism, and in general improve livelihoods and stimulate the local economy?

¹⁵ For more on gorilla nest counts, see Mehlman, P.T. and Doran, D.M. 2002. “Factors influencing western gorilla nest construction at Mondika Research Center”. *International Journal of Primatology* 23(6): 1257–1285.

¹⁶ To emphasize the context of our work at that time, it is important to note that the first training was cut short and had to be completed in Butembo (Figure 3). After a week at Iseya, our group received word that armed forces of unknown origin (suspected Interehamwe) were camped only a few kilometres west of our position and were occupying a neighbouring village, and possibly intent on doing us harm. We immediately left, but two of the RDT supervisory staff courageously decided to go unaccompanied to the village to try to discuss the issue. They were promptly beaten, and taken hostage for three months before we secured their release. They remain with the programme today, one being the Director of UGADEC, and the other being a field supervisor for the RGT. The Interehamwe eventually left the village and today the village actively supports the Tayna Project. Since that initial incident, Tayna staff have never experienced a similar situation.

The leadership of the Tayna group came up with what they believed would be a solution to breaking the “suspicion barrier” in some of their communities. They reached an agreement with DFGFI to provide some pilot development projects in selected villages. These included refurbishing four primary schools and staffing them with teachers, supporting two medical clinics and nurses, and creating a mobile health team that would provide some emergency health care in the area, given the limited resources. They argued that these responses to some of the “critical needs” of local communities would both demonstrate goodwill and a moral commitment on the part of their international partner and provide incentives to local people to become active participants in the reserve project. They also argued

LESSON LEARNED 5

Assist local NGOs conducting sensitization to develop a standardized approach to education, awareness raising, and working with local people on issues of land use and conservation. We discovered that field staff in their enthusiasm to begin working with local people were actually interacting with villages in many different ways, depending on staff personalities, their understanding of the project, and more importantly, the reaction of locals to their message. We discovered a risk of creating perverse incentives, in that villages showing the most resistance to the project were sometimes given more attention and believed (or construed that) commitments for development incentives were being provided them as they ‘negotiated’ their participation in the project. To address this gap, we immediately developed a standardized awareness-raising approach that emphasized the long-term benefits and advantages of the project, rather than a short-term view of opportunity costs incurred through the perceived loss of hunting rights and potential future agricultural expansion.

that the pilot projects should go initially to those villages that supported Tayna, not, in fact, to villages that had been the most resistant. They argued that any other approach would create perverse incentives, and that resistant villages after seeing the progress achieved in neighbouring villages would eventually come to support the project. As time passed, this proved to be correct.

Due to lack of development funding relative to the enormous needs of the impoverished local population, development incentives for the Tayna project could not be calibrated as *quid pro quo* agreements that could offset the short-term opportunity costs of conservation incurred by local resource users¹⁷. The initial challenge, therefore, for the Tayna project was to develop a sensitization and awareness-raising programme for local people that could demonstrate in plain terms the long-term advantages of protecting their biodiversity, juxtaposed against the perception of short-term losses related to giving up rights to hunting and future agricultural expansion.

With the support of DFGFI, the Tayna group then developed a standardized sensitization methodology to be used by the field staff in visits to local villages where they fostered “dialogue committees”:

1. It used local people’s interest in gorillas as charismatic animals in their culture to stimulate interest in protecting biodiversity;
2. It used a Noah’s Ark story to inspire them about their responsibility to be stewards of their biodiversity;
3. It informed people about the IUCN Red list and DRC’s list of protected species;
4. It used local examples of disappearing forest and fauna (loss of forest from cattle ranching; loss of gorillas in the east when they once were common, and loss of bongo throughout the area) to sensitize communities to the existence of environmental threats and the concomitant need for behavioural change as formalized in the deve-

¹⁷ CI’s Conservation Steward’s programme works through an approach called Conservation Agreements; these provide exact *quid pro quo* contracts that specify conservation activities to be accomplished and match these to lost opportunity costs via specific economic and development initiatives.

lopment of a plan for sustainable use of forest and fauna before these resources disappeared altogether;

5. It made local people aware of the potential for ecotourism by describing nearby examples where foreigners were paying to visit gorillas (Rwanda, and previously in DRC, when gorilla tourism was being conducted in the Virungas and at Kahuzi-Biega) and would pay for places to stay, places to eat, and would be interested in buying handicrafts and seeing local culture;
6. It made local people aware of the value of forests for their local watersheds and how designating “no-go” zones would allow populations of fauna to recover from over-hunting;
7. It described how community conservation differed from a national parks approach, and how financial and economic benefits would remain local;
8. It described how community conservation could draw attention to their communities and attract development incentives, and used the pilot development projects as examples;
9. It made clear that no promises were being made for quid pro quo development incentives;
10. It solicited from local people their ideas of the critical needs for their villages;
11. It introduced a concept of participatory mapping, in which local people were encouraged to explain how they used adjacent forests and were introduced to the idea that they could easily cede the use of some of these areas by shifting their usage patterns;
12. It introduced the concept of *vacance de terre*, an official declaration by local people who wished to support the reserve indicating that the designated area for the reserve was not in active use, and there were no future plans to use the area;
13. It established a network of communica-

tions (foot messengers at the time) to facilitate further dialogue and to inform local “notables” (chiefs, landholders, etc.) about further developments such as the presence of field staff conducting studies or sensitization or important meetings of the customary powers.

Armed with knowledge of how to collect biodiversity and basic socio-economic data, as well as an awareness-raising methodology (“armed with knowledge, not guns” became the slogan), the Tayna field staff working with local villages throughout 2001 and 2002, and through a process of convening with local people, began to define what might be a first perimeter for the Tayna reserve (Figure 3). During the same time, some of the field staff assigned to census large mammals and anthropogenic disturbance, completed a grid of about 70 km of line transects, which provided a first estimate that more than 400 Grauer’s gorillas lived within the area they had targeted for the reserve.

The Tayna group develops a first land-use plan and seeks national government recognition

By early 2002, the RGT convened its first General Assembly of village and *groupement*¹⁹ chiefs from the Tayna region. The Assembly, led by Pierre Kakule, was composed of 13 village chiefs and other notables. They discussed the proposed limits of a reserve by evaluating data collected at that time by their staff concerning the distribution of remaining villages in and near the proposed reserve, the distribution of forests and gorillas, and the use of the forests by local people. After negotiations, the Assembly ratified the first land-use plan and agreed that the two chefferies should petition the government to become recognized as a protected area under the new Forest

¹⁸ See Mehlman, P.T. 2008. “Status of wild gorilla populations”. In: Stoinski, T., Steklis, D. and Mehlman, P.T. (Eds) Conservation in the 21st Century: Gorillas as a Case Study, pp.3–56. New York, NY: Springer Press. Note that the figure of more than 600 gorillas referenced in that work includes areas south and outside of the present-day limits of Tayna Nature Reserve (i.e., includes the northern area of Kisimba-Ikobo Nature Reserve).

¹⁹ A grouping of several villages, roughly equivalent to a clan, led by a chief who can convene village chiefs.

LESSON LEARNED 6

With technical advice, a local community NGO developed its own zoning regulations for their nature reserve and community zones consistent with an international approach to biodiversity conservation (Figure 4). The Tayna group developed the following zoning regulations that are in place today :

Integral zone : Level of protection is identical to that of a National Park, i.e., complete protection for all flora and fauna, and no exploitation of any natural resources at present or in the future. The few remaining small villages within the integral zone will be encouraged to relocate by offering “magnet centres” outside the integral zone that provide clinics, schools and alternative livelihoods. Appropriate tourism and scientific study will be encouraged and proceeds will go to the collectivité for reserve management and community development (managed by the customary powers).

Buffer zone : An area extending 5 km from the limits of the integral zone where current residents may remain and may continue their agriculture and pastoral livelihoods, but where no new agricultural clearing and no new immigration will be permitted. Subsistence hunting of non-protected species and extraction of NTFPs by residents will be permitted to continue, using traditional methods (snares, spears, bows, nets made from natural, i.e., non-metallic, materials). Harvest and growth rates of these non-protected species and production rates of NTFPs will be evaluated and monitored by scientific study (with full cooperation and participation of remaining residents), and if subsistence hunting of any individual species (or extraction of NTFPs) is not sustainable, hunting and extraction rights may be limited for appropriate periods of time or by season. Neither logging nor charcoal production will be permitted in buffer zones. Commercial mining in general will not be permitted, but small mining concessions to residents may be granted if consistent with the community conservation and development vision.

Development zone : Zones outside of the Nature Reserve, but within the chefferie where all legal activities are permitted (consistent with customary and national Laws). These zones will receive conservation education and awareness-raising initiatives, and will be targeted for rural development.

Code.

In November, 2002, the first governmental Decree recognizing the Tayna Gorilla Reserve was signed by the Minister of Environment. It established an integral zone with complete protection, and made provisions for a working committee to establish a management plan for the reserve. It is noteworthy that the limits of the integral zone (effectively, the reserve) at that time, were quite different from their configuration today (Figure 3). The evolution of this participatory mapping and delimitation is explained below.

Evolution of the Tayna Reserve integral zone borders 2002–2005

Between 2002 and 2005, the stakeholders of Tayna substantially modified the limits of their integral zone with a shift northward of boundaries in the south and a shift eastward in the north (Figure 3). In the south, this change reflected political realities; in the north-east, the change reflected new knowledge gained from field surveys, as well as new engagement with local villagers through participatory mapping.

LESSON LEARNED 7

Community nature reserve boundaries are created in a context of stakeholder participation and agreements, political realities, and the location of important biodiversity. Because of this grass-roots approach, proposed boundaries can undergo substantial change before a consensus on their final configuration is reached. In this project, technical advice from international NGO partners related to determining a final configuration for the integral zone emphasized :

- 1) keeping the protected area within government-recognized administrative borders;
- 2) working collaboratively with neighbouring communities to increase connectivity of integral zones (this approach was supported by finding funding for neighbours);
- 3) efforts to incorporate high biodiversity zones and maintain connectivity through the creation of “mini-corridors”.

After considerable study of administrative maps, it was realized that the proposed southern borders of Tayna overlapped with the Territory of Walikale. The Tayna Reserve under this configuration would be mostly in the Territory of Lubero where the customary powers for the Batangi-Bamate were located, but would cross over into another territory (Figures 3 and 4).

This approach had been quite natural for the customary powers, since in the area south of Tayna, most villages were Bamate and Batangi, even though they were administratively located in another territory (highlighting the fluid nature of chefferie boundaries compared to administrative boundaries laid down in the colonial era). For the Tayna staff working in the field, it had also been quite natural, since their surveys of gorillas had taken them south through mountainous, uninhabited areas with no biogeographical boundaries.

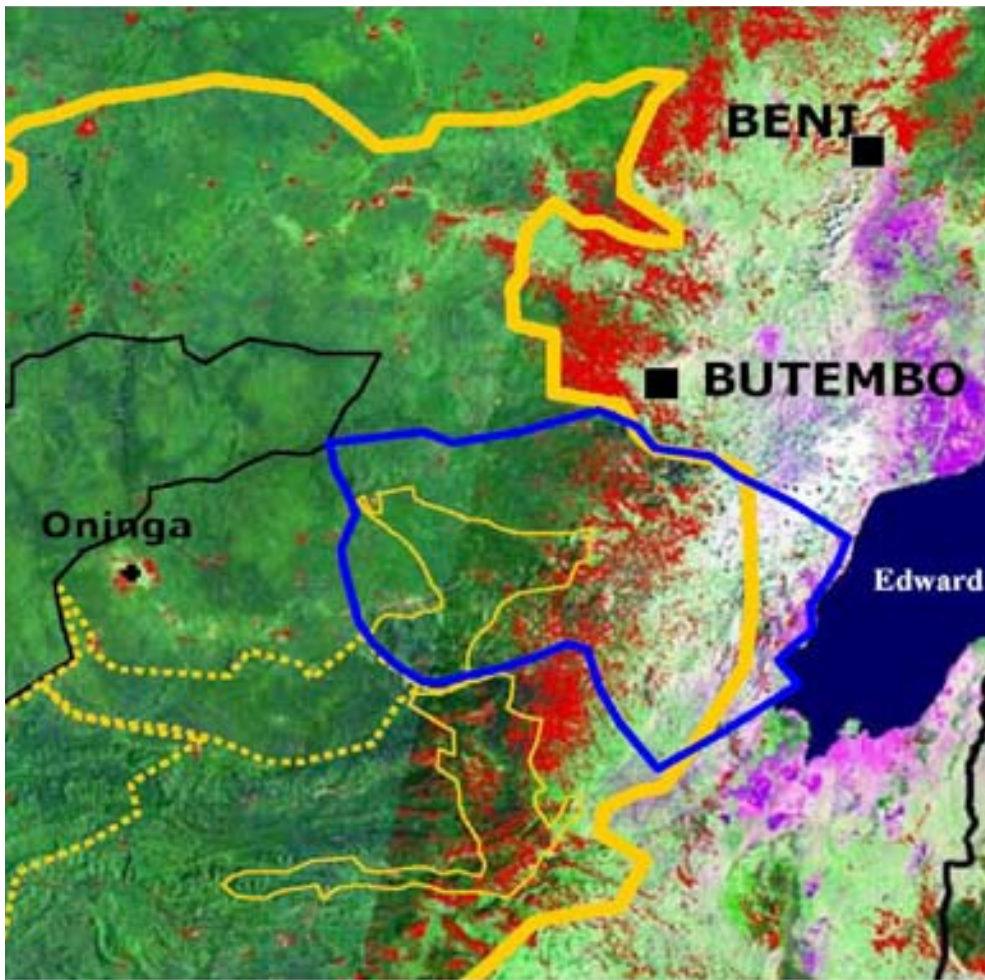
The Tayna customary powers reviewed this issue and made the political decision to keep the Tayna boundaries within “their” Territory of Lubero, and

shifted the integral zone north. This decision, however, was made much easier since their model for community conservation had been taken up by two neighbouring chefferies to the south-east and south-west, with those communities designating integral zones that abutted Tayna’s southern border (Figure 3). In addition, Tayna field staff were already actively training the staff from the two other Reserve projects of UGADEC that bordered Tayna to the south. Ultimately, the boundaries of the three reserves in question (Figure 3) were decided upon after deliberations within the UGADEC Federation and a series of trips to the field to seek stakeholder approval.

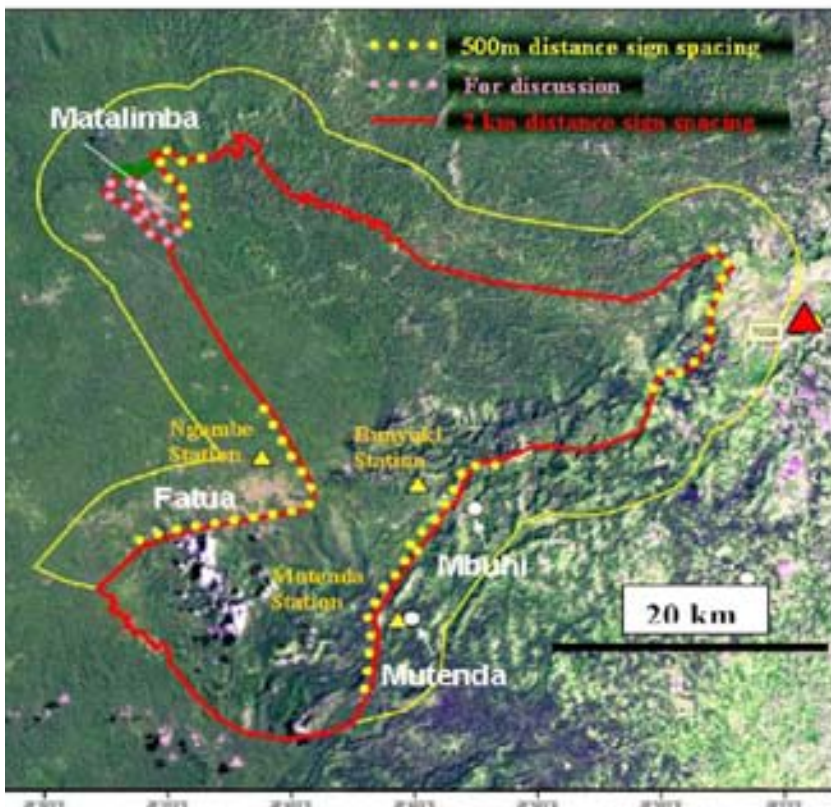
In 2002, the Tayna group had noted on their map the presence of chimpanzees and primary forest north-east of their proposed reserve (two dotted circles in Figure 3), but this was secondhand information provided by locals, since these areas were the most mountainous and isolated terrain in their chefferies (Figure 4). However, during a series of field expeditions by the Tayna staff during this time period, they verified this information and determined that gorillas were also found in some parts of this forested area. During these field trips, they discovered that there were no active villages in this zone and through engagement with local stakeholders living on the periphery of the zone, received agreements from them that they could shift their hunting activities away from the new reserve area. They therefore incorporated these zones into the Tayna Reserve by creating a small corridor that extended northeast (Figure 3). This process was completed before the Tayna group submitted its next application to the National Government to become an officially recognized Nature Reserve (see below).

Obtaining legal status as a DRC protected area and creating a unique community-based management approach

By early 2006, the Tayna group, as well as their neighbours to the south, the Kisimba-Ikobo groupements, submitted proposals to the Ministry of Environment and the ICCN to become officially recognized Nature Reserves. Each proposal in-



Expanded image from Figure 2, showing the boundaries of the combined Chefferies of the Bamate and Batangi Nations (blue). The area of the Chefferies outside the integral zone of the Tayna Nature Reserve (yellow) and the buffer zone (see below) is designated as a Development Zone under the Tayna Management Plan. This area is reserved for rural development and is receiving conservation education and awareness-raising initiatives. Note the intense areas of deforestation just outside the limits of Tayna. Part of the Chefferie extends into Virunga National park on the western border of Lake Edward.



The Tayna Nature Reserve as it gazetted by Decree only includes the completely protected integral zone (red). A five km buffer zone extends around the reserve as part of Tayna's management plan (yellow) but it not necessary in the south where Tayna is adjacent to two other UGADEC integral zones (see text). Boundary demarcation is by signage at 500 m intervals (yellow dashed) or signage at 2 km intervals in deeper forest following well known rivers and geographical boundaries (red). There are three research stations in the south (yellow triangles) and another near the TCCB University (red asterisk). One boundary area (pink) is still being determined with local stakeholders.

Figure 4. Upper figure displays the boundaries for combined Chefferies of the Bamate –Batangi Peoples; lower figure shows the integral zone for the Tayna Nature Reserve with buffer zone and location of signage for demarcation.

cluded the following documentation:

1. Official recognition by the government that the Tayna (and Kisimba-Ikobo) group had received NGO status;
2. A management plan for the reserves, including proposed administrative structures;
3. Documentation that the Tayna (and Kisimba-Ikobo) group had an active Memorandum of Agreement with the ICCN, describing their terms of cooperation;
4. Documentation that the Tayna (and Kisimba-Ikobo) group had notified and sought approval from the provincial and territorial authorities;
5. Agreements signed by local communities that they supported the Nature Reserve projects;
6. *Vacances de terres* (see above) signed by the local customary powers and land users indicating that the land found in the proposed reserves was not in use and would not be needed in the future;
7. The boundary limits for the proposed reserves (integral zones).

These proposals were reviewed by the Ministry of Environment and the ICCN, and were approved and signed into law by the Minister as two separate decrees creating the Tayna and Kisimba-Ikobo Nature Reserves.

Once created, the two Reserves became part of the DRC network of protected areas under the mandate of the ICCN. Management contracts between the ICCN and each of the Reserves' community management groups created a co-management regime in which the local communities were responsible for management of the Reserve, overseen by the ICCN via annual reporting and the creation of a CoCoSi (Site Coordinating Committee) for each reserve.

Recent management activities

Physical boundaries demarcated.

LESSON LEARNED 8

A first priority activity for any community-managed protected area should be to provide a physical delimitation for its boundaries. Local people need physical boundaries to comply with conservation planning. In this project, we learned that a demarcation project needed to be done with and by local villagers in “dialogue committees”. Their participation served to achieve consensus on the “micro”-specifics of boundaries and sensitized local stakeholders as to the exact placement of the boundaries. The work of placing the signs also provided temporary employment for local people. The project also provided a broader education campaign about the necessity of physical demarcation of the Reserve through printed brochures and radio broadcasts

Late in 2007, the Tayna Nature Reserve became the first protected area in DRC to provide a complete physical delimitation for its boundaries. By 2006, despite the success of this community reserve approach, anecdotal evidence suggested that unclear boundaries were one of the limiting factors of Tayna's conservation capacity: field staff reported that much of the illegal extraction by local residents stemmed from a lack of specific knowledge about the placement of the boundaries rather than a disregard for conservation goals. To address this, a project was developed to place signage along the boundaries of the reserve, employing local dialogue committees. This was accompanied by an awareness-raising campaign.

The demarcation project was implemented through eight local dialogue committees in villages nearby the reserve, led by Tayna field staff and Tayna Center for Conservation Biology (TCCB) students. It began in late 2005 with a Tayna management meeting that developed and implemented the following step-by-step phases of the project :

²⁰ Available upon request, contact the author at ptmehlman@yahoo.com or Pierre Kakule at pktayna@yahoo.fr.

1. An initial “Leaders” workshop, in which two representatives of each village dialogue committee were invited to the TCCB to gather feedback from local stakeholders and to develop the details for the workplan;
2. Field visits by Tayna staff to villages with dialogue committees to sensitize local stakeholders about the demarcation project;
3. Publication of 1000 brochures in French and Swahili that were distributed in these village meetings that described the Tayna project and the importance of demarcation;
4. Radio broadcasts that described the importance of the new project (via Tayna community radio station, as well as two other commercial radio stations in the area);
5. Rotational field visits by Tayna staff to dialogue committees to install the signs with members of the villages;
6. The use of the demarcation project to achieve final consensus on boundary limits as the boundary signs were installed;
7. Establishment of a monitoring protocol managed by the dialogue committees in conjunction with the Tayna field staff.

This project, which was completed in late 2007, resulted in the placement of signs at 500 m intervals near boundaries with the highest human traffic (villages in the buffer zones), with boundaries in more remote areas of the forest having signs placed at 2 km intervals, often following well-

known rivers and streams (Figure 4). Additionally, large signs were placed in four key villages (Figure 5). Local villagers, led by the dialogue committees and Tayna field staff, were hired on a temporary basis to install the signs.

Completion of a business plan for the Tayna Reserve. The Tayna Reserve completed its management plan in 2008, and along with international partners decided that the management plan also needed an accompanying business plan that detailed recurring costs related to staffing and operations.

Convening of the CoCoSi (Site Coordinating Committee). The contract with ICCN, in which the RGT was responsible for Reserve management, called for a yearly meeting of a CoCoSi identical to the standard management protocols for other DRC National Parks. The first Tayna CoCoSi was held in September, 2007 and a second was held in September, 2008. These were attended by the Tayna management group, the ICCN, Tayna’s international partner, the Dian Fossey Gorilla Fund International, local stakeholders, and territorial authorities. This committee evaluated overall progress towards conservation and development goals, and created an activity and financial plan for each coming year.



Figure 5. Signage demarcating the boundaries of the Tayna Nature Reserve. This project, completed in 2007, installed 195 boundary signs at 2 km and 500 m intervals (Figure 4), and eight large signs in villages near the reserve. The project was done in conjunction with local stakeholders through “Dialogue Committees”, and local people were temporarily hired to place

Discussion and summary

The Tayna experience demonstrates is that there is no abstract formula or planning methodology to create a community-managed protected area. As conservation NGOs, we sometimes mistakenly believe that once we complete a project's logical framework of activities and budget, there is then a straight line along the continuum of conception to implementation to stable and sustainable operations. Nothing is further from reality. Unanticipated obstacles frequently emerge that require creative and adaptive solutions. Funding may not be secured, and when it does arrive, there are often shortfalls due to unforeseen events. Negotiations with local stakeholders can stall and sometimes break down. Key staff members may become ill or even die. Security can worsen. Governments and key policy makers change. Logistics somehow end up being far worse than imagined. None of this minimizes the role of planning. To the contrary, without a first road map, one can literally get lost in the wilderness. But we now realize that the first planning matrix will only partially resemble the path one takes to later planning iterations three or four years into a project. One cannot emphasize enough the role of adaptive and flexible management policies along the way. Reaching a stable management regime takes years.

The Tayna project was originally conceived from field experiences, discussions in village councils, and around campfires, rather than through paper planning documents. This approach better reflects how local African groups conduct much of their customary governance and contrasts with a western, linear view of the future. Nevertheless, these two approaches developed into a unique synthesis between a local organization and western international conservation NGOs, with much learning along the way. The very organic nature of the project in fact became its strength, and the myriad ways in which we all needed to adapt provided a solid foundation for a novel approach to conservation in central Africa. As the Tayna group grew in experience and assimilated the technical advice of their conservation NGO partners, the log-frames, Powerpoints®, scientific articles, management and business plans blossomed. In re-

trospect, it is difficult to imagine how the project could have evolved otherwise. Without the initial “boots-on-the-ground” experiences and the love of nature the local people exhibit for their forests and animals, the abstract planning, administrative and scientific approaches would have been too disconnected from the very “nature” they were trying to protect.

This experiment in grass-roots community conservation continues. With the leadership provided by the Tayna Reserve, the approach has been scaled up to seven other sister projects in eastern DRC, and from that, a Federation of these projects, UGADEC, has emerged. Later, using some elements of the Tayna model, the Sankuru Nature Reserve was created. In Equateur Province, the Tayna model has been almost exactly replicated by another community group, Vie Sauvage, which wishes to establish the Kokolopori Bonobo Nature Reserve (the Ministerial Decree is now awaiting signature).

As the Tayna model is now being replicated, it clearly demonstrates what we have learned as the basic enabling conditions necessary to succeed in community conservation:

1. Strong motivation on the part of local communities to safeguard their biodiversity and to pursue integrated conservation and development initiatives;
2. The presence of well functioning customary powers, which provide the leadership necessary to motivate local communities and maintain an institutional foundation for well organized interventions;
3. A partnership with an international partner that encourages local leadership to flourish, can translate local aspirations about resource management, conservation and development into internationally recognized approaches for creating protected areas, and can provide the essential funding to develop and implement projects;
4. A national government with the political will to attempt novel approaches to conservation and local management regimes.

Without these basic enabling conditions, we believe it unlikely that the Tayna experience

would have resulted in the first community-managed, nationally recognized protected area in DRC, nor would the model have spread to other areas.

A number of specific lessons learned from this experience may also be useful for international conservation groups to apply elsewhere to catalyze similar projects:

1. **Look for the emergence of local groups.** Be attentive to any locally organized groups that emerge with ideas about conservation and resource management. Their mere presence probably indicates local motivation to act, and if due-diligence research confirms that they do indeed have potential, be willing to test them with incremental financial and technical support.
2. **Translate local aspirations to global frameworks.** Aid the local group to modify and translate their local aspirations and ideas into international (and national) frameworks. Here, it is important to create a knowledge-transfer process so that concepts of sufficient scale to preserve ecological processes and connectivity, protection of globally important species, ecosystem services, and technical and financial sustainability are integrated into their approach. Encourage local groups to become engaged at wider levels (provincial, national, regional, international) to increase their knowledge base.
3. **Understand the local groups' interests.** It is unusual that human communities do something for nothing. Be cognizant that the local group is quite aware of their opportunity costs. Through direct contractual quid pro quo arrangements providing benefits, and through extensive education about long-term benefits, ensure that local groups perceive their actions as enabling them to reach development objectives.
4. **Moral, ethical and philosophical principles are essential.** Often, as conservation NGOs, we are the first groups to reach isolated areas where biodiversity is still intact. Because of this isolation, local people may lack immediate, critical needs, most often related to health and food security issues.

As a priority, find partners or donors that can help meet these needs as a gesture of goodwill. Hungry, ill people are unlikely to be interested in long-term resource management. To ignore these needs is moral relativism and will not go unnoticed by local communities.

5. **Foster independence and autonomy.** We, as conservation NGOs, often believe we have most of the answers in our tool kits. Local groups know their social contexts best, and they need the freedom and the opportunity to conduct their own experiments to gain experience. Empowerment is not a top-down process, nor can it be fast-tracked. Project sustainability ultimately depends on the ability of local communities to manage their own natural resources.