

Newsletter from African protected areas

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Editorial

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Imported conservation

At the end of 2018, the IUCN Red List of Threatened Species brought its usual lot of good and bad news (the latter unfortunately outnumbering the former). Among the good news, we can cite the improvement of the conservation status of various species, including the Northern Bald Ibis (*Geronticus eremita*), mainly present in Morocco, and the Pink Pigeon (*Nesoenas mayeri*), which lives exclusively in Mauritius. Far from being saved (only a few hundred mature individuals are left for each species), their numbers have however significantly improved.

In both cases, we owe this success to conservation initiatives conducted locally by local stakeholders, with external technical and financial support as needed. And these initiatives are no small thing: they rely on close or long-term monitoring, translocations and creation of new populations, all of which are relatively technical operations that require both rigor and long-term commitment.

These cases show that skills exist and that the correct answers can emerge on the ground when people are given the chance and, where necessary, the help needed to make them flourish. Without doubt, these answers will adapt better to the inevitable future challenges increasingly threatening these species, precisely because they are driven by local stakeholders who are better able to detect, understand and potentially deal with these pressures.

This assertion contradicts the current trend of «imported conservation», an increasingly fashionable «model to follow» that tries to make us believe that we must look elsewhere to uncover what could be invented here.

Learning processes happen through trial and error, attempting things again and again in order to move forward. No one can experience this process for us, because if anyone does it for us, then we do not learn at all. You do not become a musician by watching others play, you have to practice day after day, no matter the wrong notes. We do not learn to drive by sitting in the passenger seat, but by being entrusted with the steering wheel.

The same goes for conservation. In Africa, it is assumed that «models» from the North (where they have largely failed), or from the South (where they are based on a simplistic conception of conservation based on fines and fences) must prevail. It is not that their superiority has been demonstrated, by the way, but they have become the default option in response to voids in current systems. Nature hates emptiness, as we know.

Since they provide a quick fix to a poorly evaluated situation, imported solutions are in the end favored by donors eager for short-term results, since they are never evaluated beyond that.

Importing conservation means differing in time the emancipation of local skills and the emergence of strategies adapted to the local context and culture. To save the Bald Ibis or the Pink Pigeon, or more generally nature, one must take the time to do it properly, by and with those who have a real and legitimate interest in it. There is no model for this, there are only men and women who will or will not do the right thing in their own way. But it is absolutely necessary to give them full responsibility for these choices as soon as possible.

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Featuring this month

Reconfiguring the protected areas in Africa in a changing world...

This NAPA presents a few extracts of a study that has been ordered by the Papaco . It analyses the configuration of protected areas in order to identify the points that will help them to tackle the challenges they encounter, and that we have often presented in the NAPA, and to secure their future. The main recommendations involve improving their size and their boundaries, in order to help conserve species, as well as their functions and their natural balances. We cover this in the present NAPA and the next one (April 2019) will expose some of the options to create, extend or reinforce PAs, for instance by creating new community conservancies or by reassigning neighbouring hunting areas.

An important risk is the lack of political commitment to conservation on behalf of governments and also their lack of momentum in performing their sovereign functions: security, rule of law, appropriate legislation and control of its enforcement. The functioning of protected areas (PAs) can only be optimal in the context of the rule of law and good governance. This commitment should be extended to controlling respect for the role and rights of each of the stakeholders, without any one of them infringing on the role or rights of their neighbours.

Far from isolating the protected area through individual management or through a geographical separation such as fences, it is recommendable to coordinate the action of all stakeholders and the planning of their actions in a joint effort, going beyond the protected area (and not looking inwards) in order to tackle future challenges.

Introduction

Africa will have around 2 billion inhabitants by 2050. The population's needs are constantly growing, the fragmentation of the environment is accelerating, and there are fewer and fewer "natural" areas. In this context, the pressure on protected areas (PAs) is rising rapidly and their ability to conserve biodiversity in the long term is increasingly uncertain.

The results of protected areas in terms of conservation are very uneven in Africa, in general poor, and the studies on biodiversity carried out in recent years show a sharp decline in the latter all over the continent, including in protected areas.

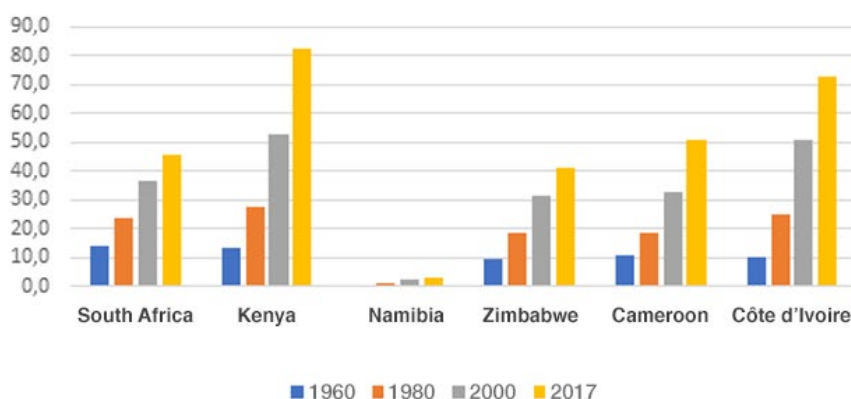
This study aims to examine how well prepared Africa's protected area systems are for dealing with current and future challenges. The plan is to provide a global overview that can be used for reflexion, aimed in particular at decision-makers and the managers of PAs and protected area networks.

1. What are the problems?

Over 7,000 PAs are recognised in Africa, to which we should add the areas that help conservation and are mainly managed for economic purposes, such as hunting areas, classified forests, natural resource management areas, etc. The fate of a protected area is largely dependent on:

- **The political context:** conflicts, of course, but also the political commitment to nature conservation.
- **Its design:** an area that is too small or too large, in a bad location (too close to centres of pressure), in an inappropriate management category, with poor governance or legislative texts that have not been adapted, will find it hard to live up to expectations.

Evolution in the human population density (people per km²) from 1960 to 2017



Evolution of human density in five African countries from 1960 to 2017

- **Its management mode:** this stems from its design but, more specifically, some species require less disturbed nature in order to be conserved properly. The management mode is directly linked to the management category for a protected area, or through its method of usage for an area contributing to conservation. The most complete protection (more natural conditions) is ensured by the lowest management categories.
- **The reality of its management:** There is no point in creating suitable PAs if they are badly managed. The assessment of the management efficiency is the tool that will make it possible to evaluate and monitor the evolution in the management of PAs¹. There are often many things that need to be done to ensure that PAs are properly managed; the quality of PAs is however more important than the quantity².
- **The pressures it faces:** the pressures are caused by humans and increase exponentially in line with demographic pressure. This explains why PAs are harder to manage today than they were a few decades ago, and why solutions that would work with human population density of 2 people per km² in the area surrounding the PA would probably not work with a population density of 30 or 50 people per km². This also explains why some conservation tools used in the past no longer work today, and will be even less likely to work tomorrow, as we shall see later on. The following figure presents the evolution in human population density per km² from 1960 to 2017 in five African countries. So, a solution suitable in Kenya might work today and in the future in countries that tend to have the same demographic values. On the contrary, solutions that work in Namibia will no doubt not work in countries with a far higher population density. This explains why PAs created decades ago often face difficulties today, if their management and their configuration have not been adapted gradually to cope with today's pressures.

¹ Hockings, M., Stolton, S., Leverington, F., Dudley, N. and Courrau, J. (2008). Évaluation de l'efficacité: Un cadre pour l'évaluation de l'efficacité de la gestion des aires protégées 2nd edition. Gland, Switzerland: IUCN. xiii + 105pp. <http://papaco.org/fr/wp-content/uploads/2015/09/management-effectiveness-assessment-Fr.pdf>

² Steiner, A.: Are protected areas failing us? New Scientist, 18 October 2003. <https://www.newscientist.com/article/mg18024172-900-are-protected-areas-failing-us/>

- **Its budgets:** The rise in the pressure created by the growth in the human population around the PA, increased by global phenomena such as climate change or insecurity, leads to a great increase in the cost of countering the pressures. In the 1990s and at the start of the 2000s, the cost of managing a savanna PA was often estimated at around 2 USD³/ha/year⁴. Publications that appeared during the period 2015-2018 indicated that for the same PAs the cost was generally 7 to 8 USD/ha/year⁵ ⁶, but this varied, depending on the problems that had to be solved (for example in the case of lions, as mentioned above) and could reach sums of around 20 USD/ha/year⁷. It is important to note that the cost of managing a fenced PA is far higher than managing a non-fenced PA; 7 times higher according to a recent publication⁸.

In conclusion, demographic growth leads to an increase in direct or indirect pressures, which in turn leads to higher management costs. Efficient conservation solutions devised several decades ago will no longer work today. The budgets required for good conservation today are far higher than those that were needed in the past. Numerous protected areas are thus suffering as a result of the application of solutions that were used in the past with budgets that are far too low. It is therefore not surprising that they do not achieve the expected conservation results. So, it is important to identify which budgetary and technical solutions can be used to improve the conservation results.

³ USD = United States dollar

⁴ UICN Papaco. La grande chasse en Afrique de l'Ouest: quelle contribution à la conservation? ISBN: 978-2-8317-1204-8. <https://portals.iucn.org/library/efiles/documents/2009-074.pdf>

⁵ Lindsey, P.A., et al. Life after Cecil: channelling global outrage into funding for conservation in Africa. *Conservation Letters*, July/August 2016, 9(4), 296–301 <https://onlinelibrary.wiley.com/doi/epdf/10.1111/conl.12224>

⁶ Baghai, M., et al. Models for the collaborative management of Africa's. *Biological Conservation*, 2017. <https://linkinghub.elsevier.com/retrieve/pii/S0006320717314106>

⁷ Packer, C., et al. Conserving large carnivores: dollars and fence. *Ecol Lett.* 2013 May; 16(5):635-41. doi: 10.1111/ele.12091.

⁸ Creel, S., et al. Conserving large populations of lions- The argument for fences has holes. *Conservation letters* 2013. doi 10.1111/ele.12145

2. How should the configuration of PAs be redesigned to anticipate the future?

In this study, we do not cover several of the points mentioned above, which have an impact on the future of PAs, because they are discussed elsewhere (see other Papaco studies): the reality of management, funding, political will or governance... Here, we are simply looking at the points linked to the configuration of a PA.

Surface area

We know that in order to provide better protection for functional balances, to allow the population viability threshold of many species to be crossed, to decrease the intensity of human-wildlife conflicts and take into account the problems caused by climate change, it would be advisable to increase the size of some PAs. A twofold question therefore arises: up to what surface area should they be extended? Where is the necessary space going to be found?

Once these problems have been discussed, we shall look at the selection criteria used for this increase in size.

What is the ideal surface area?

The reply will obviously vary greatly depending on the ecosystem, the habitats and the species to be protected, but also on the current level of the populations, which is hard to increase in view of the corresponding rise in pressure. Thus, in order to obtain a population of 200 lions, there must be a sufficiently high number of prey items (ungulates mainly). This explains why, in many locations, the lion density does not exceed 2 lions/100 km² whilst, theoretically, there could be 5 or 10/100 km². In these different cases, so as to protect a minimum population of 200 lions, a total of 10,000 km² (= 1 million hectares), 4,000 km² or 2,000 km² (=200,000 ha) would be required respectively. Similarly, large surface areas are required for wide-ranging species, such as the African hunting dog (total population for the whole of Africa: 3,500 individuals) or the cheetah (total population for the whole of Africa fewer than 8,000 individuals), and the small PAs cannot conserve these two species

properly. For the forest elephant, whose population densities are low, it is thought that at least 5,000 km² are required for the species' long-term conservation.

So, it can be seen that there is no standard answer, not even for each individual species. However, we saw above that the cost of managing a savanna PA is currently around 7 to 8 USD/ha/year. Attempting to protect a PA without this budget is like trying to drive a car without fuel. Likewise, claiming that a PA management mode does not work when this budget is not available is just as wrong. So, the question is, for a PA measuring 5,000 km², which remains a desirable average size: do you have an annual budget of 4 million USD/year? If you don't have this budget, you can expect to see some populations in a conserved habitat disappear, as was the case in Northern Cameroon for example with the black rhinoceros, the cheetah and the African hunting dog⁹, or with the lion in Mole National Park (Ghana) and Comoé National Park (Côte d'Ivoire)¹⁰. These species require a budget that is sufficiently high to address the pressures they are faced with.

As the old saying goes, “you should not bite off more than you can chew” and, as we saw above, the quality of PAs is more important than their quantity. Finance is thus the basis for PA management. Moreover, if 5,000 km² are beyond reach due to lack of funding, it would probably be wise to limit the size of the conservation area to 3,000 km², which seems a good compromise between the effect of conservation and the cost of conservation. And it would be advisable to organise the 2,000 km² conceded, so that this land also contributes to conservation less exclusively, and thus at a lower price.

Where can the space be found for increasing the size of PAs?

This issue is also essential, because one only has to look at a map of human population density in Africa to know that all zones that have surface water resources (essential for virtually all mammal species) are occupied by humans. Even in arid areas, zones near to water (basins, low-lying areas, etc.) are already occupied. Today, it is no longer possible to evict people who are already living in a given area, as occurred in the past. All extensions should be carried out voluntarily in collaboration with the owners or the holders of the rights to the land. In numerous African countries, and given the land tenure system, these are often local communities. It seems hard to ask local communities to give up their land to the State that will own the PA. A community is instead willing to manage its land itself, often by reserving an area for the management of natural resources. In some countries, this corresponds to a “conservancy”, as we shall see later. Sometimes, as in the case of the creation of Sena Oua National Park in Chad, the communities are the ones to take the initiative and classify the land, because the category has been judged by them to be more suitable for conserving the habitat from agro-pastoral encroachment. In this case, the communities negotiated a certain number of limited and regulated land use rights¹¹.

Another promising way forward today is that of reclassifying land that belongs to the State, by changing the management mode and sometimes the status or category. A recent example of this is the case of the reclassification of the NG42 hunting zone in Botswana as a National Park, increasing the surface area of Chobe National Park until it adjoined Nxai Pan National Park, thus creating a protected corridor along the migration route for zebras and wildebeest¹².

9 Brugière, D., et al. Large-scale extinction of large carnivores (lion *Panthera leo*, cheetah *Acinonyx jubatus* and wild dog *Lycaon pictus*) in protected areas of West and Central Africa. 2015. Tropical Conservation Science Vol.8 (2): 513-527, 2015 <http://journals.sagepub.com/doi/pdf/10.1177/194008291500800215>

10 Henschell, Ph., et al. The Lion in West Africa Is Critically Endangered. PLoS ONE 9(1): e83500. <https://doi.org/10.1371/journal.pone.0083500> <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0083500>

11 http://pfb-cbfp.org/docs/rapports_act/CCRKinshasa_2010/10_SE-NAOURA.pdf

12 Naidoo, R., et al. A newly discovered wildlife migration in Namibia and Botswana is the longest in Africa. Oryx, 2016, 50(1), 138–146 https://www.cambridge.org/core/services/aop-cambridge-core/content/view/2E54A-55B5EB63E70E4FE918CDD904704/S0030605314000222a.pdf/newly_discovered_wildlife_migration_in_namibia_and_botswana_is_the_longest_in_africa.pdf

Note: these aspects will be described in the next NAPA

What selection criteria should be used to increase the surface area of PAs?

The increase in the surface area mainly aims to take greater account of the ecological features of the different species that are to be protected. This may include:

- **Conserving all the hotspots** for wildlife species and sensitive habitats. These are more often than not watercourses, which constitute an almost essential crossing point, especially in the dry season, and which beyond providing drinking water are also a source of food (low-lying areas, perennial grazing land, aerial pastures for grazing animals), and afford shade, protection, etc. We have seen that very often watercourses, natural boundaries, have been used to demarcate PAs, in particular in the initial approach to “game reserves”. Thus, only half of the watercourse is protected when the hunting activity is not sustainable. Protecting only half of an ecosystem is a real gamble, because pressure is placed directly on the centre of the most important biodiversity zones. It is thus a priority to classify both banks of the rivers in PAs as quickly as possible, preferably with the same management category or at least the same type of land use. This will allow the ecosystem to work in optimal conditions, distance the vulnerable centre of the PA from areas of pressure and provide better protection to the distribution ranges of wildlife species. At the same time, by distancing the boundaries of the PA from the species hotspot at the origin of the human-wildlife conflict, the latter will be reduced. This measure involves a large number of PAs in Africa, in particular in places where there are (or used to be) peripheral big game hunting zones.

- **Conserving all the home ranges of the main species.** Most wildlife species have a home range that they use throughout the year. Due to the great disparity between the dry and the rainy seasons, home ranges often change. In the dry season, they are generally concentrated around water points (rivers, ponds, etc.) whilst in the rainy season, taking advantage of the surface water available all over, they extend to areas that cannot be used during the dry season (in other words beyond the distance that an animal of a given species can cover by walking each day) to exploit food resources that are conserved during the dry season. This phenomenon is sometimes called “partial migration”^{13 14}. By taking these environmental features into account, we will protect a higher percentage of these species with large home ranges that vary over the course of the seasons for longer. It is thus important to know these home ranges and their variation upstream, for example by carrying out remote monitoring using telemetry tracking collars.

An important additional point is that we will thus reduce some of the human-wildlife conflicts, the home range no longer extending beyond the PA, which is generally an area in which human activities are carried out.

It should be noted that in some species, certain individuals move very far from their family's home range¹⁵. Generally, it is not possible to predict these movements, which in most cases are not repeated. These movements generally involve young males looking for females, the males being known for spreading their genes more widely in spatial terms than the females, even if they do tend to return to the area close to their birthplace (philopatry)¹⁶. It is clearly impossible to protect

¹³ Tshipa, A., et al. Partial migration links local surface-water management to large-scale elephant conservation in the world's largest transfrontier conservation area. *Biological Conservation* 215 46-50 (2017). <https://www.sciencedirect.com/science/article/pii/S0006320717309047>

¹⁴ Naidoo, R., et al. Home on the range: factors explaining partial migration of African buffalo in a tropical environment. *PlosOne* 7 (5): e36527. Doi 10.1371/journal.pone0036527

¹⁵ Loveridge, A. *Lion hearted*, p. 150-151. Regan Arts. New York, April 2018. ISBN 978-1-68245-120-5

¹⁶ Greenwood, P.J., Mating systems, philopatry and dispersal in birds and mammals. *Anim. Behav.* 1980, 28 1140-1162. [https://doi.org/10.1016/S0003-3472\(80\)80103-5](https://doi.org/10.1016/S0003-3472(80)80103-5)

all locations where one individual of a species is found! Attempts will be made to protect most of a population's (and not an individual's) home ranges, whilst being limited by land availability and management costs.

- **Contributing to connectivity.** Here we prefer to talk about connectivity rather than corridors. Indeed, a corridor is not always functional, since this depends on whether the species use it. It must correspond to a real movement that is sufficiently important. Connectivity involves a continuity of home ranges¹⁷, and generally corresponds more to the reality of the distribution of species, through continuity rather than migration. With regard to large animal species, there are only five true migrations in Africa (the elephants of Gourma - Mali/Burkina Faso; South Sudan/Ethiopia with the white-eared kob mainly; the migration in the Maasai area – Kenya/Tanzania – with wildebeest, zebras, gazelles, etc.; the migration in Barotseland/the Barotse Floodplain – Angola/Zambia – for wildebeest and zebras; and, finally, the migration in Northern/Central Botswana for zebras and wildebeest above all). Some corridors are moreover only used as an extension of an animal's habitat and not for movements, as was recently noted in the case of the Mount Kenya elephants¹⁸.

It will be particularly important to maintain connectivity, in other words retain a sufficiently large connection in order to encompass home ranges, in places where human encroachment is increasing and risks isolating two PAs. This is notably the case in places where big game hunting zones are situated between two PAs, as in Zambia for example between Luangwa North National Park and Luangwa South

National Park, or in Northern Cameroon between Boubandjida, Bénoué and Faro national parks. Earlier, we saw that Botswana had just classified hunting zone NG42 as a national park, to ensure connectivity (for true migration) between Chobe and Nxai Pan national parks.

It should be noted that, by maintaining this connectivity, we can also reduce human-wildlife conflicts, by avoiding farmland encroaching on wildlife corridors.

However, it is important to note that it is not always possible to maintain this connectivity. This is particularly the case when the human density becomes too high. Thus, since 2006 South Africa's official policy has recognised that the free movement of animals in a fragmented PA network, with areas with human presence, is no longer possible and it is carrying out the required genetic transfers by translocation and not by creating corridors¹⁹. This case will become increasingly common in many countries with population growth.

The classification of connectivity areas rather than corridors is thus a very interesting instrument, in particular because the natural state is the best, since it allows for a larger number of natural functions²⁰ and will have a better impact on conservation. Ideally, of course, the connectivity area should be classified as a PA, but this is not always possible.

Moreover, the connexion between two PAs plays an essential role in the framework of climate change, allowing species to "follow" the habitat that suits them if it is affected²¹.

17 Benett, A.F. (1998,2003). Linkages in the landscape: The role of corridors and connectivity in wildlife conservation. IUCN, Gland, Switzerland and Cambridge, UK. Xiv + 254 pp. <https://portals.iucn.org/library/efiles/documents/fr-021.pdf>

18 Green, S., et al. Patterns of use and movement in the Mount Kenya Elephant Corridor: is it an effective corridor or simply an extension of habitat? September 2016 Conference: EAZA Annual Conference 2016 At: Belfast Affiliation: Marwell Wildlife, University of Southampton https://www.researchgate.net/publication/311426529_Patterns_of_use_and_movement_in_the_Mount_Kenya_Elephant_Corridor_is_it_an_effective_corridor_or_simply_an_extension_of_habitat

19 SANParks, Coordinated policy framework governing park management plans, July 2006. 60 pp. <https://www.sanparks.org/docs/conservation/cpfjanuary2010.pdf>

20 Worboys, G.L., et al. (2016) Advanced draft, Areas of connectivity conservation guidelines. IUCN. http://conservationcorridor.org/wp-content/uploads/acc_advdraft_guidelines_28may2016-1.pdf

21 Idem 37

Boundaries

One of the consequences of the modification of the size of a PA is the change in its boundaries. As we saw earlier, the main point is to avoid the boundary being a line such as a large river where there is a high wildlife density. Ideally, in order to protect and reduce human-wildlife conflict, areas of high wildlife density and large rivers should be situated at the centre of the PA. Ridge lines thus make better boundaries than rivers. However, the latter are very often used as “natural boundaries”.

It is also important to correct boundary lines in order to attain a more regular shape and thereby eliminate any boundaries that are too long with regard to the PA's surface area. This reduces both entry areas for poachers and human-wildlife points of contact at which conflicts can arise. This is particularly important when the boundary has indentations that allow inhabited areas to “penetrate” the PA, greatly increasing the risk of poaching and also human-wildlife conflict when animal species cross the indentation to get from one part of the PA to another. This aspect is even more important for inhabited enclaves within a PA.

With regard to the management of PAs, the monitoring of boundaries is of key importance: in a certain number of cases, the boundaries (and even sometimes the PA itself) have disappeared as a result of human activities. For everyday management, it is occasionally necessary to create a large mark (using machinery) at the end of the undisturbed natural zone, below the legal boundary, in order to define the area where any human activities should stop. This does not bode well for the modification of the PA's status, as we shall see later on. The last resort for demarcating a threatened boundary is the installation of a fence along the problematic boundary line.

A key point concerns the peripheral boundary of a PA complex, which constitutes a conservation block and may contain a national park, a reserve, hunting zones, community natural resource management zones, etc. This complex will be demarcated by a common external boundary, which is monitored by different bodies, with different legal statuses and a

wide variety of budgetary means. These components will evolve in different ways, the national parks generally resisting more than the other bodies, as we can see in Chad where practically all the reserves and classified forests have disappeared, but where the national parks remain intact²². This phenomenon occurs in many countries, where there is a progressive disappearance of hunting zones and some reserves, whilst the national parks are not threatened by human encroachment, as in Northern Cameroon, for example²³. This means that the boundaries and conservation potential of a conservation block made up of different bodies will be threatened by humans in varying intensities. Boundary management is thus also a question of status and management category. It will thus perhaps be necessary to consider this point in order to contemplate a long-term conservation effect. A PA cannot be isolated from its peripheral context. This point is even more valid for conservation areas within a block, which do not correspond to the definition of a PA. In other words, their management is not assured in the long term, like a community area in which the community decides, legitimately, to modify the internal zoning boundaries in its management plan. This point leads us to buffer zones

Historically, most PAs were provided with a buffer zone around their officially classified area. This is most often a strip, measuring 3-10 km wide, for example, in which the inhabitants are not allowed to carry out certain activities judged to be harmful for the PA. These activities may include hunting, deforestation, farming, grazing, the permanent installation of houses or industrial buildings, etc.

In the vast majority of cases, these buffer zones have disappeared. The reason for this is that the inhabitant (who has the land use or property rights) cannot do whatever they want on their land. This is in fact a matter of a limitation of their rights, which is imposed on them by the PA management authority (often the

22 UICN Papaco. Evaluation de l'efficacité de gestion des aires protégées de la République du Tchad, 2008, 56 pp. <http://papaco.org/wp-content/uploads/2015/09/Rapam-Tchad.pdf>

23 Omondi, P., et al. Total aerial count of elephants and other wildlife species in Faro, Benoue and Bouba Ndjidda NPs and adjacent hunting blocks in Northern Cameroon, WWF 2008, 75 pp. http://www.elephantdatabase.org/system/population_submission_attachments/files/000/000/060/original/svyFCCMNOR2008AT.pdf

State), and this is seen as being unacceptable. Rather than opposing the authority directly, the inhabitants often preferred to allow development encroachment (agro-pastoral in most cases) to advance silently, especially in the rainy seasons when movements and controls are difficult. Finally, the manager is faced with a fait accompli: the buffer zone has disappeared.

The alternative is to favour a peripheral area over a buffer zone: this is a legal spatial entity that specifies the activities that can be carried out (such as grazing in a reserve, or hunting in a hunting zone), which is created centrally by the State or in a participatory manner by local communities. This worked quite well whilst hunting was a conservation tool, but it is far from being the case today²⁴. The creation of community areas, sometimes called “conservancies” is currently being developed on the periphery of some PAs, such as in Kenya for example where 160 conservancies manage 6.36 million hectares for the benefit of 700,000 households²⁵. We shall study this later on in this study.

Role of PAs

The role played by a PA thus depends primarily on the objectives it is assigned, and we will recall that the conditions become less natural as we move from Category I to Category VI, since the extent to which the environment has been modified increases.

Now let us try to imagine some of the possible roles PAs can play and let us look at how the configuration of the PAs can allow them to achieve this:

- **Main role: Protection of ecosystem services.** In order to achieve this, we need to preserve as many ecosystem functions and balances as possible, which requires nature to be undisturbed by humans (close to its primary state). The PA must thus ideally contain within its boundaries an entire watershed (water production) including wetlands (filtration, purification, fight against flooding) or an entire forest (significant carbon

stocks, the absence of nuisance effects on forest edges). Categories I and II are probably those that best fulfil this role.

- **Main role: wildlife tourism.** This is an activity that is widespread in African PAs, given the presence of this continent’s iconic species and its landscapes. The turnover from tourism in sub-Saharan Africa was 66 billion USD in 2016²⁶, with wildlife tourism generating a significant percentage of that total. So, it plays a very important role. We should also note the key social role it plays, with tourism in sub-Saharan Africa in 2016 accounting for 8.4 million direct jobs, and 20.7 million indirect jobs²⁷. This implies that the tourists’ expectations are met, since generally they can see the iconic or rare animals in good conditions, in “virgin” nature and are able to understand and appreciate nature, etc. The “wild, open spaces” aspect is very important and it is not a coincidence that one of the main companies to organise ecotourism in Southern and East Africa is called Wilderness Safaris, referring directly to these wild open spaces.

Therefore, any association with hunting is out of the question, as is the presence of human infrastructures and activities other than traditional ones and in limited numbers. So, Categories I and IV are probably the most relevant.

- **Main role: use of natural resources.** This is possible in Category VI, but the PA must first correspond to the IUCN definition. We have seen that some hunting zones, no longer managed when the allocated quotas are reduced, do not correspond to the definition of a PA. The main objective of Category VI is “*to protect natural ecosystems and use natural resources sustainably, when conservation and sustainable use can be mutually beneficial*”²⁸.

If our area is indeed a PA, the use must also comply with certain rules. “*In general, IUCN recommends that a proportion of the area is retained in a natural condition, which in some*

²⁴ UICN Papaco. La grande chasse en Afrique de l’Ouest: quelle contribution à la conservation? ISBN: 978-2-8317-1204-8. <https://portals.iucn.org/library/efiles/documents/2009-074.pdf>

²⁵ <https://kwakenya.com/conservancies/status-of-wildlife-conservancies-in-kenya/>

²⁶ WTTC (World Travel & Tourism Council) 2018, www.wttc.org

²⁷ Idem

²⁸ Idem 46

cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds". "Category VI protected areas aim to conserve ecosystems and habitats, together with associated cultural values and natural resource management systems" ²⁹. This means that modern and industrial exploitations are not desirable or accepted. Category VI PAs certainly have an important role to play in landscapes and help conserve ecosystem services.

In conclusion, the choice of the role to be played by the PA is thus essential, in particular at present when the economy for PA management is evolving. The increase in pressure due to population growth has changed the consumer management paradigm, as summed up by Professor Packer (University of Minnesota - USA, University of Oxford - United Kingdom):

- From 1920 to 1960, the paradigm was: "fauna pays for its conservation",
- From 1960 to 2010, the paradigm was: "fauna must pay for its conservation",
- In 2010, the paradigm became: "fauna cannot pay for its conservation" ³⁰

This paradigm shift is of crucial importance when it comes to allocating roles to our PAs: The consumptive use of fauna is far less favourable than we thought, and that must be taken into account when allocating roles to PAs. This thus leads directly to a revision of the choice of management categories.

Management categories

The above points will lead some to wonder which management categories will be best able to protect nature in the future. There is no clear-cut answer, but we can think about this issue considering the following priority issues.

- **Habitat conservation and respect for boundaries.** We saw earlier how in many countries, a number of wildlife reserves, hunting reserves and classified forests have been colonised by humans. This was noted in a previous study by IUCN-Papaco³¹. Let us take the case of Côte d'Ivoire, for example: deforestation and the influence of farming activities have affected classified and non-classified forests and reserves that have practically disappeared. The phenomenon has also affected some small national parks, mainly during political conflicts. However, two of the country's larger national parks (Taï and Comoé) are virtually undisturbed and only slightly degraded³². This trend is repeated in many countries.

Moreover, the management budget is not always a criterion that explains the respect for the area: in Northern Cameroon, hunting zones surrounding Bénoué National Park managed by the private sector have budgets per hectare that are higher than those of the park, but the latter has not been colonised whilst the hunting zones have been colonised and can no longer be used for hunting.

However, we must compare like with like and note that some national parks are not managed as Category II protected areas. This is the case, for example, of the Boucle du Baoulé National Park (Mali), which was managed as a Category VI area and this led to the degradation of the habitat, agro-pastoral encroachment and a

²⁹ Dudley, N., 2008, Lignes directrices pour l'application des catégories de gestion aux aires protégées, Gland Switzerland, IUCN: x+96 p. <https://portals.iucn.org/library/sites/library/files/documents/PAPS-016-Fr.pdf>

³⁰ Packer, C., 2018. <https://www.youtube.com/watch?v=STaqmtlZfcU>

³¹ IUCN Papaco. La grande chasse en Afrique de l'Ouest: quelle contribution à la conservation ? ISBN: 978-2-8317-1204-8. <https://portals.iucn.org/library/efiles/documents/2009-074.pdf>

³² IUCN-Papaco, Evaluation de l'efficacité de gestion des aires protégées de Côte d'Ivoire, 2007. <http://papaco.org/fr/wp-content/uploads/2015/07/Rappam-Ivory-Coast.pdf>

sharp decline in the wildlife present³³. This shows the real need for a “true” national park to be managed as a Category II protected area.

Some leading experts such as R. Leakey, the former chairman of the board of the Kenya Wildlife Service, believe that in the future the only areas that will still be protected and capable of contributing to conservation in Africa will be the national parks³⁴. He may well be right.

- **Conservation of wildlife species.** With regard to this point and, more specifically, to large animals (weighing over 10 kilos, for example), it is clear that in many countries they are generally only found in national parks, at least in terms of populations (a few isolated individuals can still be found in other locations). We have just discussed Côte d'Ivoire but this is also the case in Senegal (Niokolo Koba National Park), Togo, Niger, Nigeria, Chad, the Far North Region of Cameroon, Sudan, Ethiopia, Uganda, DRC, Malawi, etc. It can be seen that these are mainly countries with a high human population, and this foreshadows the future. A Papaco study showed that, where management levels are similar, the national parks have higher wildlife densities than those of the peripheral conservation zones³⁵. The *Great Elephant Census* showed the importance of protected areas. Broadly speaking, 84% of the 350,000 elephants counted on the African savannas in 18 countries surveyed were in PAs³⁶, but equally, with an average density twice as high, there were 0.44 elephants/km² in the PAs compared with 0.23 /km² outside the PAs. More specifically, in Tanzania, the same *Great Elephant Census* revealed the sometimes

enormous differences between a national park like the Serengeti whose elephant population rose from 2,143 in 2003 to 6,087 in 2014, whilst the number of elephants in the Selous Game Reserve dropped from 70,400 in 2006 to 13,200 in 2014. Therefore, this means a 16.7% annual increase for the Serengeti National Park and an annual decrease of 9% for the Selous Game Reserve. The differences in management for two management types, in the same country, are thus clear and favour national parks.

- **Socio-economic impacts.** This is an important point. Since the pressures are of human origin, it is important that a significant number of people have financial interests in the proper functioning of the PAs in order to encourage a larger number of people to respect them. Thus, in Kenya, tourism, with the country's wildlife being the main attraction, generated a turnover of 2.8 billion USD in 2017, which directly supported 429,500 jobs³⁷. Similarly, in Botswana, in 2017 wildlife tourism generated a direct turnover of 687 million USD for 26,000 direct jobs³⁸.

The socio-economic impacts will play a key role in the future of PAs, by involving a large number of people (one paid job providing a livelihood for around ten people in Africa) who have a vested interest in ensuring that the PAs are in good condition. This is particularly the case thanks to wildlife tourism, which is mainly carried out in PAs and especially in Category II protected areas (national parks). Thus, in June 2018, Tanzania announced that it was going to upgrade five wildlife reserves to national parks, in order to develop wildlife tourism³⁹.

33 Lauginie, F., 2009. UICN-Papaco & Afrique Nature International. Evaluation externe indépendante de la gestion des Aires protégées du Mali. 109 p. <https://portals.iucn.org/library/sites/library/files/documents/Rep-2009-021.pdf>

34 https://www.iucn.org/crossroads-blog/201803/protected-areas-hope-midst-sixth-mass-extinction?utm_campaign=2055382_Protecting%20the%20Planet%20-%20March%202018&utm_medium=email&utm_source=IUCN&dm_i=2GI3,181XY,40EIEG,3VLOV,1 et <http://papaco.org/wp-content/uploads/2018/05/lettreNAPA-119-0518-EN.pdf>

35 UICN Papaco. La grande chasse en Afrique de l'Ouest: quelle contribution à la conservation? ISBN: 978-2-8317-1204-8. <https://portals.iucn.org/library/efiles/documents/2009-074.pdf>

36 <http://www.greatelephantcensus.com/final-report/>

37 <https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2018/kenya2018.pdf>

38 <https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2018/botswana2018.pdf>

39 The East African, 5 June 2018. <http://www.theeastafrican.co.ke/business/Tanzania-woos-tourists-to-parks/2560-4596772-otv8wwz/index.html>

- **Running cost.** The cost of technical management, including development (trails etc.) and monitoring, in order to achieve the same management result, is the same for a given surface whatever the management category or even outside the PA (this is the case of areas that contribute to conservation). This cost currently stands at around 7 to 8 USD/hectare/year in unfenced savanna zones, as seen above. A fenced zone costs much more (as much as 7 to 8 times more, as mentioned earlier), due to the cost of installing the fences (in Namibia, in 2018, the cost of 1 km of fence in Etosha National Park to stop wildlife escaping, including elephants and large carnivores, is 700,000 Namibian Dollars, in other words 53,000 USD⁴⁰), and then one has to add the costs of the daily monitoring and upkeep. It has also been estimated that one dollar protects more lions in an unfenced zone than in a fenced zone⁴¹. For the future, it is important to fund the conservation of PAs with the highest potential, in other words those with the greatest chances of success in conserving natural values

in accordance with the current and future levels of pressure and threats.

In conclusion, there is no easy answer; each case is unique. However, all things being equal, the Category II protected areas appear to have a series of advantages, which puts them in a good position for the future. Since pressures on natural values mainly originate in the periphery, it is important to know how to manage them as well as possible, in order to conserve both the interests of the PA and those of the surrounding communities. It is impossible to separate these two entities.

In the next NAPA, we'll see some practical options to redesign PAs in Africa...

The full study is downloadable on www.papaco.org

This study was funded by the France-IUCN partnership



⁴⁰ New Era, Namibia, 4 June 2018. <https://www.newera.com.na/2018/06/04/completion-of-etosha-fence-to-cost-government-over-n490-million/>

⁴¹ Creel, S., Ecology Letters 2013, doi: 10.1111/ele.12145. <http://www.mjkelly.info/Publications/Creel%20Lions%202013.pdf>



Announcements

PANORAMA

SOLUTIONS FOR A HEALTHY PLANET

Promotion of sustainable forest products from biosphere reserves in Ethiopia – a unique case for business partnerships

The majority of Ethiopia's population depends on agriculture to sustain their livelihoods. Pressure on land is high and income from forests can often not compete, leading to deforestation and land degradation. The last mountain forests – home of wild coffee trees – are threatened. Exporting high value forest products provides incentives for effective forest protection and management.

This solution describes a business case relevant for forest landscape restoration (FLR). A public-private partnership between local producers, farmer's organizations, German companies and NGOs and GIZ provided the framework conditions to develop wild coffee and honey value chains in Kafa and Sheka.

Efforts led to the recognition of Kafa region as UNESCO biosphere reserve, a unique example where small-scale farmers and grass roots organizations have become global business partners. Forests are valued and preserved as they provide a substantial and regular income to farmers by selling forest products.

Article complet [ici](#).

Plus d'info sur Panorama, [ici](#).



THREE POSITIONS IN A NATIONAL PARK

Where? Cameroon

BRL Ingénierie



BRLI is looking to fill three technical positions in a national park in Cameroon:

- **A head of mission, international expert and protected area management specialist**,
- **An ecologist**, national expert (or resident of Cameroon), specialist in ecological monitoring,
- **Expert in raising awareness and environmental education**, national expert (or resident of Cameroon).

Full description of positions: [here](#).

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// PAPACO Programme officer - Green List
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