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Living territories to transform the world

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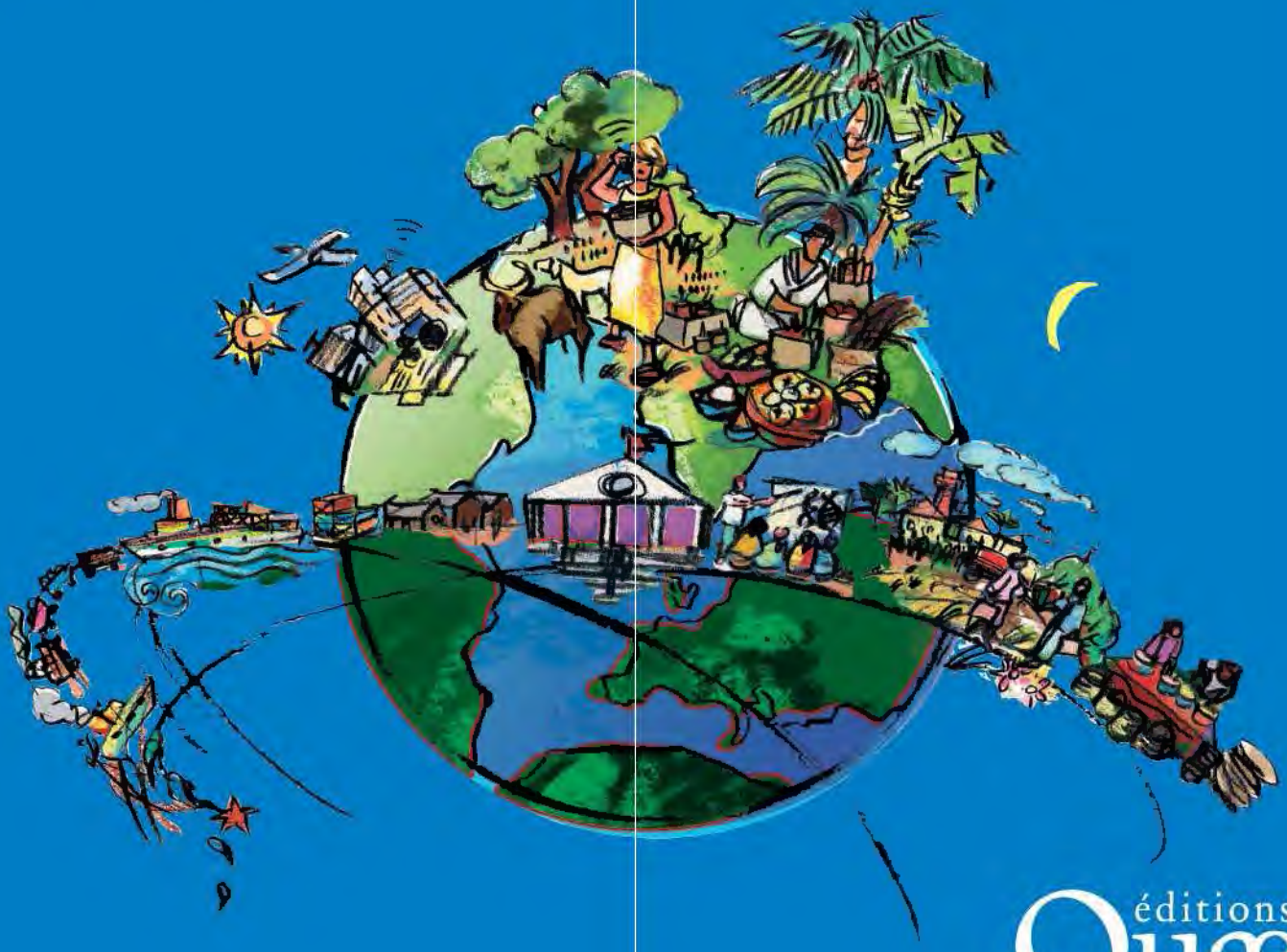

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The *Agricultures et défis du monde* (Agriculture and Global Challenges) collection publishes a book every year that showcases Cirad's research into the sustainable development of tropical agricultural systems. It is co-published by Éditions Quæ, AFD and Cirad. The collection is coordinated by Cirad's Patrick Caron.

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CHAPTER 24

Protected areas: opportunities for socio-economic development of territories?

Karen Colin de Verdière, Aurélie Binot, Alexandre Caron, Michel de Garine-Wichatitsky and Alice Leroy

In developing countries, agriculture and animal husbandry account for significant proportion of economic output, employment and land use. In a context of population growth and its corollaries in terms of territorial impact (urbanization, increase in transport and services infrastructure), the pressure on land and natural resources continues to grow. This pressure leads to competition in the use of land to the detriment of biodiversity and is indeed one of the top five causes of the current erosion of planetary biodiversity that experts call the 'sixth extinction'.

Protected areas are defined and dedicated geographical spaces, designed to conserve remarkable biodiversity, which is relatively well preserved but is subject to various pressures (Dudley, 2008). The International Union for Conservation of Nature (IUCN) classifies protected areas according to their management objectives in six categories that correspond schematically to a gradient from the most natural areas possible (categories 1 to 3) to spaces in which there is greater human intervention (categories 4 to 6). Instead of excluding anthropized areas, IUCN recognizes that territories where human activities are regulated to serve a conservation and natural resource restoration objective are also protected areas. In 2015, IUCN listed more than 200,000 terrestrial and marine protected areas worldwide, representing 14.7% of the land area, 10% of the marine and coastal waters under national jurisdictions, and 4% of the world's oceans and seas (IUCN, 2016). The number of protected areas continues to increase, in line with the commitments of countries under the Convention on Biological Diversity (CBD). This is true even for countries of the Global South. For example, since the Durban World Parks Congress in 2003, Madagascar has doubled its protected areas in terms of surface area, with new protected areas belonging to categories 4 to 6 (areas in which human intervention is more present).

But the restrictions imposed by the creation, extension and management of these protected areas can be sources of land disputes or even territorial conflicts. Often established during colonial times, protected areas belonging to categories 1 to 3

(the most natural areas possible), especially in the developing countries, are in areas that are less productive, isolated or difficult to access. The creation of these protected areas has often resulted in the displacement of local populations or a restricted access – or none at all – to the natural resources of the areas themselves or their buffer zones. Protected areas can thus impact the living conditions of local populations by preventing traditional harvesting and use of natural products and by limiting the scope of economic activities (agriculture; livestock husbandry; firewood and timber; gathering of food products, fibres or pharmacopoeia products; fishing; hunting; etc.).

Within and around terrestrial protected areas, competition for space between wildlife and neighbouring populations can also engender conflicts. There can be direct consequences of human-wildlife conflicts, including, but not limited to, injuries and deaths caused by dangerous animals, as well as indirect consequences, resulting in losses of crops or livestock or damage to infrastructure. In Africa, these conflicts are especially widespread: crocodiles continue to attack and kill people in the Lake Nasser area of Egypt and within cities in Mozambique; leopards still kill sheep as little as 100 km from Cape Town in South Africa; and lions kill cattle in the suburbs of Nairobi (Lamarque, 2010). In these areas, human-wildlife conflicts are a particularly significant source of tensions and even of rejection by local populations of wildlife protection measures and, consequently, of protected areas.

These populations therefore perceive the protected area as a usurpation of their ancestral access rights imposed by external, national and/or international actors for long-term reasons (biodiversity conservation) that are out of sync with their short-term vital needs. In such a context, the functional incorporation of protected areas into the territorial matrix, and not as islands disconnected from their periphery, remains a major challenge.

Protected areas: a multifunctional tool for territorial development?

The primary function of protected areas is the preservation of species threatened with extinction as a result of human activities. Protected areas also contribute to the provision of ecosystem regulation services (purification of the water that passes through them or maintenance of an atmosphere without anthropogenic pollution, etc.) to the benefit of the surrounding territories. These services are essential to address the challenges of climate change mitigation and adaptation (Baguette and Locatelli, 2013) through carbon sequestration and the prevention of natural hazards (floods, droughts, etc.). Moreover, the functions of protected areas are likely to be further diversified by becoming part of territorial development trajectories. However, the perception and recognition of these functions by local communities remain limited.

A protected area is perceived locally as a potential snpplier of economic resources (jobs, tourism income) or natural resources (water, bushmeat, pastureland, wood, etc.). However, access to these resources is too often limited to just those that come or filter out of the protected area. Access within the protected area to certain renewable natural resources can be permitted in more integrated management models. In Zimbabwe, for example, regulated access exists for some resources (women may enter once a week

in some protected areas to collect dead wood or thatch). Finally, protected areas can preserve sites of cultural or spiritual value (MEA, 2005).

The ambition therefore becomes to build an inclusive development project for all of the territory's actors (deconcentrated services of the State, elected officials, managers of protected areas, and local populations, including nomads or semi-nomads) so that the protected area can become an engine of local socio-economic development instead of a constraint. The challenge is to conserve the biodiversity present in the protected areas and their peripheries while building a local development project at the largest territorial scale possible, structured around sustainable activities and sectors compatible with the management plan's objectives of conservation (ecotourism, agroecology, agroforestry, agro-pastoralism, etc.).

These integrated approaches attempting to combine biodiversity conservation with development of territories on the periphery of protected areas are often jeopardized by inadequate management of land issues and rules of access between conservation areas and production areas of neighbouring populations. Areas of 'village exploitation' are usually ignored by those in charge of implementing territorial planning policies within the framework of biodiversity conservation projects. This was especially true in the planning of the Zakouma National Park in Chad (Binot, 2011). In the management plan, the areas bordering the national park have been represented as an integral part of a space divided into two concentric circles around the park, whose purpose and uses are determined exclusively on the basis of the protected area and the risk of fragmentation of the natural habitat of large fauna. But in reality, local territorial dynamics are organized around village terroirs with boundaries that shift depending on the evolution of agricultural strategies (crop cultivation and transhumant livestock husbandry), which include customary land reserves in the medium and long term and are interwoven with larger multifunctional spaces.

This inadequate management of land issues is mainly the result of a very superficial knowledge on the part of those in charge of territorial planning with regards to the complexity of the local dynamics of the exploitation of natural resources, especially in relation to the following aspects:

– the difficulty of taking into account the mobility and superimposition of rights of use on the same space that are characteristic of social, anthropological and economic systems, especially in sub-tropical Africa. The movements of 'mobile actors' generate strong seasonal demographic fluctuations locally and require territorial management to be conceived at different temporal scales (thinking with seasonal time steps) and spatial scales (including actors in the concertation framework who are physically distant but still have rights over various resources: trees, plants, water, etc.). The integration of actors such as transhumant herders in these management initiatives requires taking into account the factors that determine their choices concerning land use and pastoral practices;

– the denial of the negative land impacts induced by the zoning of protected areas and the sociological repositioning that this entails in relationships between the actors or in the modalities of exploitation of these spaces. These repositionings and their consequences (acceptance and respecting of new zoning, etc.) take time to be truly assimilated by local actors;

– the socio-political and economic stakes (electoral stakes, power plays, financial interests, etc.) of the elites of terroirs bordering the protected area are not taken into account in the concertation processes, thus leaving little power in the hand of customary authorities and their representatives.

A more equitable model of governance requires respect for customary rights and the rule of law, the promotion of constructive dialogues, equitable access to information, and empowerment of local actors for decision-making (Borrini-Feyerabend *et al.*, 2014). In the case of Zakouma National Park in Chad, only a continuous process of negotiation involving the various local actors would make it possible to identify alternatives to the existing model of management, at least to make the residents understand the rationales behind the zoning arrangements adopted.

Sustainable funding of protected areas for a long-term impact on territorial development

For protected areas to be the engines of economic and social territorial development, predictable and long-term funding is essential. To expand the network of protected areas in line with the Aichi objectives (CBD, 2011), annual funding of between US$ 9 and US$ 85 billion will be required (CBD, 2012) over the 2013-2020 period.

The States' budgetary contributions are an essential element of this funding, in particular to cover recurrent costs. Depending on national legislation, protected areas may benefit from all or part of the revenues from entrance fees and tourist infrastructure, but these revenues are very rarely sufficient to cover financing needs. A few exceptions exist in Eastern and Southern Africa, such as the Kruger National Park in South Africa or the Masai Mara Reserve in Kenya. Income generated by tourism outside protected areas (such as airport taxes, for example) must also be partially allocated to these areas.

Due to insufficient national public funding and direct earmarked revenues, and because they pertain to the protection of a global public good, protected areas in developing countries also benefit from external funding (bilateral and multilateral donors, private funding, foundations, international NGOs). Funds from these entities are primarily earmarked for capital expenditure. If, during the lifetime of a project, international donors cover part of a protected area's recurrent costs, it is essential to ensure continued funding after the end of the project.

To ensure long-term funding of protected areas, so-called 'innovative' mechanisms have been proposed (conservation trust funds, compensation mechanisms, payments for environmental services, REDD+ etc.). The combination of these tools can provide lasting solutions to the funding of protected areas (Fétiveau *et al.*, 2014). However, these mechanisms increase the number of intermediaries and, in so doing, move the decision-making and negotiation centres outside the country, and sometimes even displace the concerned public authority from the management of its own territory's protected areas (Méral *et al.*, 2009). On the other hand, the governance of trust funds strengthens national actors dedicated and committed to the management of protected areas. It shields them from the mistakes of governments which, through short-term necessity or ignorance, accord insufficient priority to the protection of natural capital for future generations.

Box 24.1. Participatory modelling.

In order to improve the coexistence between protected areas and their peripheries, CIRAD and its partners have participated in several initiatives aimed at encouraging the exchange of information and negotiations between local actors involved in the management of protected areas. One of these initiatives is conducted in Zimbabwe through two projects based on the 'Production and Conservation in Partnership' (www.rp-pcp.org) mechanism. It uses participatory modelling of farming practices in the form of a role-playing game to promote information sharing and negotiations between actors.

As part of the ANR-Savarid multidisciplinary project (ANR-11-CEPS-003), which analyzed the socio-ecosystem of Hwange National Park and its periphery in the face of climate aridification, researchers co-constructed a role-playing game with local farmers. The Kulayinjana role-playing game (https://www.openabm.org/model/5221) models livestock husbandry, which is an essential element of (non) coexistence with the protected area, and interactions with the environment and wild animals. After a test phase conducted with village communities in Hwange, the FSP-RenCaRe project (FSP no. 2011-36), which supports the management of protected areas and their peripheries in southern Africa, allowed the testing of Kulayinjana's genericity and utility as a tool for negotiation between actors (forest officials, national parks, traditional authorities, government technical services, etc.), in different agroecological zones and at local/national/regional scales.

Figure 24.1. Session of co-construction of a role-playing game with villagers to improve the coexistence of protected areas with peripheral areas (Magoli village, Zimbabwe).

Conclusion

Issues of protection of nature, when territorialized as in the case of protected areas, tend to confront local actors with external actors whose actions for conservation and development modify the local socio-economic and political fabric, heightening the risk of tensions and conflicts. Provided the conservation rationales take into account the practices and realities of local populations in and around the conservation areas, the expansion of protected areas can nevertheless be an opportunity for territorial development. The inclusion of the conservation project within a larger and inclusive local development project is a good way to enhance its acceptability and strengthen its role as a catalyst for local dynamics.

Box 24.2. The model of transfrontier conservation areas in southern Africa.

Protected areas in Southern Africa, most of them created during colonial times, are home to remarkable biodiversity and landscapes. They play an essential role in tourism and other income-generating activities, and, mainly for these reasons, have been preserved and often even strengthened by post-colonial governments in the region. And yet, local populations continue to be deprived of the benefits of protected areas in most cases. A new protected-area model has been adopted over the last 15 years by number of southern African countries: Transfrontier Conservation Areas (Andersson *et al.*, 2013).

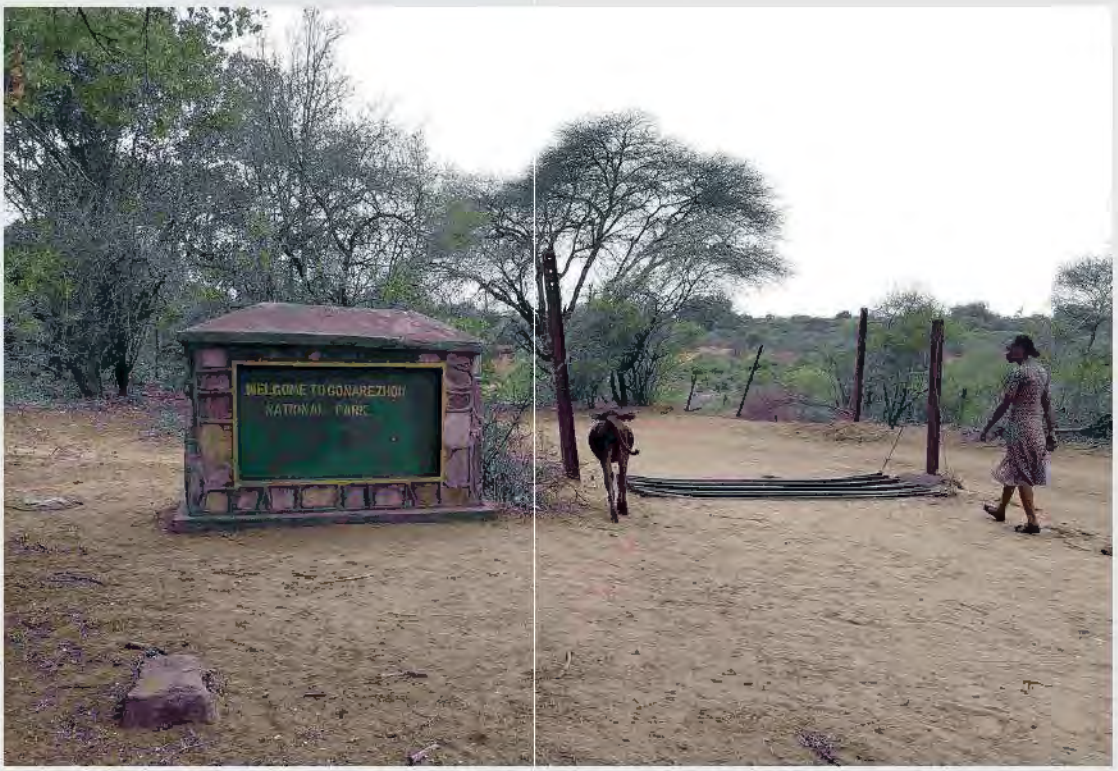

Figure 24.2. Great Limpopo Transfrontier Conservation Area: the boundary between the communal area of Malipati, the Gonarezhou National Park and the hunting zone of Malipati.

The Great Limpopo Transfrontier Conservation Area aims to bring together, within the same management unit, spaces with different and even contradictory uses of natural resources.

They aim to contribute to the preservation of biodiversity, peace and regional integration of countries through sustainable economic development, in particular through tourism and related activities such as game hunting. Transfrontier conservation areas are not limited to the association of several national parks on either side of national borders within the same management unit, but also include large portions of adjacent communal areas.

Even if it is too early to draw any definitive conclusions from these processes, it is clear that the transfrontier conservation areas have not fulfilled all the expectations of the different protagonists in Southern Africa. Even though some problems are not specific to these areas (top-down processes, inadequate consultation with and participation of local populations, human-wildlife conflicts, etc.), others appear to be specific to the model of transfrontier conservation areas and raise questions about its viability:
– increased influence of the international level, which widens the gap between the (local) level at which the socio-ecological processes of interest to these populations take place and the level at which management decisions are made (national or international);
– paucity and volatility of income generated by different forms of tourism.

What is the future for transfrontier conservation areas? It is a difficult question to answer, but the future – if there is one – will depend on a better integration of the local populations in the decision-making processes and an equitable sharing of benefits.

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