
**Renaud Lapeyre & Yann Laurans**

**Institute for Sustainable Development and International Relations (IDDRI)**
**Paris, 41 rue du Four, 75006 Paris, France, http://www.iddri.org/**

**With support from**

**The France-IUCN Partnership**

FRANCE-IUCN PARTNERSHIP NATURE AND DEVELOPMENT IDDRI

# Contents

# 1. Introducing the study[1]

## 1.1. Protected areas: FAQs

The International Union for the Conservation of Nature (IUCN) defines a protected area (PA) as "a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley, 2008). Protected areas are characterised based on their primary management objective[2]. Hence 6 categories, including 2 sub-categories, of protected areas are defined (Table 1).

| Category | Characteristics |
|---|---|
| Ia: Strict nature reserve | Category Ia protected areas are strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring. |
| Ib: Wilderness area | Category Ib protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition. |
| II: National park | Category II protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities. |
| III: Natural monument or feature | Category III protected areas are set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value. |
| IV: Habitat/species management area | Category IV protected areas aim to protect particular species or habitats and management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category. |
| V: Protected landscape/seascape | Category V protected areas are protected areas where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value ; and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values. |
| VI: Protected area with sustainable use of natural resources | Category VI protected areas conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area. |

**Table 1. IUCN categories of protected areas, and their characteristics**

*Source: Dudley, 2008*

Protected areas, and their adjacent areas, are further categorized into four different governance arrangement types[3], defined on the basis of who holds authority, responsibility and can be held

[1] Authors would like to sincerely thank Marc Magaud (IUCN), Geoffroy Mauvais (IUCN) and Emmanuelle Swynghedauw (MAEDI) for their continuous support to this study, their assistance and expertise.

[2] Dudley (2008) importantly adds on this: "assignment to a category is not a commentary on management effectiveness; the categories system is international; national names for protected areas may vary; all categories are important; and a gradation of human intervention is implied".

[3] Governance is defined as "the interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken and how citizens or other stakeholders have their say" (Graham et al., 2003).

accountable for key PA decisions. These categories are: A/ governance by government, B/ shared governance, C/ private governance, and finally D/ governance by indigenous peoples and local communities (see table 2).

| Governance Type | Sub-types |
|---|---|
| Type A/ Governance by government | ➢ Federal or national ministry or agency in charge<br>➢ Sub-national ministry or agency in charge (e.g., at regional, provincial, municipal level)<br>➢ Government-delegated management (e.g., to an NGO) |
| Type B/ Shared governance | ➢ Transboundary governance (formal arrangements between one or more sovereign States or Territories)<br>➢ Collaborative governance (through various ways in which diverse actors and institutions work together)<br>➢ Joint governance (pluralist board or other multy-party governing body) |
| Type C/ Private governance | ➢ Conserved areas established and run by:<br>• individual landowners<br>• non-profit organisations (e.g., NGOs, universities)<br>• for-profit organisations (e.g., corporate landowners) |
| Type D/ Governance by indigenous peoples and local communities | ➢ Indigenous peoples' conserved territories and areas – established and run by indigenous peoples<br>➢ Community conserved areas and territories – established and run by local communities |

**Table 2. IUCN Governance types for protected areas**

*Source: Borrini-Feyerabend et al., 2013*

All protected areas, irrespective of their category and governance type, play a vital role in conserving biodiversity and ensuring environmental protection. Primarily, PAs provide some of the last safe heavens and sanctuaries to preserve exceptional biodiversity, species, and habitats, which are under human threats and pressures, for instance mining, infrastructure development, hydrological and agricultural intensification. In this regard, PAs critically need to conserve the composition, structure, function and evolutionary potential of biodiversity as well as significant landscape features, geomorphology and geology, especially those of national and international significance for cultural, spiritual and scientific purposes (Dudley, 2008; p.12). Besides, PAs remain one of the cornerstones of scientific environmental research activities and ecological monitoring, essential to our understanding of Nature and its future.

At a larger scale PAs also help maintaining the diversity of landscapes, habitats and of associated species, genetic heritage and ecosystems, and thus contribute to more coherent regional conservation strategies to balance both necessary conservation and development needs.

Lastly, PAs can deliver social and economic benefits to resident and local communities and provide the larger society with ecosystem services. They indeed provide regulatory ecosystem services, including buffering against the impacts of climate change, securing clean drinking water, reducing the risks and consequences of extreme events, enhancing food security and allowing for educational as well as recreational opportunities. Considered a nature-based solution, PAs are an integral part of some of the Intended Nationally Determined Contributions (INDCs) made in Paris in December 2015 during UNFCCC COP21.

Overall, there is growing strong scientific evidence that protected areas achieve biodiversity conservation (Juffe-Bignoli et al., 2014), particularly in marine (Lester et al., 2009) and forest (Geldmann et al., 2013) areas while evidence remains mixed about poverty impacts of protected areas (Clements et al., 2014; Hanauer and Canavire-Bacarreza, 2015). For all these reasons, international organizations (CBD, IUCN, UNEP), bilateral as well as multilateral Official Development Banks (ODBs, such as AFD, KfW, GEF, The World Bank, among many others) but also individual national States, as well as international and local NGOs (WWF, Conservation

International, WCS, Birdlife International, etc.) concentrate their strategies and efforts to expand, safeguard and secure protected areas, both marine and terrestrial.

192 State Parties to the Convention on Biological Diversity (CBD) have embraced this priority and therefore included it in the Strategic Plan for Biodiversity 2011-2020, including the Aichi Biodiversity Targets, adopted in 2010. Importantly, Aichi Biodiversity Target 11 sets an ambitious goal : "By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes"[4].

Progress towards this target has so far been quite positive, although it still remains somehow insufficient (Secretariat of the Convention on Biological Diversity, 2014; Juffe-Bignoli et al., 2014). At the global level, the 2016 World Database on protected areas (WDPA) reports 202,467 protected terrestrial and inland water areas covering a total area of 19.8 million $km^2$ (UNEP-WCMC and IUCN, 2016). From 10% in 1994, protected area coverage of terrestrial area including inland waters has increased to 14.7% in 2016, though not much progress has been recorded since 2012. An additional 4.12% (14.9 million $km^2$) of the global ocean and 10.2% of coastal and marine areas under national jurisdiction (0-200 nautical miles from the coast) was protected in 2016 (UNEP-WCMC and IUCN, 2016). Yet, looking at the 180 fifth national reports received by the CBD Secretariat by 18 july 2016, 67% indicate that progress is being made towards this target, but not at a rate that will allow it to be met by the deadline[5].

Furthermore, coverage statistics differ greatly at the regional level. Based on 2014 data (Juffe-Bignoli et al., 2014), Central and South America are the two regions with the highest percentage of protected terrestrial and inland water areas (28.2% and 25% respectively). African protected areas lag behind progress. With 6,868 terrestrial protected areas recorded in Africa, the continent protects 14.7% of its land. Africa represents only 3.3% of the total number of sites protected globally (both terrestrial and marine)[6]. This is partly explained by a trend towards protected area downgrading, downsizing, and degazettement (PADDD) on the continent.

Protected areas are also currently inefficiently located. Only 22% of Important Bird and Biodiversity Areas (IBAs)[7] are completely covered (Juffe-Bignoli et al., 2014) and 23% of Alliance for Zero Extinction sites (AZEs)[8]. Besides, the current global PA network is not yet fully ecologically representative as less than half of terrestrial ecoregions (43% of the 823 terrestrial ecoregions of the world) have at least 17% of their extent covered by protected areas.

Most importantly, management of protected areas remains uncertain and below standards. Where the quality of management has been assessed (for 4,151 PAs, out of approximately 100,000 in 2010), most protected areas had either only basic management (62%) or major deficiencies (13% PAs are in the "clearly inadequate" category), while only 24% had sound management in place. In

[4] This target contributes to Strategic Goal C: « To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity ».
[5] Doc UNEP/CBD/COP/COP/COP/ 13 /8/ Add. 2, 20 July 2016: Updated Analysis of the Contribution of targets established by Parties and progress towards the Aichi Biodiversity targets.
[6] But it represents 13.8% of the total area covered globally by the protected areas' network (due its PA' sizes).
[7] Since the late 1970s, the BirdLife Partnership has been working collectively to identify, document and protect all places on earth of greatest significance for the conservation of the world's birds. As a result, over 12,000 Important Bird and Biodiversity Areas (IBAs) have been identified.
[8] The Alliance for Zero Extinction (AZE), a joint initiative of biodiversity conservation organizations from around the world, aims to prevent extinctions by identifying and safeguarding key sites, each one of which is the last remaining refuge of one or more Endangered or Critically Endangered species. Criteria for designating AZEs are: Endangerment, irreplaceability, discreteness.

total, management of all PAs assessed is rated just as basic on average (0.53 out of a maximum of 1).

Together with the limited level of PAs' connectivity and ecological representativeness as well as their partly inadequate location, unsound management practices jeopardise the integrity of protected areas and question the real *de facto* level of protection these provide for vital biodiversity, species and habitats. In turn, this clearly calls for new funding and better governance systems in order to expand the PA network, *efficiently and adequately*.

## 1.2. The need for further funding

Latest estimates for biodiversity conservation financial needs worldwide as well as current investments clearly point to the existence of a large funding gap.

On the one hand, higher estimates for actual current spending for biodiversity conservation interventions *from all sources* (public, private, national and international) range between USD 51.5 and 53.4 billion annually in 2010 (Parker et al., 2012). Waldron et al.'s estimate is fairly below this number, with an average of only USD 23.1 billion[9] (2013) between 2005 and 2008. Out of all these invested funds, bilateral biodiversity-related Official Development Assistance (ODA) by members of the OECD countries amounted to a mere USD 6.5 billion in 2010.

On the other hand, at the lower bound Mc Carthy et al. (2012) estimated that USD 76.1 billion are actually needed annually to fund the conservation of all terrestrial sites of global conservation significance[10]. At the level of the countries eligible to the Global Environmental Fund (GEF), the CBD's financial mechanism, the resources required to achieve the Aichi targets in developing countries alone are also estimated between USD 74 and 191 billion for the period 2014-2018 (Fétiveau et al., 2014). More thoroughly, the Report of the High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020 (and in particular its 20 Aichi targets) evaluated in 2012 that USD 150 billion were in fact needed annually on the lower bound, USD 440 billion on the upper bound (CBD, 2012).

At best, current available funding worldwide only covers one third of the lowest needs estimate. In Africa more particularly, little information is known regarding the size of the funding gap, but the available evidence suggests that this is likely to be very large (CBD High-Level Panel, 2014). Against this backdrop, it becomes critical to identify new funding sources.

Conservation interventions that would specifically target protected areas represent the bulk of these funding needs. CBD (2012) indeed estimated that achieving target 11 would necessitate on average spending between USD 9.2 and 85 billion annually over the eight year period 2013 to 2020. Once-off investments needs would require impressive amounts in the range of UD 66.1-626.4 billion whereas recurrent expenditure would amount from USD 970 million to USD 6.1 billion per annum. In Africa, more precise estimates of the funding requirements for effective management of protected areas range from USD 460 to USD 2,048 per $km^2$ (Lindsey *et al.*, 2016). Against these needs, available resources for African protected areas are scarce, though financial assessments are still lacking.

[9] The estimate of total annual funding to biodiversity between 2005 and 2008 (Waldron et al., 2013) is a compilation of money spend by bilateral and multilateral donors, private philanthropy, national in-country spending, and Conservation Trust Funds and debt swaps.

[10] This estimate of annual funds needed to protect and effectively manage all terrestrial sites of global conservation significance (McCarthy et. al., 2012) focuses on the cost of implementing Aichi Target 11 and Aichi Target 12.

In order to fill the identified funding gap, a broad range of instruments have been proposed to finance and manage biodiversity conservation, including economic and market instruments (Méral, 2015). In a publication for UNEP, Panayotou (1994) proposed seven categories of mechanisms (property rights, market creation, fiscal instruments, charge systems, financial instruments, liability instruments, performance bonds and deposit refund systems) while McNeely (1998), for the IUCN, also distinguished between four types of policy for biodiversity conservation: legislation, institution building, research, and economic instruments.

Focusing more specifically on protected areas, Emerton et al. (2006) proposed a typology of financing mechanisms. The latter were categorized on a spectrum from public to private sources, with a further distinction between mechanisms relying on self-generated revenues and those relying on external funding inflows. These mechanisms include, on the one side, fiscal instruments, benefit sharing mechanisms, cost-sharing agreements including management by private entities (including NGOs), leases and concessions, but also tourism, resource extraction and bioprospecting charges; and on the other side government budgets and foreign assistance, and private voluntary donations.

Building on these works, Parties to the CBD have started to promote economic and market approaches to incentivize and finance biodiversity conservation, within and outside protected areas. At the 8th Conference of Parties in 2006, Parties asked for help from the OECD and IUCN to identify "the development of innovative positive incentive measures", and of UNEP "to continue supporting the programme of work on incentive measures of the Convention, in particular through its work on the creation of pro-poor markets for ecosystem services" (Meral 2015, p.18). From then on, innovative financial mechanisms and market-based incentives have become an integral part of the CBD's, as well as its partners', agenda.

## 1.3. The call for innovative financial mechanisms

In 2008, Parties to the CBD adopted the Strategy for Resource Mobilization (SRM) in support of the achievement of the Convention's objectives during the 9th Conference of Parties (CBD Decision IX/11). SRM's goal 3 calls Parties to "strengthen existing financial institutions and promote replication and scaling-up of successful financial mechanisms and instruments" whereas goal 4 calls to "explore new and innovative financial mechanisms at all levels with a view to increasing funding to support the three objectives of the Convention". Among others, instruments such as payments for ecosystem services, biodiversity offset mechanisms, environmental fiscal reforms, markets for green products, biodiversity in international development finance and biodiversity in climate change funding were thus promoted by CBD Parties as innovative financial mechanisms. This trend was confirmed in subsequent CBD Conferences of Parties X, XI and XII (decisions X/3, XI/4, XII/3), and further endorsed when IUCN members approved resolution 122 at the Vth World Conservation Congress in Jeju (Korea) in 2012, to promote, and contribute to reflections on, innovative financial mechanisms for biodiversity conservation as complementary fundraising tools (WCC-2012-Res-122-EN).

Although not the focus of this report, the definition, scope and characterization of innovative financial mechanisms have been largely discussed, as were their advantages, disadvantages and applicability. Scientifically, Whitten et al. (2003), Sarker et al. (2008), Jack et al. (2008) but also Vatn et al. (2011) and Vatn et al. (2014), among many others, discussed the comparative strengths and risks of new economic instruments, including financial and market-based mechanisms. Potential advantages include economic incentives being efficient signals, optimal allocation of resources, and filling of the funding gap (Lapeyre and Pirard, 2013) while drawbacks often cited are the volatility and uncertainty of such instruments, and the possible commodification of nature with the associated risk of reducing intrinsic motivations to conserve biodiversity. At the

diplomatic level, important debates have also arisen within the CBD arenas. Though innovative conservation tools are now widely called for to incentivize and fund biodiversity (OECD, 2013), several Parties as well as CBD workshops and decisions similarly highlighted the limitations associated with these instruments and the important safeguards which are to be put in place accordingly (for the Quito dialogues see Farooqui and Schultz, 2012 and Ogwal and Schultz, 2014; Ituarte-Lima et al., 2014 ; decision XII/3 at COP12, paragraphs 15 and 16 and Annex III).

The leading group on Innovative Financing for Development, which consists of 66 states and numerous international and non-governmental organizations and whose Permanent Secretariat is hold at the French Ministry of Foreign Affairs and International Development, defines innovative financing as *mechanisms for raising funds which are complementary to official development assistance, predictable and stable*.

The Leading group draws an essential distinction between, on the one side, innovative sources which make new resources available from contributions from various economic sectors, and, on the other, innovative mechanisms which enable the impact of existing public resources to be optimised, particularly by combining them with private funds.

Based on a literature review and interviews with key informants, a study for the French Ministry of Foreign Affairs and International Development previously listed 20 financing initiatives that are potentially innovative for biodiversity (Fétiveau et al., 2014). These mechanisms were grouped according to five major principles for biodiversity financing. First, the tax lever and the reform of harmful subsidies include environmental taxation and taxing financial transactions and $CO_2$ emissions ; second, responsible investment mechanisms and the debt lever such as green bonds, trust funds and debt-for-nature swaps ; third, direct economic valuation of biodiversity with ecotourism and the development of genetic resources ; fourth, applying the principle of responsibility through offset mechanisms and transferable development rights ; and finally fifth, the application of the eco-conditionality principle with certification schemes, payments for ecosystem services and REDD+ projects.

## 1.4. The need to investigate innovative financial instruments actually at work

Building on this wealth of mentioned literature on innovative financial mechanisms and based on the latest report for the French Ministry of Foreign Affairs and International Development (Fétiveau et al., 2014), this report aims at presenting detailed case studies of some of these innovative financial mechanisms *at work* in and around protected areas in Africa.

Following on IUCN resolution 122 to enhance the identification of best practices, this report is set to contribute to the debate by thoroughly describing how these instruments actually work in the field, how these mechanisms emerge, and how these are designed, are implemented and finally monitored. Precisely describing actors, legal conditions, institutions, organizational structures, as well as procedures, contractual arrangements and human relationships (Figure 1), we seek here to disentangle these instruments' historical and institutional context, their reasons and conditions for success but also their drawbacks, risks and decisive moments.

In this regard it is thought to usefully complement previous reports, in particular Fétiveau et al. (2014), by bringing actual practice to theory and concepts, in order to uncover milestones, steps and procedures to be replicated and actual practical challenges to be tackled.

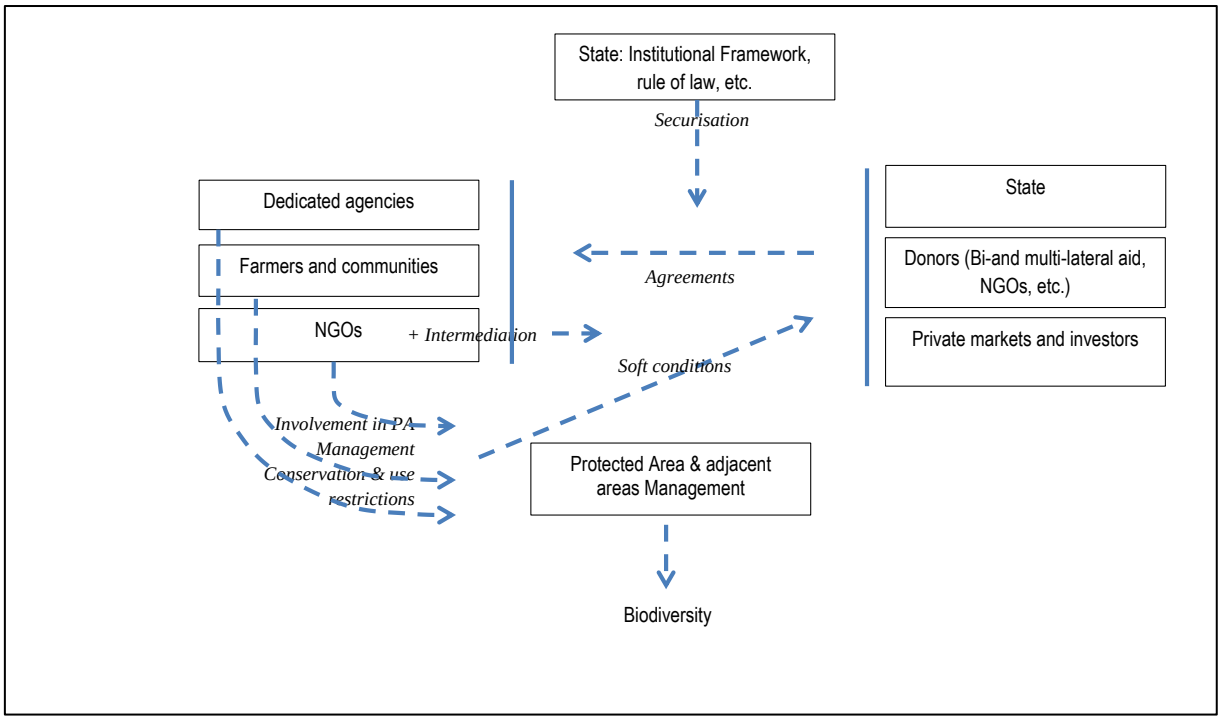


**Figure 1. Governance diagram for innovative financial mechanisms studied in this report**

*Source: Authors*

This report focuses its attention on terrestrial protected areas in Africa. Building on experts' experience, in particular within the IUCN network, we first screened a number of existing mechanisms that contribute to funding and incentivizing conservation in and around African protected areas, from payments for ecosystem services to fiscal reforms, from conservation easements to environmental trust funds. Out of this limited list of innovative financial mechanisms implemented in African PAs, we chose case studies in order to analyse mechanisms which were at the same time:

- representative of a certain category of mechanism mentioned above and promoted within the conservation community;
- implemented at a significant scale in terms of the land cover and biodiversity protected, the number of actors involved (farmers, adjacent communities, public entities, etc.) and the level of funding leveraged;
- innovative regarding both the source of funding *and* the institutional structure;
- in need of further research.

Following these selection criteria, 3 case studies were chosen in west and southern Africa so as to highlight both interesting differences and commonalities. While the Biodiversity Stewardship Programme in South Africa represents a potentially successful example of fiscal incentives to a number of private landowners (type C governance) in order to create protected areas within their farms to conserve and utilise biodiversity (IUCN categories IV, V and VI), the Gola Rainforest National Park in Sierra Leone as well as the network of national parks in Côte d'Ivoire are illustrations of mechanisms to fund IUCN category II public protected areas. Whereas in the Gola Rainforest case the instrument implemented, a conservation concession then a REDD+ project in partnership with international and local NGOs (type B governance), funds one single PA, the

Foundation for Parks and Reserves in Côte d'Ivoire, a private environmental trust fund, currently funds several PAs within the national network managed by a parastatal entity (type A governance). In all three cases, private as well as public actors have efficiency partnered in order to set up an innovative institutional structure and then significantly fund the protection of biodiversity in and around the concerned PAs. In all three cases also, legal framework and contractual security were necessary to back, implement, enforce and monitor the instruments designed. Innovation was finally needed at three levels in order to allow for biodiversity conservation at scale in and around protected areas: innovatively combining public and private funding; innovatively combining stakeholders within a mixed governance structure; and innovatively combining public, NGO and private regulation.

Each of these 3 innovative financial mechanisms also shows important specificities, whether geographical, institutional, historical, cultural, which have to be thoroughly explored if one wants to understand their respective strengths and opportunities, weaknesses and challenges, and thereafter draw some general lessons and recommendations regarding the potential benefits and risks associated with innovative financial mechanisms to fund African protected areas in the coming years.

To do so, the report will first successively present each of the three cases studies following a similar template (innovation's context, innovation at work, innovation at scale, innovation at risk); it will then conclude with common insights and salient observations.

## 1.5. References


Borrini-Feyerabend, G., Dudley, N. Jaeger, T., Lassen, B., Broome, N.P., Phillips, A., Sandwith, T., 2013. Governance of Protected Areas: From understanding to action. Best Practice Protected Area Guidelines Series 20, IUCN Gland, Switzerland, xvi + 124p.

CBD, 2012. Report of the High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020. Convention on Biological Diversity, Montreal, UNEP/CBD/COP/11/INF/20.

CBD High-Level Panel (2014). Resourcing the Aichi Biodiversity Targets: An Assessment of Benefits, Investments and Resource needs for Implementing the Strategic Plan for Biodiversity 2011-2020. Second Report of the High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020. Montreal, Canada.

Clements, T., Suon, S., Wilkie, D.S., Milner-Gulland E.J., 2014. Impacts of Protected Areas on Local Livelihoods in Cambodia. World Development 64 Supplement 1, S125–S134.

Dudley, N. (Ed), 2008. Guidelines for Applying Protected Area Management Categories. IUCN, Gland, Switzerland: x + 86pp. WITH Stolton, S., Shadie P., Dudley, N., 2013. IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland, xxp.

Emerton, L., Bishop, J. and Thomas, L., 2006. Sustainable Financing of Protected Areas: A global review of challenges and options. IUCN, Gland, Switzerland and Cambridge, UK, x + 97pp.

Farooqui, M.F., Schultz, M., 2012. Co-chairs' Summary of Dialogue Seminar on Scaling up Biodiversity Finance, Quito 6-9 March 2012. Secretariat of the Convention on Biological Diversity, Montreal: http://www.dialogueseminars.net/quito/quito_home.html.

Fétiveau, J., Karsenty, A., Guingand, A., Castellanet, C., 2014. Etude relative aux initiatives innovantes pour le financement de la biodiversité et l'identification des mécanismes à fort potential. Report for the French Ministry of Foreign Affairs and International Development, Paris.

Graham J., Amos, B., Plumptre, T., 2003. Governance principles for protected areas in the 21st century, a discussion paper, Institute on Governance in collaboration with Parks Canada and Canadian International Development Agency, Ottawa.

Geldmann, J., Barnes, M., Coad, L., Craigiee, I.D., Hockings, M., Burgess, N.D., 2013. Effectiveness of terrestrial protected areas in reducing habitat loss and population declines. Biological Conservation 161, 230-38

Hanauer, M.M., Canavire-Bacarreza, G., 2015. Implications of heterogeneous impacts of protected areas on deforestation and poverty. Philosophical Transactions of the Royal Society B Volume 370, issue 1681

Ituarte-Lima, C., Schultz, M., Hahn, McDermott, C., and Cornell, S., 2014. Biodiversity financing and safeguards: lessons learned and proposed guidelines. SwedBio/ Stockholm Resilience Centre at Stockholm University, Stockholm. Information Document UNEP/CBD/COP/12/INF/27 for the 12th Conference of the Parties of the Convention on Biological Diversity in Pyeongchang Korea.

Jack, B.K., Kousky, C., Sims, K.R., 2008. Designing payments for ecosystem services: Lessons from previous experience with incentive-based mechanisms. Proceedings of the National Academy of Sciences 105, 9465-9470.

Juffe-Bignoli, D., Burgess, N.D., Bingham, H., Belle, E.M.S., de Lima, M.G., Deguignet, M., Bertzky, B., Milam, A.N., Martinez-Lopez, J., Lewis, E., Eassom, A., Wicander, S., Geldmann, J., van Soesbergen, A., Arnell, A.P., O'Connor, B., Park, S., Shi, Y.N., Danks, F.S., MacSharry, B., Kingston, N., 2014. Protected Planet Report 2014. UNEP-WCMC: Cambridge, UK.

Lapeyre, R., Pirard, R.., 2013. Payments for environmental services and market-based instruments: next of kin or false friends? Working Paper 14/13, IDDRI, Paris, France, 16 p.

Lester, S., Halpern, B.S., Grorud-Colvert, K., Lubchenco, J., Ruttenberg, B.I., Gaines, S.D., Airamé, S., Warner, R.R., 2009. Biological effects within no-take marine reserves: a global synthesis. Marine Ecology Progress Series 384(2), 33-46.

Lindsey, PA., Balme, G.A, Funston, P.J., Henschel, P.H., Hunter, L.T.B., 2016. Life after Cecil: channelling global outrage into funding for conservation in Africa. Conservation Letters XXX, doi: 10.1111/conl.12224.

McCarthy, D., Donald, P.F., Scharlemann, J.P.W., Buchanan, G.M., Balmford, A., Green, J.M.H., Bennun, L.A., Burgess, N.D., Fishpool, L.D.C., Garnett, S.T., Leonard, D.L., Maloney, R.F., Morling, P., Schaefer, H.M., Symes, A., Wiedenfeld, D.A., Butchart, S.H.M., 2012. Financial Costs of Meeting Global Biodiversity Conservation Targets: Current Spending and Unmet Needs. Science 338, 946-949.

McNeely, J.A., 1988. Economics And Biological Diversity: Developing And Using Economic Incentives To Conserve Biological Resourcces. Island Press.

Méral, P., 2015. Market-Based Instruments: Analysing the Emergence of the Concept. INVALUABLE Working Paper 0315, INVALUABLE, Institut de recherche pour le développement, Montpellier.

OECD, 2013. Scaling-up Finance Mechanisms for Biodiversity, OECD Publishing, Paris.

http://dx.doi.org/10.1787/9789264193833-en

Ogwal, S.F., Schultz, M., 2014. Co-Chairs´ Summary of Second Dialogue Seminar on Scaling up Finance for Biodiversity, Quito 9-12 April 2014. Secretariat of the Convention on Biological Diversity, Montreal.

Panayotou, T., 1994. Economic instruments for environmental management and sustainable development. UNEP, Nairobi.

Parker, C., Cranford, M., Oakes, N., Leggett, M. (ed.), 2012, The Little Biodiversity Finance Book, Global Canopy Programme, Oxford, + Methodology Appendix

Sarker, A., Ross, H., Shrestha, K.K., 2008. A common-pool resource approach for water quality management: An Australian case study. Ecological Economics 68, 461-471.

Secretariat of the Convention on Biological Diversity, 2014. Global Biodiversity Outlook 4. CBD, Montréal, 155 p.

UNEP-WCMC and IUCN (2016). Protected Planet Report 2016. UNEP-WCMC and IUCN, Cambridge UK and Gland, Switzerland.

Vatn, A., Barton, D.N ., Lindhjem, H., Movik, S., Ring, I., Santos, R., 2011. Can markets protect biodiversity? An evaluation of different financial mechanisms. Noragric Report 60, Department of International Environment and Development Studies, Noragric, Norwegian University of Life Sciences (UMB).

Vatn, A., Barton, D.N., Porras, I., Rusch, G.M., Stenslie, E., 2014. Payments for Nature Values, Markets and non-market instruments. NORAD Report 5/2014, Norwegian Agency for Development Cooperation.

Waldron, A., Mooers, A.O., Miller, D.C., Nibbelink, N., Redding, D., Kuhn, T.S., Roberts, J.T., Gittleman, J.L., 2013. Targeting global conservation funding to limit immediate biodiversity declines, PNAS 110(29), 12144-12148.

Whitten, S., Van Bueren, M., Collins, D., 2003. An Overview of Market-based Instruments and Environmental Policy in Australia. Paper Presented at the AARES Symposium (The Australian Agricultural and Resource Economics Society), Market-Based Tools for Environmental Management, Canberra, Australia.

# 2. Innovating together with communities: the Gola Rainforest, Sierra Leone[11]

## 2.1. Preparing for the innovation: case study context

### 2.1.1. National Level

After more than 10 years of civil war (1991–2002) and a recent epidemic of Ebola (2013-2015), Sierra Leone, with over 7 million inhabitants (2015 Population and Housing Census), ranks among the poorest countries in the world with a 2014 GDP per capita (PPP) of 1,966 USD (160th out of 183)[12]. In 2011, the national poverty headcount ratio (at USD 1.90 a day, PPP) was 52.3% while in 2013 only 46% of the population over 15 years old was literate.

The country, a total land surface area of 71,740 km², lies within the Upper Guinean Lowland Forest Ecosystem, an internationally recognised biodiversity hotspot with an abundant richness in ecosystem and species biodiversity (lowland rainforests, mountain forests, savannah woodlands, agricultural, freshwater and wetlands)[13]. Forest land represents 38.5% of Sierra Leone's land surface[14], and it is estimated that there are over 2000 species of plants including 74 endemic species, 274 bird species - 14 of global conservation concern - and 170 mammal species, including a total of 15 species of primate, 18 species of antelopes and duikers, and 9 bat species[15].

Sierra Leone is an agricultural country. About half of the surface is agricultural land and 80% of the people are exclusively dependent on farming for their livelihood. Major annual crops are rice (more than 90% of the farming population cultivates it), cassava, sweet potato, groundnut, and perennial crops include oil palm, cocoa, coffee, among others. As a result, one of the main drivers of the country's deforestation and biodiversity loss remains slash-and-burn agriculture whereas fuel wood, charcoal extraction, logging for timber and mineral exploitation are significant threats.

Party to the Convention on Biological Diversity since 1995, Sierra Leone adopted its National Biodiversity Strategy and Action Plan (NBSAP) in 2003 to mitigate such pressures and tackle direct and indirect drivers. Strategic objectives therefore include to establish and properly manage all protected areas (national parks, wildlife sanctuaries, strict nature reserves) in representative ecosystems across the country while creating a fair redistribution of benefits and opportunities arising from the conservation and sustainable utilization of biodiversity. For this, the NBSAP aims at mobilizing adequate financial resources for the purposes of conservation and sustainable use of biodiversity. The country's Intended Nationally Determined Contribution (INDC) within the Paris Agreement framework (2015) stipulates that Sierra Leone would need a cumulative USD 900 million to reduce its carbon footprint and follow green growth pathways in all economic sectors by 2035.

[11] Authors would like to sincerely thank Nicolas Tubbs, Colin Pringle and Pietro Sandini (RSPB) for their active support in organizing the field trip to Gola Rainforest National Park as well as for their very useful comments on this chapter. All people interviewed and informally met in Freetown and Kenema are also to be warmly thanked for their support and time.

[12] "GDP per capita, PPP (current international )", World Development Indicators database, World Bank. Database updated on 11 April 2016. Accessed on 14 April 2016.

[13] The Upper Guinean Forest ecosystem is listed on the World Wildlife Fund's (WWF) "Global 200" list of critical regions for conservation and is included as one of Conservation International's 34 global biodiversity hotspots (Myers et al., 2000)

[14] However the GoSL estimates that only 5% of the *original intact* forest remains.

[15] See the Sierra Leone 5th National Report to the Convention on Biological Diversity, October 2014 and the country profile on the website of the Convention of Biological Diversity.

National protected land is 4.1% of the total surface area, with 48 forest reserves and conservation areas. Being in the past under the supervision of the Ministry of Agriculture, Forestry and Food Security (MAFFS) of the Government of Sierra Leone (GoSL) within the Forestry Division, 15 protected areas (PAs) are now oversighted under the National Protected Area Authority (NPAA), newly established by an Act of Parliament in 2012[16] and effectively operational since 2014. Other pieces of legislation related to biodiversity include the Forestry Act of 1988, Forestry Regulations 1989, and the 2010 Forest Policy, as well as the Wildlife Conservation Act of 1972 and its related Conservation and Wildlife policy (2010)[17]. Additionally, the Environment Protection Agency Act has established the Environmental Protection Agency (EPA) of Sierra Leone, responsible for implementing and ensuring compliance with national environmental policies, including environmental impact assessments.

Politically, Sierra Leone is a constitutional parliamentary republic with three spheres of government: central government, local councils and chiefdom councils, where the last two hold powers to raise revenue (the Local Government Act 2004) and receive transfers from central government[18]. There are 4 provinces and 19 local councils[19] in the country while there are 149 chiefdoms, each headed by a Paramount Chief, supported by section- or sub-chiefs. In total the country operates under a dual system of general law and customary law, of which the latter is the most important. Consequently, the vast majority of rural land is subject to customary tenure arrangements, with two main categories, i.e. communal lands and family lands.

### 2.1.2. The Gola rainforest in Sierra Leone

The Gola rainforest, situated in south-east Sierra Leone along the Liberian border, roughly occupies 70,000 hectares within the larger Greater Gola Landscape which, together with the Liberian side, occupies 350,000 ha in total. It constitutes the largest remaining tract of the Upper Guinean tropical forest in the country, and also stretches across Liberia (42% of the Upper Guinean forest), southern Guinea, Côte d'Ivoire Ghana and western Togo (Figure 1).

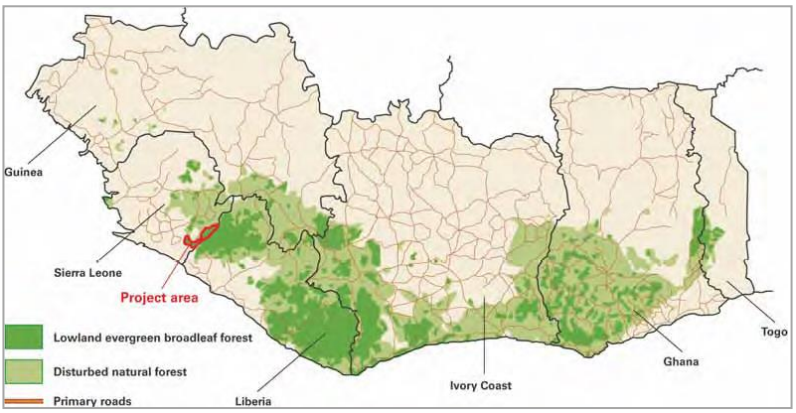


**Figure 1. The Upper Guinea rainforest in the region, incl. the Gola rainforest area in Sierra Leone**

*Source: http://www.golarainforest.org/*

[16] The National Protected Area Authority and Conservation Trust Fund Act, 2012.
[17] The Wildlife Conservation Act of 1972 is currently being revised and validated by the Cabinet.
[18] See the Commonwealth Local Government Forum, website http://www.clgf.org.uk/regions/clgf-west-africa/sierra-leone/
[19] Made up of five city councils and one municipal council in the urban areas, and 13 district councils in the predominantly rural areas

The Gola rainforest in Sierra Leone lies in seven chiefdoms[20] in three districts (Kenema, Kailahun, Pujehun) and two provinces (Eastern, Southern). The local communities within the 7 chiefdoms, an approximate total of 140,000 people residing in 474 villages, are mainly of the Mende tribe[21]. Communities directly adjacent to the forest are considered poor, and almost all (90%) depend on subsistence agriculture as their primary source of income (Bulte et al., 2013). In most villages, key amenities are absent. Electricity is available in only 5% of villages while public toilets are in 11% of villages (Bulte et al., 2013). Formal education levels are also very low (67% received no education); as a result, only 29% of the local population are able to read and write, especially women (13%).

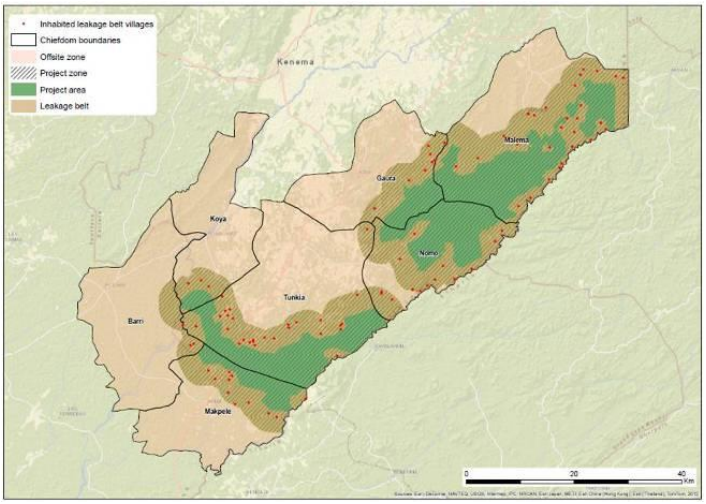


**Figure 2. The Gola rainforest National Park (3 blocks) and adjacent communities**

*Source: Tubbs et al., 2015*

Apart from being a global biodiversity hotspot (Conservation International) and one of the WWF Global 200 Ecoregions, the Gola rainforest is recognized as an Important Bird Area (IBA). The forest is host to 327 bird species, including flagship species such as White-necked Picathartes (*Picathartes gymnocephalus*), Rufous Fishing-Owl (*Scotopelia ussheri*), White-breasted Guinea fowl (*Agelastes meleagrides*), 26 species of shrews and rodents, 34 species of bats, several species of ungulates (duikers), as well as 49 species of large mammals, among which the forest elephant and the endangered and endemic pygmy hippopotamus (*Choeropsis liberiensis*). Endangered Chimpanzees are also relatively widespread throughout the forest.

The main threat to the Gola Rainforest and its rich biodiversity, in a post-civil war context, are slash-and-burn agricultural practices. Other threats include bush meat trade, especially cross-border with Liberia, illegal logging, and increasing artisanal mining in the forest. In the latter case for instance the possibility that large deposits of iron ore exist in the forest might pose a direct pressure to the forest. Most recently, palm oil plantations also have begun being established neighbouring the National Park.

Management and conservation status of the Gola Rainforest did evolve in the beginning of this century. Initially in 1926, the Gola Forest Reserve (GFR) was officially established over 29,061 ha (Belvaux, 2012) over two separate blocks (Gola East and West) and was subsequently extended between 1930 and 1963 (including establishing a third block, Gola North) to finally reach a total

[20] These are: Makpele; Bari; Tunkian; Koya; Gaura; Nomo; Malema.
[21] It is important to note that, of course, the initiative described here does not aim at working with all those communities, but rather with those directly adjacent to the forest.

74,903 ha, all under the supervision of the Forestry Division. The GFR was then leased to several logging companies from the 1960's (Forest Industries Corporation-FIC and Sierra Leone Timber Industry and Plantation Company Limited-SILETI) usually for a period of 25 years. Against payment of royalties and fees, the concessionaires obtained permission to enter their respective concession and harvest, utilise, process, transport and market timber (not exceeding a contractually set annual allowable cut). Under this agreement, local and adjacent communities were allowed to continue entering the GFR to hunt and fish and collect non-timber forest products (NTFP).

In the beginning of the 1990's however, the status of the concessions progressively changed. Other values from the Gola Rainforest were investigated through a number of biological surveys (Lindsell et. al, 2011). This was triggered in 1989 when a rapid survey indicated the importance and unique value of the biodiversity in the forest, uncovering a particularly high number of birds' species and primates endemic to the site.

This resulted in 1990 in a first partnership agreement between the Forestry Division, and two non-governmental organizations (NGOs), the Conservation Society of Sierra Leone (CSSL, Birdlife in Sierra Leone) and the Royal Society for the Protection of Birds (RSPB, Birdlife in the UK) (Box 1). In 1993 an Interim Management Plan for the GFR was thus prepared by these partners and sponsored by the Overseas Development Agency (ODA). Yet, such efforts were stopped during the civil war (1991-2002).

They only resumed thereafter in 2004 when the partners launched a new initiative, the Gola Forest Conservation Concession Programme, the first of a succession of innovative financial approaches adopted up to now in order to ensure the protection and sustainable development of the Gola Rainforest protected area and its surroundings.

**Box 1. Describing NGO partners**

**The Royal Society for the Protection of Birds (RSPB)** is the UK charity working to secure environment for birds and wildlife. It is Europe's largest wildlife conservation charity and operates across the world. The RSPB is the UK partner of Birdlife International. It claims 1.2 million members, including over 200,000 youth members, a staff of over 2,000 people and almost 13,000 volunteers. Resources available for charitable purposes in 2014 were £99 million, supporting 200 nature reserves and covering almost 130,000 hectares in the UK. The RSPB is a non-statutory body incorporated by Royal Charter since 1904, and is run through UK headquarters, three national offices, nine regional offices, as well as a local network of 150 local groups.

**The Conservation Society in Sierra Leone (CSSL)**, established in 1986, is Sierra Leone's most prominent biodiversity conservation NGO. Its main aim is to promote the wise use and management of Sierra Leone's natural resources through education, advocacy and support for research, management activities and sustainable programmes. CSSL is the Sierra Leone partner of Birdlife International. Recent achievements include engagement with thousands of School Nature Clubs in Sierra Leone, contribution to sustainable development around Lake Sonfon, as well as the Sea Turtle Conservation Programme, funded by the U.S.Fish and Wildlife Service.

## 2.2. Innovation at work: a long-term innovative contractual approach

### 2.2.1. The Gola Forest Conservation Concession Programme

In 2002, the Forestry Division of the then Ministry of Agriculture, Forestry and Marine Resources, together with RSPB and CSSL signed the "Gola Conservation Concession Framework". In the latter, the two NGO partners agreed to conserve the integrity of the Gola Forest Reserves (the 3 blocks) in perpetuity and in turn compensate local actors for the loss of logging rights. It was therefore agreed to put in place a community development programme, including capacity building, to ensure alternative and sustainable use by the seven chiefdoms in the Gola area.

In 2003 therefore, a cooperation agreement with local communities was signed, where a 25-year Conservation Concession was deemed the most appropriate way to ensure the conservation of the forest. Commercial logging would not be allowed in the GFR, whereas in return for the loss of revenue there would be compensation through a benefit sharing agreement[22].

In 2004, following a formal application to the now Ministry of Agriculture, Forestry and Food Security (MAFFS) for a conservation concession covering the 3 Gola forest's blocks, MAFFS declared a logging moratorium in the GFR. Funding (USD 1million) was then obtained from the RSPB, the Global Conservation Fund of Conservation International and the UK government's Defra Darwin Initiative, for a two-year development phase, which culminated in November 2006 with the first full draft management plan for the Gola forest reserves, actively discussed with communities in each of the 7 chiefdoms.

The management plan sets to "maintain, and where appropriate enhance, the existing 74,900 ha of tropical moist lowland high evergreen forest" and simultaneously "ensure the Gola communities benefit from, and participate in, the protection and management of the Gola Forest in perpetuity". Importantly, critical objectives and management activities in the plan are, among others, to 1/ upgrade the status of the Gola Forest Reserves to that of National Park and 2/ provide the Reserves with adequate and efficient finance.

Building on this first development phase, in 2007 the MAFFS, RSPB and CSSL signed a renewable 5-year partnership agreement to confirm and continue the Gola Forest Conservation Concession Programme. A management committee, to oversee the project and thus efficiently manage the Reserves, was established and comprised of a member from each of the partners and a representative of the 7 Gola Chiefdoms. Operationally, the project was delivered by a team of local staff, seconded and capacitated with international technical support from RSPB.

In parallel, a renewable 5-year agreement (2007-2012) was signed with the seven chiefdoms: the Gola Forests Conservation Concession Community Benefits and Payment Agreement (also called Benefit Sharing Agreement-BSA). The latter clearly defines the Conservation Concession: it stipulates that the Gola Forest Reserves are to be managed for the conservation of the plant and animal diversity, and not for the exploitation of timber or other resources. In return, since the local communities do not receive fees or royalties in respect of timber exploitation and since other activities within the forest will be restricted, the agreement provides for payments and benefits to be provided.

[22] Importantly, this designation as a Conservation Concession was also a requirement before the Gola Rainforest could be gazetted as a National Park (see below).

In the BSA, distribution of payments is twofold, on the one hand to local and traditional authorities, on the other to local communities and historical landowners. First, while the 3 districts councils each receive a USD 1,000 yearly, the seven Paramount Chiefs receive an annual amount of USD 1,000 as a compensation for foregone royalties that would have been received for the exploitation of timber or other forest resources. In return traditional chiefs must do all in their power to ensure compliance with the management plan by their people. Second, at the community level, each of the 7 chiefdoms is provided with an annual amount of USD 10,000 to support a Community Development Fund assisting development projects in the chiefdom's area (according to a set of agreed priorities, procedures, and criteria), plus a programme of scholarships for the 7 chiefdoms (a total of USD 7,500 annually overall). At the individual level also, lawful historical landowners within the GFR, whose recognised historical land rights are inside the reserves, receive a total of USD 28,000 to be divided among them. Finally, a one-off total amount of USD 35,000 is granted for all 7 chiefdoms as a start-up kit to support livelihood-related investments. In total, the 2007-2012 BSA was entirely donor-funded and allocated USD 155,500 annually plus USD 35,000 one-off (an equivalent USD 122,500 per year) to local communities and authorities (see Table 1 for summary).

| **Payment (benefit)** | **Annual Amount (USD)*** |
|---|---|
| **Authorities** | |
| District Councils | 3,000 |
| Paramount Chiefs | 7,000 |
| **Community members** | |
| *Community level* | |
| Community Development Funds | 70,000 |
| Scholarships | 7,500 |
| Start-up Kits for Chiefdoms (once-off) | 35,000 |
| *Individual level* | |
| Landowners | 28,000 |
| **TOTAL** (equivalent annual) | 122,500 |

* Unless specified

**Table 1. Benefit-sharing with local communities**

*Source: Author, from appendix 2, in Forestry Division (2009)*

Innovatively in this 2007-2012 BSA, funds distributed among communities, local and traditional authorities were clearly understood as a conditional "compensation for foregone rights and for respect of management plan" (article 8 in the agreement). On the one hand, Gola communities adjacent to the Gola forest, highly dependent on forest resources for their livelihoods, act as service providers by accepting to partly refrain from using forest resources. On the other, these payments are conditional to communities' compliance with set regulations (e.g. use restrictions[23])

[23] Interestingly, Article 7 on the BSA stipulates: « Under the legal instruments creating the reserves and extensions, the inhabitants of the Chiefdoms surrounding the reserves have enjoyed the right to enter the forest for certain specified purposes, which vary depending on the reserve or extension in question, and may include the following: Hunting, trapping and fishing, in accordance with applicable laws ; Passing through the forest from place to place ; Collecting thatch, binding materials and building poles ; Tapping and collecting of

and their commitment to stop activities that are prohibited under the GFR management plan. In turn, in case a conflictual issue (an unlawful activity) is not resolved, partners may temporarily withhold payments to the communities concerned. Though this conditionality was rather soft and was never actually mobilized to suspend benefits' distribution during the period, community members and their leaders have been really aware of it, fostering respect of rules among the local population.

From 2007 to 2012, the Gola Forest Conservation Concession Programme, including the BSA, was entirely donor-funded by the European Union (European Commission-Tropical Forest Fund) and the French GEF (Fonds français pour l'environnement mondial-FFEM). It was estimated to cost approximately 6 million Euros in total (plus nearly 3 million Euros for the establishment of an Endowment Fund, the International Eco-fund-IEF; see Hipkiss and Tubbs, 2012), including 1.2 million Euros funded by FFEM. Through a project leader, RSPB coordinated the project (contractor of the grants, responsible for the administrative, financial and technical management) and executed it, though in close collaboration with the other partners, CSSL and the GoSL (Forestry Division of the MAFFS).

The Partners finally reached a major milestone in delivering their vision with the gazettement of the Gola Rainforest National Park (GRNP) in 2010, which was formally launched by the President (H.E. Koroma) on the 3rd December 2011. This important milestone, together with the end of the EU and FFEM funding, triggered another breakthrough innovation for financing the Gola rainforest more sustainably, through a REDD mechanism.

### 2.2.2. Innovation 2.0? Recent transition towards market mechanisms

In 2012, the donor funded Conservation Concession project was successfully completed. Back in 2007, the Partners had already identified complementary innovative mechanisms by which Gola would avoid the funding "boom and bust" cycle and be financed sustainably beyond the donor phase, including an endowment fund and a REDD project (Hipkiss and Tubbs, 2012). The decision to implement the latter mechanism was made with the anticipation that the programme's and GRNP's future financial stability would partly rely on the sale of verified carbon credits from the conserved forest (avoided emissions from deforestation and forest degradation) under the newly established Gola REDD Project with the support of the GoSL.

In the absence of a compliance market in Sierra Leone, the Gola REDD Project was developed to sell credits on the voluntary carbon market following two leading international voluntary carbon standards, the Verified Carbon Standard (VCS) and the Climate, Community and Biodiversity Alliance standard (CCBA). This model is entirely result-based, having to demonstrate at the same time the deforestation prevented (VCS) and the direct benefits to biodiversity and local communities (CCBA). The project followed the international principles of free prior informed consent (FPIC), and the project was required to go through a specialised and third party audit to confirm its compliance with the standards. It was then required to go through a verification audit, to establish its delivery against the standards. In total the scale of funds potentially levied for the funding GRNP relies on the number of verified carbon units (VCUs) generated, and the unit price these are sold at, including a premium. Each verified carbon unit is equivalent to one tonne of $CO_2$ emissions avoided. Verified carbon units result from quantifiable scientific assessments (i.e. carbon stored in forest plots) and benefits to people and wildlife. The project is also required to avoid leakage in the immediate surroundings of the project area (Leakage Belt) over which project partners have no legal authority. Therefore, FPIC requirements translated in over two years' worth of consultation with local communities and chiefs which resulted into the full livelihood

produce from raphia and oil palms ; Harvesting tree crops from plantations established before the creation of the reserves ; etc.

programme being delivered today in the National Park's adjacent zones (Tubbs et al., 2015)[24]. Overall, the entire model translates the partners' desire to achieve scientific integrity and good practice to protected area management, demonstrating benefits to biodiversity and local communities with a sustainable and innovative financial model.

In order to comply with both standards and thus be able to start selling verified carbon credits on the voluntary market (at a premium price), historical partners innovatively modified the project institutional structure and associated contractual arrangements (Figure 3).

First, the BSA was revised to capture the much broader set of livelihood activities being delivered to directly benefit adjacent communities' livelihoods. While most of the previous BSA's conditions were reconducted to conditionally[25] compensate all communities in the 7 chiefdoms, new additional attention and support was paid to communities located closest to the GRNP. Hence a "REDD BSA" was signed. To reduce leakages in the buffer area around the GRNP (the core project zone), the project started working specifically with villages situated in the Leakage Belt (4km radius adjacent to the park, see Figure 2 above). A Conservation and Cooperation Agreement was consequently signed with each of these 122 Forest Edge Communities (FEC) situated in the Leakage Belt, represented by their Paramount Chief, Section Chief and Village Chief. In this 6-year agreement, each FEC agrees to continue protecting the GRNP and abiding by its laws and regulations, and commits to work with the project to introduce alternative livelihood activities so as to reduce deforestation outside the GRNP. In return, each FEC, in addition to the ongoing BSA is to be provided with 4 support packages: 1/ agricultural assistance to increase yields in subsistence crops (rice and vegetables), 2/ cocoa rehabilitation to increase productivity and quality, 3/ helping developing saving and lending schemes (village savings and loans' associations), and 4/ two annual scholarships (a boy and a girl) for secondary school studies and 5/development of co-management and land use planning.

In December 2015 the Gola REDD project was successfully verified by independent auditors to the two leading standards on the voluntary carbon market (VCS and CCBA). Arguably, it avoided the emission of 1.2 million tonnes of $CO_2$ equivalent between August 2012 and December 2014, generating 975,000 verified carbon units. The project was awarded a gold level for exceptional climate change adaptation and biodiversity benefits and has a life span of 30 years. Importantly, it will need to go through regular verification audits to acquire further VCUs.

Second, a non-for-profit company limited by guarantee (CLG), the Gola Rainforest Conservation LG, was set up in 2015 (and incorporated in 2016) under the law of Sierra Leone (The Companies Act, 2009) in order to act as a legal entity to lawfully receive proceeds from the sale of verified carbon credits. Importantly, the CLG status protects the members running the company (which contribute with a nominal amount, typically small) from personal liability for the company's debts, mitigating their risks. In addition, non-for-profit CLGs are prohibited from distributing their profits to their members. Gola Rainforest Conservation LG's three founding members include

[24] Important is also to note that in addition, following FPIC requirements, each traditional landowner holding recognised rights inside the GRNP (the core project area generating carbon credits) was also to sign, after adequate advice and consultation in the local language, an individual agreement with the GoSL and the concerned Paramount Chief for the "assignment of carbon credits for the Gola Rainforest National Park". In this Memorandum of Understanding (MoU), the landowner agrees "to fully and irrevocably transfer to the [GoSL] all rights, title, interest, benefit, allowance or other claims whatsoever it may have to any carbon credits under any customary or other domestic law (…) generated through the protection, conservation, management (…) of any forest or other vegetation on the land", and this applies retroactively. In addition, the landowner must refrain from undertaking or encouraging any activity that might contribute to deforestation or forest degradation. In return and compensation, the GoSL must ensure that the proceeds from the sale of carbon credits will be used for benefits to landowners through the mentioned REDD BSA (see below).

[25] Note that the new REDD BSA clearly stipulates: "If any stakeholders engage in any forest-damaging activities in the Project area, (…) the GRNP Management will endeavour to (…) negotiate a solution. (…) If a solution is not reached, steps may be taken to withhold payments from stakeholders deemed responsible".

NPAA (on behalf of MAFFS), RSPB and CSSL, which all nominate one representative on the members' board. At the management level, a board of 4 appointed directors include one NPAA representative, one from RSPB, one from CSSL and finally one representative from the 7 Paramount Chiefdoms on behalf of the 7 chiefdoms. As such, without being formal members, communities around GRNP are well represented in the way the Gola Rainforest Conservation LG is run, and how it manages the GRNP and distributes benefits from the carbon proceeds.

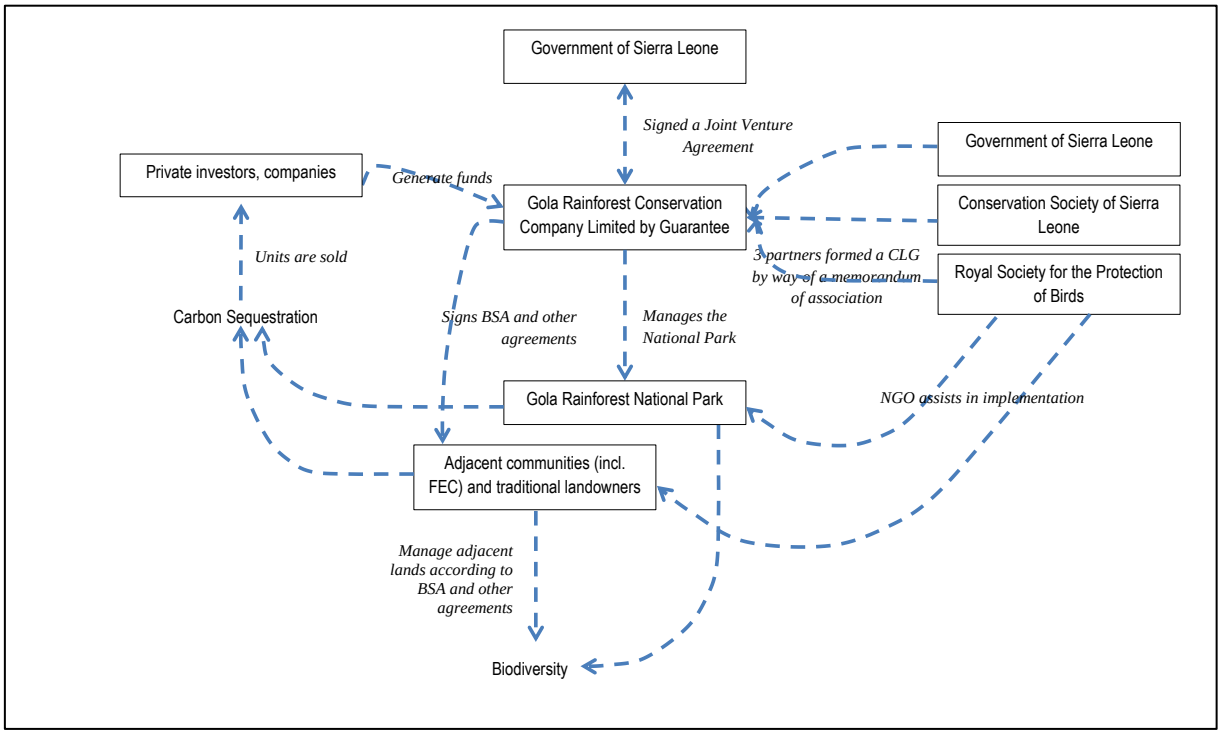


**Figure 3. Governance diagram for the Gola Rainforest National Park, version 2.0**

*Source: Authors*

Operationally, the Company signed a joint venture agreement with MAFFS, responsible for the management of national parks and protected areas, to manage the project area as a REDD project for the lifetime of the project. The agreement includes the transfer of carbon rights from GoSL to the CLG in order to enable the sale of carbon credits. On the ground the project is being implemented by the "GRNP management", now a department of the Gola Rainforest Conservation LG (see Figure 4), while RSPB was designated as the technical lead (including for the marketing and sale of VCUs) and thus signed a service agreement with the latter for the next five years. Financially, the CLG bank account is located in the United Kingdom (UK), as it was felt many investors and carbon credit buyers would feel more secure this way.

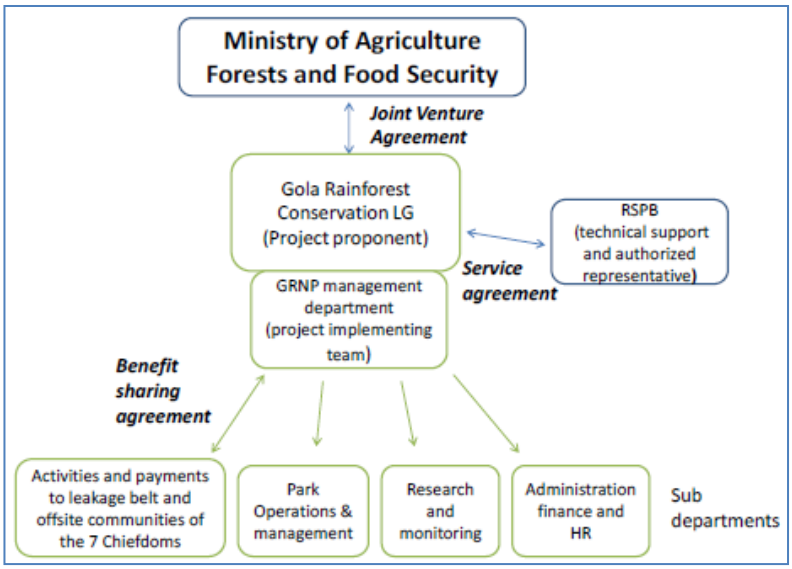


**Figure 4. Structure of the Gola Rainforest Conservation LG**

*Source: RSPB, 2013*

Once the first carbon proceeds are paid to its account, the Gola rainforest conservation LG will eventually distribute these as follows: first, the GRNP operational costs, including the BSA, will be covered, then 50% of any excess remaining would then be disbursed on a Conservation Trust Fund to be administered by NPAA and spent on any other protected area in the country (not necessarily in Gola), 40% would be distributed to a Community Trust Fund (endowment fund) managed by RSPB and dedicated to Gola, while the final 10% would be used for national capacity building.

## 2.3. Innovation at scale: socio-economic and environmental results

Contrary to most cases in African PAs so far, such successive innovative approaches for the Gola Rainforest (from the logging concession to the Conservation Concession and then to the Company Limited by Guarantee) actually encompass a significant tract of forested land and concern a large number of adjacent communities and landowners. This in turn allows conservation land-use at an optimal ecological scale.

To date, the Gola REDD project consists of a project area covering 69,714 hectares (of which 68,515 hectares is forested) inside the GRNP plus a leakage belt containing 62,932 hectares of forest, where livelihood activities have managed to prevent deforestation to date. In total then, this is more than 132,000 ha of land falling under this efficient protection approach at the landscape level, approximately 2% of Sierra Leone total territory.

The Project's annual budget is approximately USD 1.6 million, including all department expenses and activities (figure 4): Park Operations and Management, Finance, Administration & Human Resources, Research & Monitoring, and finally Community Development & Outreach (BSA). In total, the project permanently employs 170 local staff members, including 49 park rangers fully working for the park's integrity.

Based on agreed and recognised borders, park rangers patrol the GRNP in different separate sub-units of 6 to 8[26]. The area is divided into 10 sections which are each patrolled in turn. In addition, a permanent team is present where illegal activities are more frequent. Each sub-unit team is provided with a patrol plan defined by the supervisor and assisted by a GIS specialist who determines target coordinates to be reached by the team during their patrol. During the latter, park rangers record, on an incidence book, animal signs, encroachment and other illegal activities, as well as look for any heritage sites. Although park rangers are not armed, they are allowed to arrest intruders and community members undertaking illegal activities within the National Park and hand them to the police for prosecution. If necessary, a Rapid Response Unit from the local Police is called to join the rangers to assist with the arrests. In 2015-2016 park rangers patrolled a total of 6,363 kms and arrested several poachers and illegal miners. Patrols in themselves serve as a strong deterrent. Although such evidence remains qualitative, the Ebola outbreak clearly proved the efficiency of park rangers. Indeed, patrols were not allowed then as part of the Ebola response efforts, particularly quarantine; illegal mining and logging as well poaching as a result increased inside the National Park[27]. It then again decreased to very small incidences since the Project activities resumed in 2015. In total, as shown in Figure 5 below, the GRNP is really efficiently protected and deforestation inside it is kept to a minimal, if not zero, level.

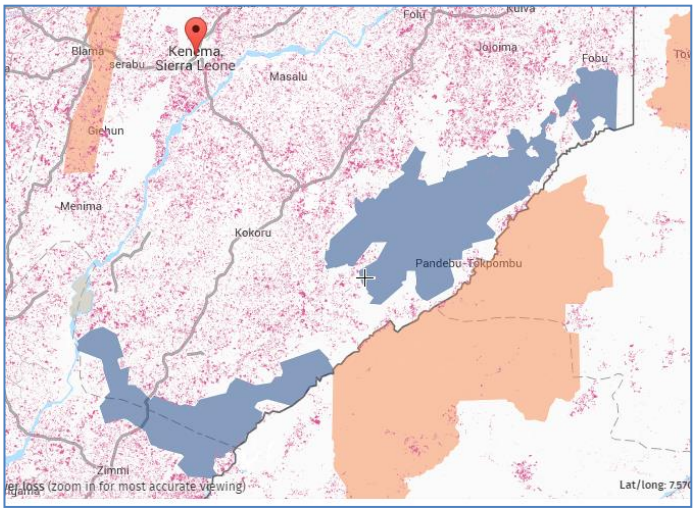


**Figure 5. Deforestation in the GRNP : kept minimal**

*Note: blue (and green) areas are designated protected areas (the GRNP 3 blocks) while red points are deforestation since 2000*

*Source: Global Forest Watch, accessed July 2016*

At the community development level, results also look impressive when it comes to their scale and contribution to reducing resentment and gaining local support for the GRNP and conservation in general (Tubbs et al., 2015)[28]. Thanks to the BSA the Project has extensively supported communities in the 7 chiefdoms since 2007. As shown above, USD 122,500 have since 2007 been spent annually for community development in the larger area while around 30 staff employed in the Community Development & Outreach department provide critical support to communities around the GRNP. Funded community projects, among many others, include a satellite hospital in

[26] Park rangers are divided in 2 units, which themselves are divided into 3 sub-units of 6-8 people.
[27] However, the REDD Auditors confirmed that this did not lead to any significant deforestation.
[28] For alternative views on this, see also Wilebore et al. (2015), who tend to show that payments to FECs outside the National Park (unconditional cash transfers-UCTs) might not really promote conservation.

the Makpele chiefdom, bridge construction or rehabilitation in Tunkia and Malema chiefdoms, a Mosque, a primary school, etc. Besides, environmental education is widely provided in the area with around 40 school clubs set up and 2,000 people annually attending road shows all over the 7 chiefdoms. More specifically even, the 122 forest edge communities, hence approximately 24,000 people living in the immediate surroundings of the GRNP, have been supported so far with additional cocoa and agricultural assistance (benefitting several thousand farmers), 244 scholarships, as well as village savings and loan schemes (for 750 women in 34 FECs).

Research activities finally assist such efficient and fair conservation and development approaches. Surveys are indeed regularly conducted to monitor and count chimpanzees, birds, especially the *Picathartes*, amphibians but also pigmy hippos. In the latter case, community volunteers, also called "citizen researchers", are locally recruited to do monitoring and evaluation of pigmy hippos and sensitize community members about the risks, habits and the environmental value of these animals in the area.

## 2.4. Innovation at risk: challenges and the way ahead

As evidenced above, successive innovative approaches for conserving the Gola Rainforest have so far been successful in preserving the integrity of the GRNP and, importantly, work together with adjacent communities to comply with regulations as well as keep deforestation outside the GRNP.

However, in a State which have faced violent civil war and a recent Ebola outbreak, currently with weak economy, quite limited capacity and governance[29], such innovations do not come without some level of uncertainty and challenges. This may jeopardize the scheme's sustainability, if not checked and tackled properly.

Previous analysis has shown the existence of a complex institutional architecture. Whether for the Conservation Concession agreement or for the REDD Project, several national or international, public, private (NGO) or community partners needed to coordinate between themselves. CSSL, the national Birdlife partner in Sierra Leone, RSPB, the UK Birdlife partner, but also the GoSL, through several divisions (Forestry) or agencies (NPAA or EPA), as well as the representatives from 7 chiefdoms, all had to be included in the scheme. As a result, a significant number of MoUs, framework documents, agreements, have been signed since 2004 so as to define stakeholders' and parties' responsibilities, rights and entitlements. This in turn entails a lot of efforts and time to write, finalize and fine-tune, and finally negotiate and monitor these contracts; hence this incurs significant so-called "transaction costs" for the project as a whole[30]. While in the longer-term these complexities and transaction costs in the start-up phase will certainly smooth the operational phase and represent a small share of total costs, in the short-to-mid-term important transaction costs might be a burden for the scheme's governance.

The recent establishment and entry into force of the Gola Rainforest Conservation Company Limited by Guarantee (CLG) is even reinforcing this uncertainty in the institutional set-up (rules of the games). New contractual arrangements under the REDD Project and the CLG are still not fully implemented while some old agreements still hold. Command lines remain so far unchanged[31]. Legal transition of all liabilities and responsibilities from the Project entity to the CLG entity is still unclear at this point, and the supervision and decision role of the CLG's Board of Directors has yet to be set in more details and be better understood by all stakeholders.

[29] The Fragile States Index 2016, by the Fund For Peace (FFP), ranks Sierra Leone 34th out of 178 countries for its level of fragility. It is assessed as being on « Alert ». See http://fsi.fundforpeace.org/

[30] So far these transaction costs have been supported by the GRNP management Unit, then by the CLG.

[31] All Gola employees are under the Project entity's contractual supervision and hierarchy (work contracts signed with the project) while RSPB is providing technical assistance (through technical assistants directly employed by RSPB)

Institutional uncertainty also lies in the relationship between the GoSL which hold exclusive rights over the GRNP, and the area management unit (be it the Project entity or more recently the CLG). Though this has been recently solved with the signing of the REDD Project joint-venture agreement (2015) between GoSL and Gola Rainforest Conservation LG, the management status of the area (*de jure* rights over the forest) remains quite fuzzy. Hence a complex institutional situation, where the innovative scheme highly depends on current political will and personal connections to ensure its *de facto* management rights over the Gola forest. Whereas the current GoSL is certainly highly committed to conserve the Gola rainforest, this legal uncertainty needs to be reduced in order to support the emergence of such an innovative approach.

In this context of relative uncertainty, the process tends to be driven, for now, by international actors. First, at the strategic level the scheme's complexity and innovative nature, especially with the new CLG set up, does not allow all stakeholders, especially local ones, to fully understand the procedures, rights and responsibilities. At the operational level also, international technical assistance is still crucial in GRNP management operations and decisions being taken. Of course, such innovative approach and reliance on international (carbon) markets indeed needs time and training for local partners ; yet, capacity building is critical to make sure all stakeholders are capacitated enough to understand the scheme and be able to influence and co-drive the process.

Lack of strengthened community involvement, capacity building, communication and sensitization will on the contrary lead to increased resentment by local populations and their representatives. Adjacent communities, through the Paramount Chiefs, need to be even further capacitated in order to have their voice heard and taken into account[32]. Beyond distributional equity (distributing actual benefits from carbon to communities), procedural equity (broad stakeholders' participation) also matters in order for the Gola innovative approach to be locally legitimate and acceptable. This process is of great importance to ensure sustainability, especially in the current context where human-wildlife conflicts are felt in the vicinity of the GRNP. Local communities indeed, especially FEC, perceive a significant rise in crop raiding (including cocoa) from monkeys and birds[33]. Mitigating those costs of human-wildlife conflicts generated by the GRNP is, *in fine*, a critical success factor and condition for the innovative scheme's stability and efficiency.

## 2.5. Conclusion

The analysis of conservation in the Gola Rainforest conservation in Sierra Leone provides an excellent illustration of good practices for innovative financial mechanisms (IFMs) financing biodiversity conservation in and around protected areas in Africa. From a Conservation Concession arrangement funded by donors, the institutional set up has successfully moved toward a REDD market mechanism supported by a private company selling verified carbon units on the carbon voluntary market. In the process, all stakeholders, public and private, national and international, have efficiently and fairly partnered to design the successive innovative institutional arrangements. With the strong support of the Government of Sierra Leone, in particular in ensuring a clear legal framework and the rule of law, partners have agreed on, and signed, a number of agreements in order to clarify roles and responsibilities, rights and duties. This has allowed the innovative scheme to be clear, strong and complied with by all stakeholders, despite its overall complexity.

Thanks to this innovation, the integrity of the Gola Rainforest has been efficiently preserved, while the area was subsequently gazetted as a National Park. Infrastructure and patrolling operations

[32] Of course, we showed above that the REDD project is the result of over 2 years' worth of consultations with communities. A grievance mechanism is also in place. Yet, all this should be well maintained and strengthened also during the current implementation phase.
[33] Ongoing research is aiming at lining up scientific results on this with community perceptions.

have been fully funded (approximately USD 1.6 million annual budget) to successfully prevent slash-and-burn agriculture inside the National Park as well as illegal poaching and mining. Adjacent communities have also been largely supported with livelihood activities so as to foster development and generate synergies with biodiversity conservation. Significantly, Park operations and community support were undertaken at scale with around 2% of Sierra Leone total territory being protected in Gola (the National Park and its buffer zone) and 24,000 people being involved and assisted in the direct surroundings.

Yet, such innovative financial mechanisms come with some complexity and uncertainty. The negotiation, signing and monitoring of numerous agreements and contracts involve transaction costs for the scheme and the stakeholders involved. As a result, legal and State backing has to be ensured, local actors' capacity has to be built and their active participation need to be further fostered. Importantly, the current and future viability of the carbon voluntary market is critical to deliver conservation and development in the and around the Gola rainforest. Indeed the long term success of this IFM lies with verified credit units being sold. Innovation at the local level also needs behaviour change at the broader level.

## 2.6. References


Belvaux, E., 2012. Final Evaluation Report - "Conservation of the Gola Rain Forest" Sierra Leone, Report to the Fonds Français pour l'Environnement Mondial, Gret, Paris.

Bulte, E., Kontoleon, A., List, J., Mokuwa, E., Richards, P., Turley, T., Voors, M. 2013. REDD+ socio-economic descriptive analysis Sierra Leone. Cambridge-Wageningen social science group.

Forestry Division, 2009. Gola Forest Reserves – the proposed Gola Forest National Park. Management Plan 2007-2012. The Royal Society for the Protection of Birds, Sandy, UK. Conservation Society of Sierra Leone, Freetown, Sierra Leone. Forestry Division, Ministry of Agriculture, Forestry and Food Security, Freetown, Sierra Leone.

Hipkiss, A., Tubbs, N., 2012. Innovative Financing for sustainable conservation of the Gola Rainforest, Sierra Leone, NAPA-News from African Protected Areas 56, 6-8.

Lindsell, J.A., Klop, E., Siaka, A.M., 2011. The impact of civil war on forest wildlife in West Africa: mammals in Gola Forest, Sierra Leone, Oryx 45(1), 69–77.

Myers, N., Mittermeier, R.A, Mittermeier, C.G., da Fonseca, G.A.B., Kent, J., 2000. Biodiversity hotspots for conservation priorities. Nature 403, 853-858.

RSPB, 2013. The Gola REDD Project. Project description following the Climate, Community and Biodiversity Alliance Standards (Second addition). Draft V1 December 2013. Royal Society for the Protection of Birds.

Tubbs, N., Barnard, J., Kamara, S., Bangura, W., Garbo, M., 2015. Sierra Leone's Gola Rainforest National Park REDD project improving livelihoods of 122 Forest Edge Communities. Paper presented at the XIV$^{th}$ World Forestry Congress, Durban, South Africa, 7-11 September 2015.

Wilebore, B., Voors, M., Bulte, E., Coomes, D., Kontoleon, A., 2015. Unconditional Transfers and Tropical Deforestation. Experimental evidence from Sierra Leone. Paper presented at CSAE Conference 2015: Economic Development in Africa, University of Oxford.

# 3. Innovating in public and private combination for conservation: South Africa's Biodiversity Stewardship and Fiscal Benefits approach[34]

## 3.1. Preparing for the innovation: case study context

### 3.1.1. Dealing with a strong demography, the need for development, and the need to maintain an outstanding natural capital

South Africa is more than 1.2 million km² in area, makings it a large country among other large African countries such as Chad, Niger, Angola and Mali; it is twice the surface area of France and nearly five times that of the UK. With approx. 54 million inhabitants, its population density is moderate (approx. 45 inhabitants per km², equivalent to the population density in e.g. Madagascar, Colombia and slightly more than in the USA). However, half of its current population lives on less than USD 2 per day, and its demographic growth is more than 2 % per year, to be compared to usual population growth rates in OECD countries, 5 or 10 times less with rates from 2 to 5 ‰.

A vast 86 % of the land in South Africa is devoted to agriculture, mainly for breeding (crops amount to 13% of agricultural land), thus mostly to grasslands or savannahs (South African Ministry of Environment & Tourism 2005). RSA's biodiversity conservation therefore depends extensively on preserving varied land uses, including natural forests and grassland, outside of the public protected area estate.

As many analyses have pointed out for the whole Planet (Nelson et al., 2010; Secretariat of the Convention on Biological Diversity, 2014), land-use and land-use management are paramount for the conservation of South Africa's natural resources and biodiversity conservation, in a context where both the need of, and the pressure on, natural resources will inevitably increase. The "South African Important Bird and Biodiversity Areas (IBA) Status Report" also notes this as a key objective to biodiversity conservation and highlights the mismanagement of land as one of the top two threats to birds and biodiversity at a national scale (Marnewick et al. 2015).

Indeed, pressure to convert grasslands and other open environments to crops, mining and infrastructures is observed everywhere in RSA.

### 3.1.2. Privately owned property is key to reaching conservation objectives in South Africa

Enrolling privately owned properties in land-use management and conservation has been identified by South African authorities as a key condition to reaching the country's conservation objectives with respect to biodiversity and natural resources. As of 2014, 36 % of terrestrial protected areas in

[34] Authors would like to warmly thank Candice Stevens and Daniel Marnewick, from Birdlife South Africa, for their active support in patiently explaining their projects, preparing and organizing the field trip to South Africa as well as for their very useful comments on this chapter. All people interviewed in South Africa (environmental NGOs, South African administration, farmers, businesses, etc.) are also to be warmly thanked for their support and time.

South Africa are "nature reserves" (which can be State owned and managed, or privately owned and contractually managed for conservation) or "protected environments" (which are only privately owned and contractually managed) (see Table 1 below).

Meeting the country's national protected area expansion targets (as per Republic of South Africa (2010)) would mean increasing the surface area of terrestrial protected areas by 10.8 million ha (2010 as a baseline) by 2030, i.e. 2.7 million ha every five years. Current expansion of protected areas is only a rough 15 % of this objective, with 416,000 ha added from 2010 to 2015. However modest compared to the national objectives, this expansion is now primarily based on privately protected areas and other conservation areas, which accounts for 72 % of this past annual mean increase (60,000 ha every year out of 83,000 ha).

**Protected and Conservation Area Types in S.A.**

Date: 20-06-2016

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

| No. | Type of Protected/Conservation Area | Number of Sites | Total Area in Ha. |
|---|---|---|---|
| 1. | Biosphere Reserve | 8 | 8 348 171 |
| 2. | Botanical Garden | 6 | 7 020 |
| 3. | Forest Nature Reserve | 51 | 172 511 |
| 4. | Forest Wilderness Area | 12 | 274 489 |
| 5. | Marine Protected Area | 25 | 18 595 360 |
| 6. | Mountain Catchment Area | 16 | 624 566 |
| 7. | National Park | 21 | 3 975 509 |
| 8. | Nature Reserve | 1305 | 3 653 073 |
| 9. | Protected Environment | 22 | 558 474 |
| 10. | Ramsar Site | 23 | 569 149 |
| 11. | Special Nature Reserve | 2 | 33 603 |
| 12. | World Heritage Site | 31 | 2 487 882 |
| | Totals | 1522 | 39 299 806 |

**Table 1. Types and area of protected and conservation areas in R.S.A. as of 2014 (indicated date 2016 refers to the day of access to the information)**

*Source: Department of Environmental Affairs, Republic of South Africa*

## 3.2. Innovation at work: a combination of private and public conservation, with help from fiscal benefits

### 3.2.1. South African regulatory framework provides for a combination of private and public conservation

In the early years of this millennium, the importance of private land with respect to conservation objectives in South Africa led conservation NGOs to try and renew their approach to farmers. South African conservation NGOs were reflecting over approaches to better incentivise private landowners (mostly farmers) to set aside their land, mostly grassland (Box 1). South African

authorities engaged in re-drafting the country's biodiversity and environmental management legislation. This gave birth to the National Biodiversity Act and the National Protected Areas Act, issued in 2004, and which brought the possibility for privately owned land to be officially and perennially acknowledged and registered as protected areas.

These two Acts provide for an original combination of state regulatory systems and voluntary conservation within a common but hierarchized biodiversity framework, while ensuring the consistency of the general conservation approach through national and regional planning, for which it provides for the necessary technical and regulatory institutions. The role of NGOs in this framework is not specified, although their action is key to the actual functioning of the mechanism, as it will appear below. Additionally, the mechanism as per the two major Acts does not yet incentivise voluntary conservation. Incentives have been subsequently developed as a complementary element.

**Box 1. Biodiversity Stewardship mechanism as a change in the NGOs' mindsets**

"Biodiversity stewardship as a concept started to be thought about in South Africa in about 2000. At that stage, a lot of NGOs were dealing with private landowners, mainly farmers and farming communities that had important biodiversity on their properties, and most of the mechanisms that non-governmental organisations were using were quite 'soft' approaches, they were things like 'it's the right thing to do'. So there was very little in the way of incentivising people to 'do the right thing'. (…) At that stage there was quite a lot of bumping heads, it was 'NGOs are stopping agricultural development, stopping grasslands being ploughed'. There was quite an animosity between agriculture and NGOs. The first development of what is now called the Biodiversity Stewardship Programme, around 2001, was actually called the Conservation Incentives Programme, and it was about 'let us develop incentives for people to put their land aside for conservation'. (…) We were working to give people recognition for what they were doing, to elevate them as examples of people doing the right thing. But that gets to 2 to 3% of people; the other 97 % of people want money in the bank". [ITV #1 (NGO)].

From 2003 on, with initial support from the GEF, this policy organisation gave rise to a "biodiversity stewardship" (BDS) approach, whereby everyone in the country is potentially called to steward the natural assets that sit on their properties, in view of collectively forming a network and a framework of conservation through varied individual contributions: "Biodiversity stewardship is an approach to securing land in biodiversity priority areas through entering into agreements with private and communal landowners, led by conservation authorities" (Cumming et al., 2015). Different types of BDS agreements are possible, ranging from non-binding biodiversity conservation agreements to legislated declarations to maintain and manage land parcels according to a protection management plan (Figure 1). The two most requiring and higher levels, *Nature Reserves* and *Protected Environments*, are actual protected areas on privately owned land, and formally declared as such by the Ministry of Environmental Affairs or the provincial Member of Executive Council for Environmental Affairs (Cumming et al., 2015).


| TYPE OF AGREEMENT | LEGAL MECHANISM | |
|---|---|---|
| Nature Reserve* | National Environmental Management: Protected Areas Act (Act 57 of 2003) | • Suitable for sites with highest biodiversity importance<br>• Binding on property: declaration of Nature Reserve, and a title deed restriction<br>• Binding on landowner: contract with landowner usually for 30 – 99 years/in perpetuity<br>• Is considered to be part of South Africa's protected area estate, and contributes to meeting protected area targets |
| Protected Environment | National Environmental Management: Protected Areas Act (Act 57 of 2003) | • Suitable for declaration over multiple properties<br>• Less restrictive land use than Nature Reserve<br>• Binding on property: declaration of Nature Reserve, and a title deed restriction<br>• Binding on landowner: contract with landowner usually for 30 – 99 years/in perpetuity<br>• Is considered to be part of South Africa's protected area estate, and contributes to meeting protected area targets |
| Biodiversity Management Agreement | National Environmental Management: Biodiversity Act (Act 10 of 2004) | • Less restrictive than protected area declaration<br>• Must have a Biodiversity Management Plan (in terms of Biodiversity Act) on all/part of the property<br>• Binding on landowner: contract with landowner for a minimum of 5 years or longer, in 5 year increments |
| Biodiversity Agreement | Contract law | • Less restrictive than protected area declaration<br>• Binding on landowner: contract with landowner for a minimum of 5 years or longer |
| Biodiversity Partnership Area | Informal agreement | • Non-binding partnership, may include a Memorandum of Understanding |

* Or National Park

**Figure 1. Hierarchy of biodiversity stewardship agreement.**

*Source: Cumming et al., 2015*

Sites declared as Protected Areas using the BDS tool differ from traditional state-owned national parks. The latter are protected with fences, target wildlife, scenery and tourism, with no land and resource exploitation. Whereas, BDS sites are most often used for all kinds of economic activities from agriculture to tourism when compatible with conservation, such as cattle ranching, dairy, citrus or timber, within sustainability limits. Conservation targets are therefore very different and rather complementary.

### 3.2.2. To signal the importance of conservation, South African National Treasury, governmental representatives and NGOs co-operated and created a fiscal abatement regime for landowners

Due to the economic and social nature of South Africa as a developing nation, South African environmental NGOs and government representatives from environmental agencies did not consider advocating for payment mechanisms where farmers or other businesses would be paid for refraining from development or production activities, as they saw was happening in the EU and USA. Rather, their approach was to incentivise conservation by reducing the burden of taxes, as it is done for other types of environmental expenses (such as energy efficiency expenses in houses). It has now been shown that, even if fiscal benefits do not constitute the main motivation for a landowner to enrol in a local BDS programme, such benefits are however important in sustaining their motivation and support in the long run (Selinske et al., 2015).

As a result, from 2004 onwards, attention was given to building into legislation the ability to pay lower taxes to induce a fiscal reward for landowners who committed their land to the conservation and management standards required under Protected Area BDS agreements, as made possible through the Biodiversity and Protected Area Acts. A conservation specialist was, therefore, appointed as the Biodiversity Stewardship Policy adviser by the South African National

Biodiversity Institute (SANBI), and engaged negotiations with the National Treasury (Treasury)[35] to provide for inclusion of biodiversity conservation sections in the Income Tax Act. These negotiations yielded a proposal from Treasury to the Minister of Finance, to integrate such clauses in the income tax legislation. This was accepted in two successive amendments gazetted in 2008 and 2009.

However, at that stage the tax incentives were not worded in a sufficiently practical way to allow landowners to take full advantage and provide them with a genuine and tangible benefit. The original incentives encountered a number of problems including: differing interpretations; insufficient interaction with agricultural incentives; and cumbersome administration and appropriation. Nevertheless, this brought government representatives and NGOs to renew their efforts and their approach to effecting adequate tax incentives for biodiversity conservation. In 2014, BirdLife South Africa appointed an environmental tax specialist with legal and tax management expertise and experience in the corporate sector, to take up the negotiation from where it had been brought to by SANBI and, in close cooperation with the latter, in order to re-word and amend the tax provisions. The aim of these amendments was to rejuvenate them by ensuring that the new wording was straightforward as well as practical. Treasury accepted the proposed amendments and gazetted them in January 2015, becoming effective from 1 March 2015. The present provisions are said to be worded in a far more efficient and effective manner allowing for a more direct and practical application of the incentive, thus reducing the room for interpretation. These are currently being tested at BDS pilot sites under BirdLife South Africa's Biodiversity Stewardship Fiscal Benefits Project to determine their full use and applicability.

### 3.2.3. The South African combination of public and private action: schematic description of the Biodiversity Stewardship and tax incentives

In a nutshell, the process by which land is integrated into the Protected Areas Network or broader conservation areas estate through Biodiversity stewardship agreements and is potentially granted a tax incentive, develops as follows, as illustrated in Figure 3:

- Based on a national strategy and the definition of biodiversity priority areas determined by advanced systematic conservation planning (SCP), NGOs and provincial conservation agencies act as "facilitators" or "stewardship extension officers". They reach out to landowners whose land is considered important for conservation, or alternatively answer to solicitations from landowners who are interested in having their land recognised as part of the country's conservation network and whose land falls within the biodiversity priorities areas nationally or provincially;

- After a technical site assessment and independent review process that determines the contribution of the site to environmental priorities, a protection status is proposed for the site by the provincial conservation authorities, and a specific management plan is drafted, with support from NGOs. This management plan defines the level of protection that is to be undertaken by the landowners. Most often, "action" is based on maintaining the current state of the land by refraining from intensification in current forestry or agricultural practice, aiming at conserving the grasslands and natural forests in the condition that founded the reason why some land parcels were targeted for enrolment in the BDS project. For instance, in grasslands where the Blue Swallow (*Hirundo atrocaerulea*, a bird species classified globally vulnerable and Critically Endangered in South Africa) has been spotted by experts from Birdlife South Africa, the management plan defines how to maintain its presence by conserving a minimal but well defined driving of a cattle herd in the grasslands where the swallow nests in holes in the ground

[35] Treasury is responsible for defining the tax legislation; tax collection is the remit of South African Revenue Service (SARS), a different although complementary public body.

(favoured by extensive cattle driving). In other instances, proactive measures are required by the landowner to restore ecosystem functionality and integrity such as clearing alien invasive species or restoring wetlands and water courses;

- This culminates in the formal declaration of the selected site as a Protected Area as defined in the Protected Areas Act as per the status assigned to it through the site assessment process. It entails the official signature, by the official representative of the Province, of a preliminary agreement (between the Provincial authority and the landowner), which is then submitted for official public consultation, after which the agreement is gazetted by the federal government and the management plan is officially approved and gazetted by the Province;

- A surveyor general must then precisely delineate the land parcels and the surface area that are covered in the agreement, and the resulting mapping and Protected Area declaration and agreement are then sent to the governmental deeds office, after which the agreement is perennially attached to the land parcels through a notarial agreement;

- On this basis, landowners are then allowed to apply for a tax reduction in their annual tax declaration;

- The relevant provincial conservation authority is then responsible for annual monitoring and an audit of the management plan implementation. This may be undertaken by delegated NGOs where provincial conservation agencies lack capacity to undertake this. However, the mandate to facilitate this lies with the Province.

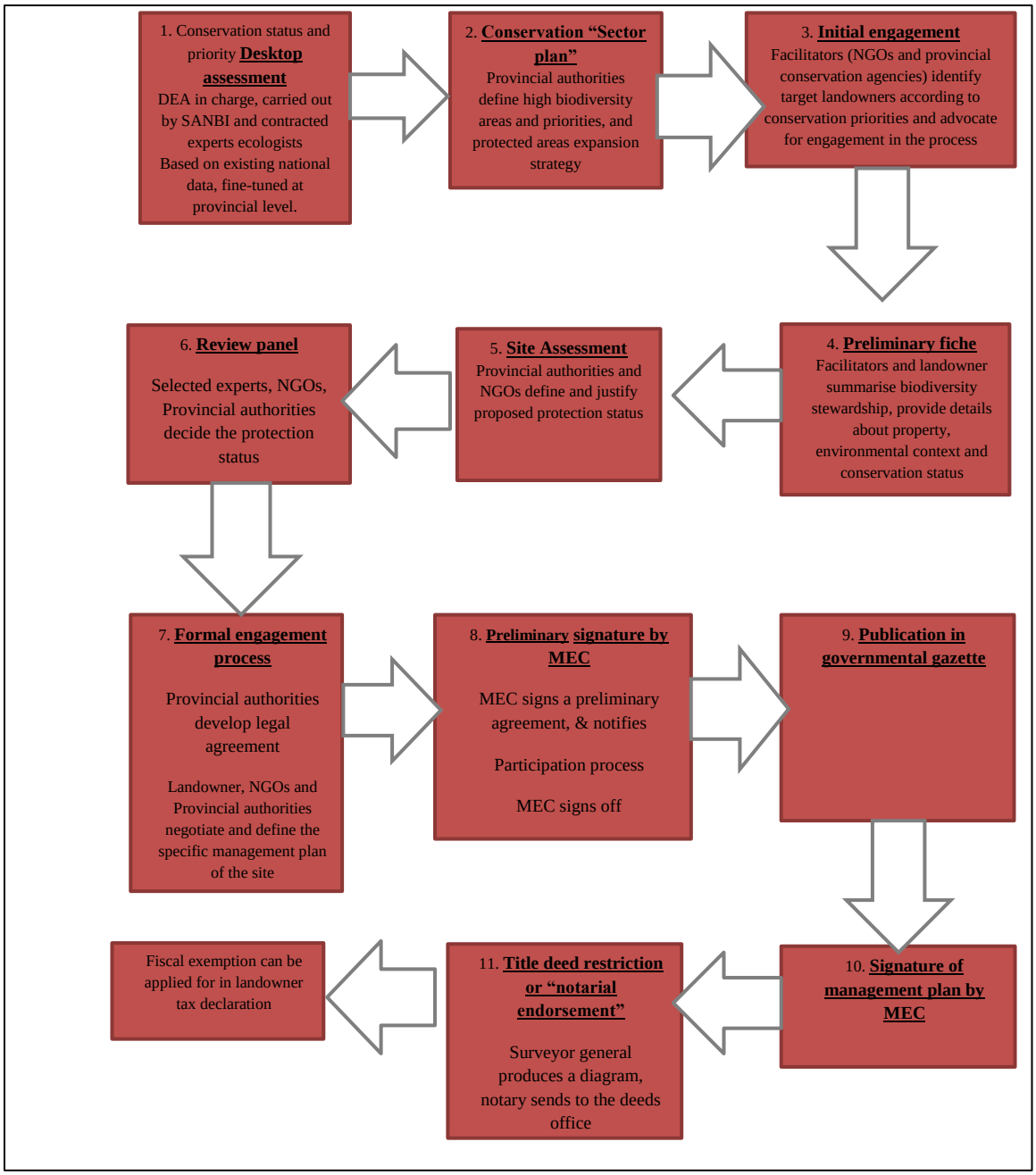


**Figure 2. Biodiversity Stewardship and fiscal incentives process diagram**

*Source: Authors*

### 3.2.4. A new distribution of roles

Eventually, this new biodiversity stewardship and tax abatement approach has modified relationships between conservation actors, public bodies and private landowners, and has generated a number of agreements and instances of collaboration. This new governance is illustrated in Figure 4.

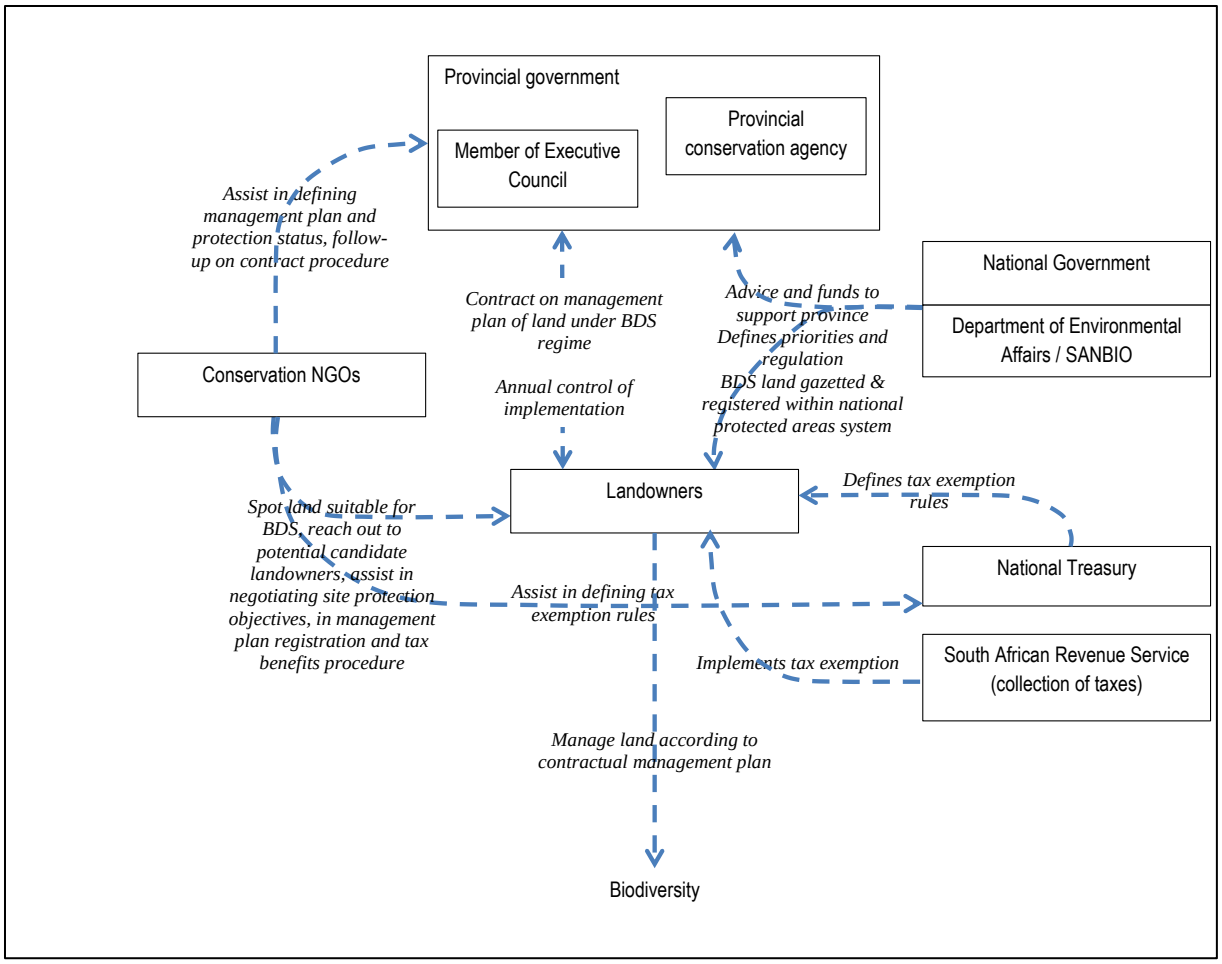


**Figure 3. Governance diagram of the Biodiversity Stewardship and tax benefit mechanisms**

*Source: Authors*

## 3.3. Innovation at scale: a promising potential

### 3.3.1. Is the BDS tool "at scale"?

In total, the BDS approach has been successful in terms of recent growth of protected area surface. Most new protected areas in the country have been secured through the biodiversity stewardship approach using long term agreements between landowners and provincial authorities. In 2014, 70 different protected areas were declared and integrated in the national protected area register. This amounts to over 400,000 ha, i.e. 1 % of the total terrestrial protected areas, but 10 % of current "nature reserves". In March 2015, 153 sites, totalling over 560,000 ha, were in negotiation for protected area declaration (Cumming et al., 2015), thus potentially doubling these proportions. This illustrates how this approach is important and could potentially represent a vital component of the future progress in RSA's protection policy. Overall, protected areas under BDS contribute to Provincial protection objectives (in terms of surface area under protection regime) in various proportions, from 9 to 32 % (Table 2).

Besides, Cumming et al. (2015) have also assessed that "establishing a protected area through BDS is between 70 and 400 times less costly to the state than land acquisition", and support to protected area management has been calculated as 4 to 17 times less costly (per hectare) than managing a state-owned protected area. Achieving 2028 national targets based on BDS would cost, for the nine South African provinces, some ZAR 80 million (5.25 million Euros), that is roughly ZAR 6.15 million per year (about 400,000 Euros). This is to be compared to the annual

governmental spending for biodiversity conservation-related matters of ZAR 1.9 million annually, to which Provinces add ZAR 1.3 million, thus totalling ZAR 3.2 million annually (210,000 Euros) (OECD 2013). Therefore one can deduce that reaching the protected areas target with BDS would represent a budget more than twice the current country's annual spending for conservation. However, achieving these targets through traditional state owned acquisition and management would be considerably higher. On the one hand this is far from the objective; on the other hand the amounts involved are not that important in absolute terms.

| Province | Addition still required in 2008 to meet the 20-year (2028) provincial protected area target (ha) | Contract protected areas declared and in negotiation through biodiversity stewardship (ha) | % contribution of contract protected areas declared and in negotiation to 20-year (2028) provincial protected area target | Hectares acquired in the same time by the provincial conservation authority through any mechanism other than biodiversity stewardship |
|---|---|---|---|---|
| EC | 1 570 000 | 234 074 | 15 | 0 |
| KZN | 842 000 | 268 668 | 32 | 1165* |
| MP | 632 000 | 129 325 | 20 | 0 |
| WC | 1 004 000 | 87 447 | 9 | 100 026* |

**Table 2 BDS contribution to provincial protected area targets.**

*Source: Cumming et al., 2015*

### 3.3.2. Is the new fiscal incentive "at scale"?

The latest South African protected areas tax incentives as amended in 2015, in its actual design, is designed to allow landowners to deduct the costs of nature reserves declared voluntarily through a BDS agreement from their revenue basis. More specifically, it is allowed to calculate the value of the land surface that has been set aside from normal farming for conservation, and to subtract annually up to 4 % of this total value from the revenue tax basis (hence the total value of the land has been deducted after 25 years). Since the value of the land is then considered as a specific investment, it is therefore a kind of "amortisation" of the capital devoted to conservation. In order to limit the potential effect of this measure on the national fiscal resources, the South African Treasury has however maintained the benefit at a low rate, compared to normal farming revenues.

As of today however, the tax incentives system relating to the new latest legislative changes has not been actually applied. Firstly, the reform of the legislative drafting, which simplification now enables it to be applied, is rather recent (March 2015). Secondly, the whole administrative and legislative process relating to the associated BDS agreement has to be fully completed, down to the "gazetting" of the agreement between the landowner and the State, to then be eligible to tax rebates (Figure 3). No landowner has yet come to this stage since the adoption of the new fiscal provisions. Birdlife South Africa is assisting a series of various types of landowners in engaging in the tax exemption procedure. It is therefore too early to evaluate the contribution of the fiscal benefits to this success, the reform of the system being too recent.

## 3.4. Innovation at risk: challenges and the way ahead

### 3.4.1. An uneven public involvement

At first Biodiversity Stewardship was developed mostly in the Western Cape Province, followed later by the KwaZulu-Natal Province, around 2006. And then over the following five years the other Provinces progressively joined the movement. Biodiversity Stewardship appeared and developed at the very moment when conservation budgets in Provinces started declining, with decreasing means to acquire land as well as a general decrease in ability from the conservation sector as a whole. However, it is not possible to know whether this decline was encouraged by the rising alternative brought by BDS, or whether BDS development was favoured due to this decline; nevertheless this uneven engagement is still reflected today in very unequal capacities devoted to the BDS approach by the different provinces. In the Western Cape, provincial authorities have a large staff contingent devoted to conservation and up to 24 dedicated to BDS alone. In many other provinces however, only one or two officers are more or less fully devoted to this task. Since local authorities are needed at key stages of the process, this then creates a heterogeneous development of conservation throughout the country (Table 3). It is noticeable that this unevenness is less due to the private and "opportunistic" nature of the approach than to the differences in local governments' involvement. In other words, whereas conservation in South Africa combines private initiative with public administration, the limits of the system comes from a patchy public involvement.

| | Full-time on biodiversity stewardship (e.g. programme manager, stewardship officer, admin assistant) | Portion of time on biodiversity stewardship (e.g. programme manager, stewardship officer, admin assistant) | Scientific support (e.g. ecologist or botanist) | Legal support | Total number of people (full-time or portion of time) | Total full-time equivalents** |
|---|---|---|---|---|---|---|
| Eastern Cape | 1 | 0 | 2 (5% each) | 0 | 3 | 1.1 |
| Free State | 0 | 2 (5% each) | 0 | 0 | 2 | 1.1 |
| Gauteng | 4 | 1 (30%) | 0 | 0 | 5 | 1.3 |
| KwaZulu-Natal | 5 | 5 (5% each) | 3 (10%, 5%, <5%) | 1 (<1%) | 14 | 5.7 |
| Limpopo | 2 | 1 (50%) | 0 | 0 | 3 | 2.5 |
| Mpumalanga | 3 | 0 | 1 (5%) | 0 | 4 | 3.1 |
| North West | 2 | 0 | 1 (5%) | 1 (10%) | 4 | 2.2 |
| Northern Cape | 3 | 0 | 2 (5% each) | 1 (5%) | 6 | 3.2 |
| Western Cape | 6 | 14 (5% - 80%) | 3 (5% each) | 1 (100%) | 24 | 9.2 |
| **Total provincial** | **25** | **23 (5% - 80%)** | **12 (<5% – 10%)** | **3 (<1% to 100%)** | **73** | **28.4** |
| DEA | 0 | 2 (75% and 25%) | 0 | 0 | 2 | 1 |
| SANBI | 0 | 1 (50%) | 0 | 0 | 1 | 0.5 |
| **Total national and provincial** | **25** | **26 (5% - 80%)** | **12 (<5% – 10%)** | **3 (<1% to 100%)** | **76** | **29.9** |

*This does not include NGO staff supporting the provincial programmes
** Rounded to nearest tenth

**Table 3 Staff resources devoted to BDS programmes in provincial and national authorities.**

*Source: Cumming et al., 2015*

### 3.4.2. Handling innovative transactions with a fiscal revenue service: a (universal) risk…

One difficulty of tax incentives is the typical reluctance that taxpayers may feel when they risk attracting the Revenue service's attention with an unusual request. They are vulnerable to long procedures, tedious investigations and general fragility due to possibly varied interpretations of the law by different services of the tax administration.

### 3.4.3. Internal rather than external resistance

One of the most important difficulties which the conservation sector had to overcome was "internal" resistance from NGO conservationists, and, to a lesser extent, from some of the governmental environmental workforce. Some "traditional" conservation actors in both groups felt doubtful about relying on private stakeholders and mechanisms, and having to work without the alleged stability that public ownership and status confer to conservation in public reserves. They were wary of losing control over conservation, and sceptical about the ability of private reserves to actually provide a management authority, the performance of which would equal that of state-owned natural reserves. Resistance or opposition however mostly originated from individuals who supported a traditional framework for protected areas proclamation and management, in various positions in the system (NGOs as well as government), rather than from organised groups. Therefore the early stages of the process were devoted to internal negotiations within the group of "conservation people", in parallel with coming to terms "externally" with Treasury and the Department of Environmental Affairs. Although it was not possible to produce evidence about this, it might be said that the "conservation milieu" is made of a fairly limited number of people, considering the size of the country and of its natural resources[36]. In the case of South Africa and the Biodiversity Stewardship approach, this factor seems to have played positively, in that it allowed a relative stable and limited group of people to progressively convey their ideas, to argue and to bring evidence, and eventually to gain confidence over years.

### 3.4.4. The Achilles' heel of the mechanism: political acceptance

The main constraint the BDS mechanism has to face, and therefore the main hurdles for the fiscal benefits that are attached to it, is the need of high-level political support. As mentioned above, and necessarily so since the national fiscus is involved, a political decision has to be taken. And RSA's decentralised organisation places this responsibility on the Provincial Member of Executive Council (MEC[37]), who has to personally sign a preliminary and then a definitive agreement. Therefore, the Achilles' heel of the mechanism is in the final stage of the administrative process, between stages 7 and 9 in the process diagram (Figure 2) that entails 1/ an agreement being signed by the provincial government representative, and 2/ inscription of the agreement in the property registration. However, the MEC being the head of the Provincial authorities, his or her responsibilities are of all types of public matters, in a country with many development urgent issues such as poverty and jobs, justice and security, education, etc. Biodiversity conservation is naturally not a top priority in MECs' occupation. Moreover, signing off an agreement between the authorities and private landowners to allow for an extensive land use and a fiscal reward is a rather unusual approach, about which MECs are generally not very well informed. This often produces more than one-year delays in getting the signature on the documents.

The rather heated political life of South Africa, with frequent elections at all levels, results in frequent turnover of regional political and therefore administrative leaders. These leaders may have different mindsets with respect to conservation and economic priorities in the face of pressure from the mining and the agribusiness industries. This is obviously a major hurdle for biodiversity stewardship and fiscal benefits (Box 2).

On the one hand the conservation sector is a relatively compact and specialised milieu, which is effective in facilitating the process; on the other this is counterbalanced by the administrative and political part of the process, which imposes delays and repeatedly forces the facilitators to re-

[36] Across interviews, not more than half a dozen people are repeatedly mentioned as key actors of the process, from 2000 on.

[37] Provinces of South Africa are governed by provincial governments. The heads of provincial Departments of Environment are the MEC, who are legally entitled to sign off the final declaration of a new protected area. They are advised by their Department administration and the conservation authorities (e.g. Ezemvelo KZN Wildlife), but their actual signature is needed. This declaration legally creates the agreement between the landowner and the authorities, and therefore is a preliminary condition for the fiscal benefits to be processed and allowed.

launch the process, find energy to advance the files in the bureaucratic procedure and engage in new juridical and administrative justification. This is even more the case since conservation NGOs generally do not have access to high-level officials and policy-makers. They have to rely on mid-range officials. However high-level political support is a necessary condition to finalise the process and to effect the agreement, the long-term sustainability and the fiscal benefits.

NGOs consider that two things will make a difference, in the future. The first is addressing a number of organisational hurdles and challenges, and finding a way to rely less on government, or find better measure to support government's limited capacity, for the advancement of the processes. The second is, for where government support will still be unavoidable, finding more support from high-level representatives or processes. Research is now under way to determine the barriers and potential solutions to NGOs answering these questions.

**Box 2. How NGOs see the main hurdle in the process: getting the Member of Executive Council to "sign off" the agreement, an indispensable condition for the biodiversity stewardship process to develop**

"The landowner and the MEC are so far removed from each other; they are not going to meet or whatsoever. So that was the challenge. (…) The conservation sector is kind of facilitating this process and has to get the landowner and the MEC to agree to this declaration. A little bit cumbersome. So it is not exactly a challenge, because you can't do it any other way, it's the reality of our system that is cumbersome. A lot of people have struggled to deal with that cumbersome system, where people would rather go "ah, I can't get the MEC to sign off", rather than go and do the hard work to get the MEC to sign it. And it's hard, because the MECs do not always understand their own legislation, and they are very wary of signing the agreement: are they getting to trouble for signing it? That's the reality of the political system, if you put your head up and you're not doing the right thing you're suddenly no longer an MEC" [ITV #1 (NGO)].

"For instance, now in [Province N°x], there is a new MEC. So you can do a lot of work in engaging with the MEC who in the end understands [biodiversity] stewardship, and he gets to a point where he is supportive and he signs off on the various sites. And then you get a new MEC that does not understand and for who it is not a priority and you have to start from scratch. (…) And quite often there is this perception, in political circles, that it is, you know, rich white landowners trying to make money through tax; although the tax incentives can obviously benefit communal land, there are a lot of communal sites that are in [biodiversity] stewardship as well, and a lot of funding has been leveraged to support those communities" [ITV #2 (NGO)].

## 3.5. Conclusion

### 3.5.1. Opportunistic versus strategically defined conservation?

One potential drawback of private- and voluntary-based conservation is of course its piecemeal nature, since reserves are defined according to individual motivations from landowners.

However this drawback seems to be limited in this case. First, it is well-known that important State reserves themselves have always been set up based on opportunities (hunting reserves in many African cases, for instance). Second, national and provincial planning provide for a general consistency framework that allows for prioritising the enrolling of landowners. However RSA is characterised by a very vast array of different ecosystem types and landscapes. Therefore, in the mind of many conservationists, the strategic complementarity of land to be conserved is less a matter of location than of types of management. This leads them to actually take in the opportunities that voluntarily and rather randomly appear, and then count on the variety of situations and management modes to allow for a proper representation of ecosystems and species

in the resulting distribution of protected areas. This approach is furthermore coupled with rigorous SCP tools that are already available in South Africa as well as the site assessment and independent review process.

### 3.5.2. A mechanism potentially up to the scale

The heightening number of payments for conservation, incitation and market-based instruments has sometimes been questioned for the ability of these mechanisms to match the large-scale action that is needed to face and compensate biodiversity erosion (Pirard, Billé, and Sembrès 2009). In the case of RSA's biodiversity stewardship and the corresponding tax incentive, the mechanism seems up to the task of large-scale action for nature protection. Private and communal lands are indeed crucial to achieve the country's conservation objectives, in a context where protection from agronomical intensification, mining as well as infrastructure development is a pressing matter. As documented here, the potential for voluntary reserves is significant and far from being exhausted. Granted, the growth rate of secured land by way of voluntary conservation is far too small to match the country's target, and it is too early to assess the effectiveness of the tax incentive mechanism. However, this relative slowness doesn't seem to be attributable to the mechanism itself, but rather to an insufficient political involvement of some provincial leaders. This inadequate involvement does not appear to be caused by inconvenience that would derive from generalising the mechanism and that would preclude local political support. The tax incentive has been set at rather low rates, so that the expected expansion of its scale should not alter the national fiscus. It rather seems to result from a limited consideration for biodiversity and nature protection as a priority.

## 3.6. References


Cumming, T., Driver, A., Pillay, P., Martindale, G., Purnell, K., McCann, K., Maree, K. 2015. The Business Case for Biodiversity Stewardship. South African National Biodiversity Institute, Pretoria, South Africa.

Marnewick, D., Retief, E., Wright, D., Theron, N. 2015. South Africa's Important Bird and Biodiversity Areas Status Report 2015. Birdlife South Africa, Johannesburg, South Africa. http://www.birdlife.org.za/images/IBA/Documents/IBA%20Status%20Report%20low%20res.pdf.

Nelson, E., Sander, H., Hawthorne, P., Conte, M., Ennaanay, D., Wolny, S., Manson, S., Polasky, S., 2010. Projecting Global Land-Use Change and Its Effect on Ecosystem Service Provision and Biodiversity with Simple Models. PLoS One 5 (12), e14327.

OECD, 2013."OECD Environmental Performance Review - South Africa. OECD Publishing, Paris, France.

Pirard, R., Billé, R., Sembrès, T., 2009. Payment for Ecosystem Services : Responding to Challenges of Large-Scale Implementation. Working Papers. IDDRI, Paris.

Republic of South Africa. 2010. National Protected Area Expansion Strategy for South Africa 2008. Government of South Africa, Pretoria, South Africa.

Secretariat of the Convention on Biological Diversity and United Nations Environment Programme (eds.) 2014. Global Biodiversity Outlook 4: A Mid-Term Assessment of Progress towards the Implementation of the Strategic Plan for Biodiversity 2011-2020. Secretariat for the Convention on Biological Diversity, Montreal, Quebec, Canada.

Selinske, M.J., Coetzee, J., Purnell, K., Knight, A.T., 2015. Understanding the Motivations, Satisfaction, and Retention of Landowners in Private Land Conservation Programs: Landowner Commitment to Conservation. Conservation Letters 8 (4), 282–89.

South African Ministry of Environment & Tourism. 2005. South Africa's National Biodiversity Strategy and Action Plan. CBD NBSAP Report. Republic of South Africa, Pretoria, South Africa.

# 4. Innovatively securing finance and ecological results: an environmental trust fund for protected areas in Côte d'Ivoire[38]

## 4.1. Preparing for the innovation: case study context

### 4.1.1. National Level

A large country of 322,462 km$^2$, Côte d'Ivoire is host to almost 23 million inhabitants (in 2015, World Bank data). Although a lower middle income country (3,270 USD GDP PPP per capita, 2014, constant 2011 international USD) and a growth rate reaching 8.4% in 2015, most of the population remains vulnerable in particular in rural areas. In 2015, 46.3% inhabitants were considered poor (at national poverty lines) while this proportion was up to 56.8% in rural areas[39]. Political instability and recent civil wars, the last one in 2010-2011, partly explains this and has so far affected the country's governance and institutional capacity.

Environmentally, the country contains an important part of the "Guinean Forests of West Africa" Hotspot[40], which is known for its numerous endemic and threatened species. With 14 key biodiversity areas identified so far and 6 Ramsar sites, Côte d'Ivoire has one of the highest level of biodiversity in West Africa, with over 1,200 animal species (232 mammals, 702 birds, 125 reptiles, 38 amphibians, 111 fish) and 4,700 plant species, out of which 62 are endemic to the country and 470 to West Africa (République de Côte d'Ivoire, 2016).

The country's economy is largely dependent on agriculture for its growth and poverty alleviation objectives. Agricultural land represents almost 65% of the total surface area (2013), up from 50% fifty years earlier (World Bank Data)[41], 22% of GDP (World Bank Data) and 68% of labour force (CIA Fact Book, Estimate 2007). 10.2% and 38.5% (2013) of all goods exported are respectively agricultural raw materials exports and food exports[42]. Although making a limited and decreasing contribution to GDP (1% for logs and 1% for fuelwood), the wood sector further directly and indirectly employs 50,000 people in total whereas fuelwood activities might support 350,000 inhabitants.

Forest area was massively lost in Côte d'Ivoire. From 16 million hectares of forest in 1960, less than 4 million hectares are estimated to remain today, hence less than 13% of the country's surface[43]. Deforestation in Côte d'Ivoire was the most rapid worldwide since the mid 1950's. Strikingly, the deforestation rate was 2.4% between 1956 and 1965, and 7.3% between 1981 and 1985 (10 times the annual world average of 0.6%). It is still today estimated at 4%.

High demographic growth (around 2.5% annually since 2013), immigration (24% of population is not Ivoirian), mining (gold), unsustainable forest extraction for fuelwood and logs, as well as rapid agricultural development constitute major threats to forests and biodiversity in the country. In this

[38] Authors would like to sincerely thank Dr Fanny N'Golo (FPRCI) and Abdoulaye Diarrassouba (OIPR) for their active support in organizing the field trip to Côte d'Ivoire and the Taï National Park in particular. Authors also thank Paul Belchi (AFD) for his very useful comments on this chapter. All people interviewed and informally met in Abidjan and Soubré are also to be warmly thanked for their support and time.
[39] The Poverty headcount of people living below 1.90 US$ a day (PPP) was estimated at 29%.
[40] 1 out of the 35 hotspots worldwide defined and promoted by the NGO Conservation International (Myers et al., 2000).
[41] Agricultural land increased from 158,800 km² in 1963 to 206,000 km² in 2013, a 30% increase in surface.
[42] The share of Agriculture in exports and GDP nevertheless tends to decrease over the years.
[43] See the EUREDD Facility website for Côte d'Ivoire : http://www.euredd.efi.int/cotedivoire

regard, cocoa is the major threat to forests. With 1.8 million tons produced in 2015, agricultural land set aside for this commodity currently covers 2.5 million hectares (World Bank data 2014) and is significantly increasing (33% in 10 years since 2002). Importantly, it supports 800,000 agricultural households, among which those with less than 5 hectares of land produce more than 80% of the country's cocoa output.

Forest conservation in Côte d'Ivoire is currently mainly based on a network of 233 *forêts classées* (reserved for roundwood extraction), as well as 8 protected areas (PA) and 6 natural reserves (NR) over a total of 2.1 million hectares (6,5% of national territory). While some PAs seem to maintain a satisfactory forest cover and status of biodiversity, the *forêts classées* are largely degraded due to agricultural encroachment[44]. In this context, the country's 2016-2020 National biodiversity strategy and action plan (NBSAP) envisions the creation of new PAs (objective 8) and the strengthening of capacities and efficiency of the current network (objective 9) (République de Côte d'Ivoire, 2016) while the recent Intended nationally determined contribution (INDC) calls for capacity building in PAs and *forêts classées*. In both cases, funding is lacking and needs to be raised and leveraged.

### 4.1.2. Focusing on the Taï Area as an illustration

Successively registered as a *parc refuge* of 960,000 hectares in 1926, a *foret classée* in 1955 and then a 425,000 hectares' *réserve intégrale pour la faune et la flore*, the Taï national park (TNP) was finally gazetted in 1972 (Lauginie, 2007). Situated in the West of Côte d'Ivoire between the towns of Taï, Guiglo, Soubré and San Pedro, it now encompasses 536,017 hectares together with the N'zo fauna reserve[45]. Of global biodiversity importance, the TNP was declared a Biosphere reserve under the UNESCO's Man and the Biosphere Programme (MAB) in 1978 and a World Heritage Site (WHS) in 1981.

The park, still relatively intact, is one of the last remaining portions of the vast primary Upper Guinean rainforest. About 1,300 plant species were documented, 12% of which endemic, as well as 146 species of mammals. Besides forest elephants and buffalos, various duikers, as well as chimpanzees, the TNP is also host to 12 endemic species, e.g. the Jentink's and zebra duikers. Out of 746 bird species observed in Côte d'Ivoire, 234 are found in the park, including very rare ones (République de Côte d'Ivoire, 2015a).

The Taï wider area is nevertheless prone to significant human pressures. Areas closely surrounding the TNP (periphery) are indeed densely populated. It is estimated that approximately 1 million people inhabit the vicinity of the park in 81 villages within a 10 km radius, representing a peripheral zone of 408,277 hectares (Varlet and Kouamé, 2013). Besides artisanal gold mining, agriculture activities concern 55% of households in the peripheral zone[46]. Among this, cocoa is particularly important to the Taï region's economy around Soubré. In 2013-2014 the area was the first cocoa producing *département* with 14% of the total national production. Due to its favourable climatic conditions and two successive waves of immigration, 53% the Tai area (10 km radius around the TNP) is nowadays covered with cocoa plantations, producing 94,000 tons and supporting 33,800 farmers (396,000 people with their dependents) (Varlet and Kouamé, 2013).

[44] According to SODEFOR (Société de développement des forêts de Côte d'Ivoire), almost half of the 2.5 million hectares of *forêts classées* in the South are actually cropped or under fallow.
[45] The TNP and N'zo fauna reserve are contiguous (the latter is located north of TNP), so that the park management team prefers to consider both areas as one single, the TNP.
[46] Agricultural surfaces average a significant 9,7 ha per household.

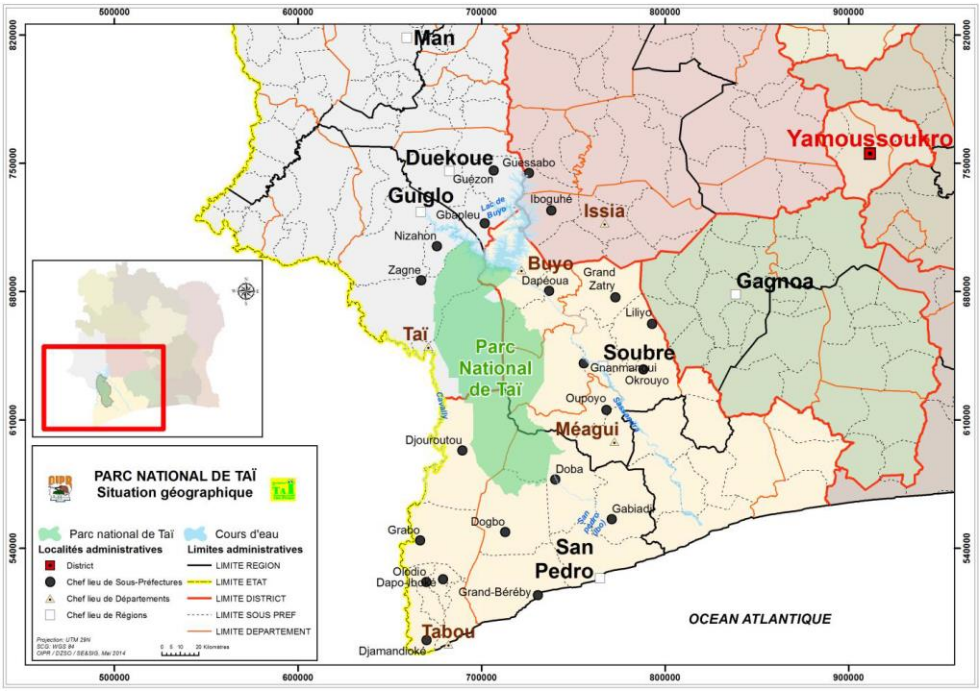


**Figure 1. Map of the TNP**

*Source: République de Côte d'Ivoire, 2015, p.10.*

*In fine*, such human pressures have resulted in massive deforestation around the TNP. It is estimated that between 2003 and 2011 in the peripheral area, primary forest cover decreased from 10,5% to 0,6% while surfaces of degraded forests shrank from 15,5% to 6,1% (Varlet et Kouamé, 2013). In this context, the integrity of the park's boundaries remains highly uncertain and is prone to rapid encroachment. Management capacity and funding therefore need to be both secured.

## 4.2. Innovation at work: funding efficient PA management through debt swaps

Three types of innovation are at work in biodiversity conservation in Côte d'Ivoire: first, setting a foundation as an independent vehicle for funding PAs; second, mobilizing finance through the foundation's capitalisation from debt swaps; and third, managing PAs efficiently through contractual agreements with an autonomous parastatal conservation body.

### 4.2.1. Financing the Ivorian PA network: an innovative change in paradigm

Until the mid-1990's, protected areas in Côte d'Ivoire were placed under the direct authority of different government ministries, successively the Ministry for water and forests, the Ministry of agriculture and finally the Ministry of environment, where the Directorate for nature protection (DNP) was to centrally oversee the strategic and operational management of all protected areas, *forêts classées*, and natural sites.

Yet, in 1992, a convention was organised together with the IUCN to conduct a diagnosis of the status and management of protected areas in the country. In 1995 thereafter, the government held a National Seminar in Abidjan where all concerned stakeholders (ministries, donor agencies, adjacent populations, etc.) were invited to share a common diagnosis. At this point, stakeholders agreed that the PA network, despite significant government investment and donor assistance, had not achieved the desired objectives and results. The key problem was attributed to the type of

financing (from the government budget), and its timing aspect (dates of disbursements), which was so far mobilised to fund PAs. On the one hand, funding was dependent on donor project money, which was time-bound, unpredictable, and mainly concentrated on one single PA only. On the other, fully dependent on government funding for its park operations, the DNP only received its annual financial contribution in March, at the soonest, while budget for the next year was voted in the November-December period. A financial gap resulted from this timing and highly affected surveillance operations during the dry season (October to February) where most poaching activities are usually undertaken. The PA network's conservation status was therefore significantly jeopardised.

To tackle such issues, it was thought that a mechanism to ensure a minimum, permanent and stable, flow of funding to cover PAs' operations was to be put in place, together with a set of better management structures. This led to the design of a Framework Programme for PA Management (*Programme Cadre de Gestion des Aires Protégées* – PCGAP), which was validated in Cabinet in March 1996. Among other key objectives, the strategy aimed at 1/setting up a new management body for PAs, a parastatal entity with administrative and financial autonomy, although with strong government backing ; 2/ setting up a foundation so as to fill the PA financial gap with additional resources ; and 3/ designing and implementing a development and management plan for each PA.

In 2002, the government of Côte d'Ivoire finally enacted Law n° 2002-102 in order to strengthen conservation policies in general, and parks and reserves in particular. First, the law required the *ad hoc* creation of a specific national public entity (an *établissement public national (EPN) de type particulier*) to manage the country's protected areas and reserves, carry out surveillance as well as patrol activities and eventually and lawfully arrest offenders. Contrary to the DNP, this entity is endowed with its own legal personality and financial autonomy. Besides, each PA would be decentrally managed at the area's level, following its specific development and management plan. Second, the law set foundations as official vehicles to sustainably financing PA operations through the generation of financial returns from their capital.

Subsequent decree n° 2002-359 hence formally established the Côte d'Ivoire Parks and Reserves Office (OIPR) (*Office Ivoirien des Parcs et Réserves*) in 2002 as the entity to manage Ivorian PAs. A management committee, consisting of 12 members from different ministries, foundations, NGOs and adjacent communities, shall oversee the Office's operations and its new Directorate General[47]. Although an autonomous entity, the Office remains under the administration's supervision (from the Ministry) and receives government subsidies for operation and investment costs while most of its employees are actually public servants paid by the government.

### 4.2.2. FPRCI-CI Structure

Also building on the 2002 law, the Foundation for the parks and reserves of Côte d'Ivoire (*Fondation des parcs et réserves de Côte d'Ivoire*) was created in Côte d'Ivoire (FPRCI-CI) in November 2003 as a private non-for-profit institution, the first Ivorian trust fund dedicated to funding the country's PA network. Its mission is to mobilise and manage funds through an Environmental Trust Fund (ETF, see Box 1) so as to ensure long-term sustainable financing of parks' operations, in addition to State's contribution. By 2020, it aims at financing over 90% of operational costs of all Ivorian parks and reserves.

[47] The Director General is proposed by the management committee and nominated, after validation, by the Ministry.

**Box 1. Environmental Trust Funds: definitions**

An environmental trust fund (ETF) is an independent legal entity and investment vehicle to help mobilizing, blending, and overseeing the collection and allocation of financial resources for environmental purposes. It is a country-driven solution that facilitates strategic focus, rigorous project management, solid monitoring and evaluation, and high levels of transparency and accountability.

An endowment fund refers to an ETF where capital is invested in perpetuity, and only the resulting investment income is used to finance grants and activities.

A sinking fund refers to an ETF where the entire principal and investment income is disbursed over a fairly long period (typically ten to 20 years) until it is completely spent and thus sinks to zero.

*Source : UNDP, 50 years Financing Solutions for Sustainable Development* *http://www.undp.org/content/sdfinance/en/home/solutions/environmental-trust-funds.html*

A first constituent general meeting was held in 2003, attended by the 10 founding members in order to define the foundation's statutes, mission, as well as the processes, rules and regulations. While a number of slight modifications were introduced in the foundation' statutes, rules and processes until 2009, the FPRCI is now governed by the following structures:

1/ the General Assembly of 10 volunteer members meets once a year. It validates the foundation's strategy, approves the budget and monitors directors;

2/ the Board of directors is composed of 9 volunteer voting members (including a Chair and a Vice-chair) as well as 2 observing (non-voting) members (PNUD and KfW representatives, for now), and meets 3 times a year. The Board defines the strategy, validates the work programme, validates rules and regulations and closely monitors how funds are managed and spent;

3/ the Executive directorate carries out daily activities, undertakes financial, technical and administrative management and oversees the asset manager's work and results;

4/ two committees provide the Board of directors with analysis and recommendations. First the Investment committee defines, reviews and proposes investment guidelines and instructions, as well as it monitor the asset manager's performance. In this, it is assisted by an international consultant[48]. Second, the Audit committee controls the foundation's annual accounts and its procedures.

The first Board of directors' meeting took place in 2004. It is now composed of well-renown, accepted, very skilful and influential persons from Côte d'Ivoire's civil society, including the private sector (big companies), NGOs, lawyers and academics, as well as of two government representatives[49]. All those high-profile members, co-opted by the Board of directors and validated by the General Assembly, ensure the credibility, efficiency and legitimacy of FPRCI in the country, but also abroad when liaising with conservation agencies as well as with international, multilateral or bilateral donor agencies.

FPRCI was eventually recognized to be of public utility in January 2009, and therefore exempted from taxation in Côte d'Ivoire for returns from its endowment's and sinking funds' assets.

[48] An international consultant works 2.5 days per month as a financial advisor for the foundation.
[49] As an important consequence, government representatives always remain in minority.

### 4.2.3. First FPRCI-CI activities

Earlier years of the 2000's were ones of political instability and uncertainty. The foundation was thus somehow dormant from 2002, yet its operational costs (salaries) were covered by the Government of Côte d'Ivoire which supported the initiative. In 2008, in order to mobilise funding and upscale operations for parks and reserves, FPRCI nevertheless organised, together with GIZ and OIPR, a donor's round table conference, where Germany, Austria, Switzerland, France and other donors were targeted. The conference first focused on the Taï national park (TNP) where German cooperation was for long involved. Several donors did then pledge to contribute to financing the country's parks and reserves. On the one side, the World Bank decided to resume its assistance stopped with political unrests of 1999 and 2002. It launched the 5-year PARC-CI project, disbursing USD 2.5 million to broadly support FPRCI and OIPR. On the other, the German cooperation promised another USD 2.5 million to be specifically dedicated to the foundation's endowment fund (for TNP in particular). For this, WWF Germany, with financial support from BMZ and technical assistance from GIZ, first assisted FPRCI in making due diligence, finalizing criteria, and selecting directors. Outcomes of such a positive process were finally presented during the 9$^{th}$ Conference of Parties (CoP9) to the Convention on Biological Diversity (CBD) in May 2008.

### 4.2.4. Creating FPRCI-UK to mobilize funds

In order to host these first German disbursements (USD 2.3 million) into the endowment fund, it was eventually decided to create a FPRCI sister foundation in the UK. Advised by an international consultant, it was indeed felt that due to political instability in Côte d'Ivoire and UMEOA's stricter financial rules, international financial markets and funds would be keener to see their capital deposited in the UK before being reinvested. Hence, FPRCI-UK, FPRCI-CI's sister foundation in the UK was created in October 2009 to host the endowment fund and recognized to be of public utility in the UK. FPRCI-UK was officially founded by one member, FPRCI-CI, which similarly appointed a board of 9 voting directors (the same as in Côte d'Ivoire) and 2 non-voting members selected from donor partners (only one for now is sitting, WWF Germany). Besides, the executive directorate from FPRCI-CI also acts as executive directorate for the sister foundation in the UK.

Technically, funds to be invested on the financial market transit to the UK foundation's account while funds generated to be donated and spent for PAs in Côte d'Ivoire (from both the endowment and sinking funds) are transferred back to FPRCI-CI. An agreement was signed between both foundations to stipulate relations between them as well as procedures (both foundations co-own funds). And all documents and agreements with donors are to be jointly validated and signed by both foundations.

The asset manager was thereafter chosen in 2009 after a strict selection process and with the consultant financial advisor's assistance. The investment strategy (*Politique d'investissement du patrimoine*), defined and proposed by the foundation's Investment committee requires the asset manager to deliver a threshold of 4% net returns (after its management fees). At first deciding to carry a conservative investment portfolio (30% stocks and 70% bonds), FPRCI's investment committee and board of directors have recently shifted towards a balanced investment portfolio (50% stocks and 50% bonds), after this was discussed and validated with donor agencies.

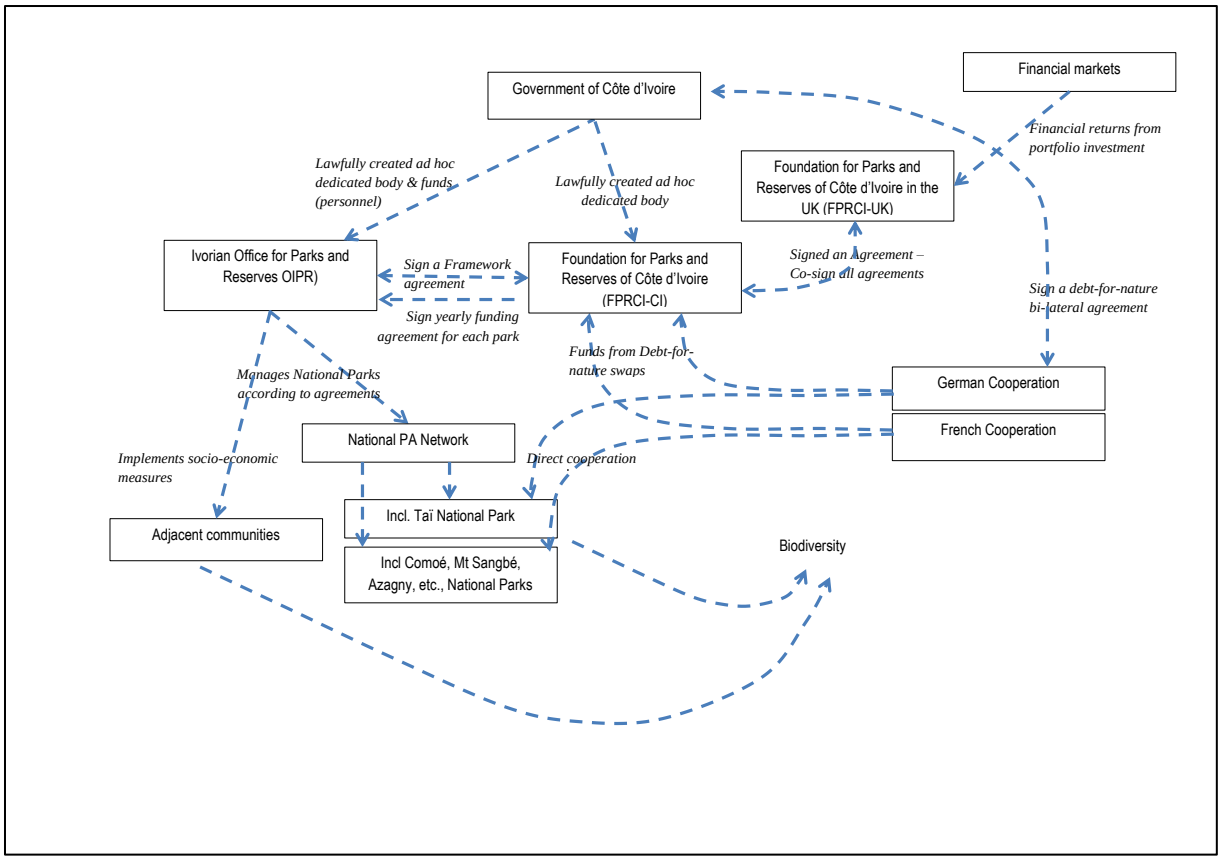


**Figure 2. Governance diagram for PA funding and management in Côte d'Ivoire**

*Source: Authors*

### 4.2.5. Funding the FPRCI: mobilising finance with debt-for-nature swaps

Besides the innovative nature of the structure and mechanism chosen in Côte d'Ivoire, as illustrated in Figure 2, innovation also came from the source of funding to be channelled.

In March 2010, in the context of the Paris Club's negotiations and the Heavily Indebted Poor Countries Initiative (HIPC) Initiative, the German government decided to write off and reschedule part of the debt it held from Côte d'Ivoire[50]. In return, the stipulated condition was for the government of Côte d'Ivoire to allocate some of this written off and rescheduled debt in the field of biodiversity conservation. More specifically, Côte d'Ivoire had to commit to disburse 9.5 million Euros for TNP (for 19 million Euros debt written off) and 10 million Euros for the Comoé national park (for 19 million Euros debt written off). In 2012, a debt swap agreement was signed between KfW and FPRCI together with the government of Côte d'Ivoire, where the payment schedule was set as well as conditions for these payments and monitoring procedures[51]. Contractually, a funding window was opened at the foundation for each of the 2 national parks where the government of Côte d'Ivoire is to transfer instalments. For TNP, it transfers instalments to the FPRCI-UK's account twice a year (March and September) until 2018 while for the Comoé national park four equal instalments were agreed on and have been completed by now. For each instalment, KfW receives the transfer order from the government of Côte d'Ivoire and a proof of funds' receipt by FPRCI-UK.

[50] Note this is different, and in addition, to the US$ 2.5 million disbursed in 2008-2009.
[51] A retrocession agreement (*acte de rétrocession*) with FPRCI was also signed by the Government of Côte d'Ivoire so as to ensure the funds would be channelled to FPRCI and then to OIPR for the management of TNP and Comoé NP

Money from instalments is then divided in two by the foundation. On the one hand, some share is, until 2018, channelled directly from FPRCI's sinking fund to OIPR and the concerned national park following both a 5-year Framework agreement and an annual Funding agreement. On the other, the remaining share is deposited into the foundation's endowment fund in order to generate financial interests, under the selected asset manager's supervision, which will cover PA management after 2018 and in perpetuity[52].

Until 2018 610,000 Euros, respectively 457,000 Euros, are thus yearly transferred from FPRCI to OIPR and then to the concerned PA in order to manage TNP and the Comoé national park. These funds, as defined by the Framework agreement with the donor, are to be allocated by OIPR, at the regional level, to specific categories of expenditure, eligible within the agreement. These are *only* recurrent costs, including contract staff (not public servants), running costs (fuel, water, electricity, daily allowance fees for patrols, maintaining borders, etc.), maintenance costs for vehicles, mission expenses and consulting services, as well as buying small equipment (<1,500 Euros). Investment costs, including park infrastructure and roads, vehicles but also infrastructure and projects for adjacent communities are excluded from this funding window[53]. Only exceptionally can investment be financed through the foundation's funding line, when request is made and after a non-objection notification is validated by the corresponding donor (here KfW).

For technical and financial monitoring purposes, KfW, through FPRCI, can control the mechanism so as to make sure expected results and effects are delivered. First, KfW is provided with all reporting documents requested from OIPR and respective national parks: technical and financial reports, external audits, etc. Second, KfW attends park stakeholder meetings at the end of the year where for each park an assessment is done of the park activities and results. Finally, and most importantly, KfW is a non-voting member (observer) on the FPRCI-CI's Board of directors. This means the donor can usefully monitor the mechanism and the associated processes and indirectly can control park activities through its participation in discussions within the foundation's decision-making body. Among other issues, KfW can for instance make sure that the asset manager is well selected, that its financial performance is aligned with the investment strategy agreed on, and that funds are well disbursed to, and spent by, PA managers.

Another debt-for-nature swap agreement was very recently signed with the French government in order to increase the foundation's endowment fund and therefore further finance several other protected areas in Côte d'Ivoire. Also building on the Paris Club's negotiations, a first debt swap had previously been signed in 2012 between the government of Côte d'Ivoire and the French government under a Debt Reduction and Development Contract (*Contrat de Désendettement et Développement* - C2D). The latter is a mechanism, led by the *Agence française de développement* (AFD), to write off the debt of the concerned country by refinancing it in the form of donations. The indebted country actually continues to service the debt (transfer to the French Treasury) but repayments to France are immediately transferred back as donations to the country, earmarked for a limited number of sectors[54]. The first C2D contract, amounting to 630 million Euros over 6 sectors, eventually allocated 16.5 million Euros to biodiversity conservation in Côte d'Ivoire. It included 4.5 million Euros to strengthen OIPR's and FPRCI's capacity, as well as to rehabilitate infrastructure and cover part of operational costs in 3 national parks (Azagny, Mount Sangbé, Comoé). In this, FPRCI was the organization to receive funds but had contractually to transfer those to OIPR for it to rehabilitate parks (Azagny NP, Mt Sangbé NP) and implement socio-

[52] For TNP, the endowment fund was allocated 3,5 billion FCFA while the sinking fund was allocated 2.7 billion FCFA, so a total of 6.2 billion FCFA (approximately 9.5 million Euros).
[53] Socio-economic measures for adjacent communities are counted as investment costs in OIPR budget and PA decentralised budgets.
[54] See the AFD website : http://www.afd.fr/home/outils-de-financement-du-developpement/C2D

economic measures for adjacent communities (Comoé NP). The FPRCI was therefore in this set-up just an intermediary body to channel funding to OIPR and PAs[55].

Yet, a second C2D contract was thereafter signed in 2014 to swap 1.1 billion Euros debt and allocate it to the same 6 priority sectors. In the process, biodiversity conservation projects were allocated 15.5 million Euros under the FADCI project (*Filières agricoles durables en Côte d'Ivoire*), whose agreement was finalized and signed in April 2016. Contrary to the first C2D, approximately 10 million Euros is now earmarked to FPRCI[56] to specifically capitalise the foundation's endowment fund. Interests generated from the endowment fund will contribute to finance park management costs for Azagny NP as well as Sangbé NP[57]. Following the same mechanism and model set up for TNP and Comoé NP, FPRCI and OIPR have finalised a Framework agreement to define annual funding amounts to each of the two national parks, procedures to use these funds, monitoring and reporting processes and eligible categories of expenditure. Contrary to the KfW debt-for-nature swap mechanism, investment costs including vehicles but also socioeconomic measures for adjacent communities (infrastructure) are here eligible. FADCI funds to the foundation's endowment fund are to be disbursed in two instalments within the year 2016, which will allow financial interests to be quicker generated and to cover the two parks' management costs.

As shown on Figure 2, monitoring and assessment of the mechanism includes all stakeholders. First, the Framework agreement was checked and validated by AFD (non-objection notification) so that the donor was involved in designing the mechanism and ensuring its sustainability. Besides, AFD is also now a non-voting member (observer) on the FPRCI-CI's Board of directors. As a result, together with FPRCI and other donors, it is part of all discussions related to park management by OIPR (during directors' meetings) and has access to all reporting documents and processes.

### 4.2.6. "Privatizing" management and decision processes for PA management in Côte d'Ivoire

Not only is the mechanism to mobilize and generate funds for Ivorian PAs innovative, but the FPRCI institutional set-up and financing processes also. These provide the whole PA network system with transparent procedures which ensure efficiency and sustainability in their management.

Created in 2002, the Côte d'Ivoire Parks and Reserves Office (OIPR) is a specific national public entity. Still under the administration's supervision, it is nevertheless an autonomous entity governed by a management committee. In the latter are sitting 6 representatives from the government (majority), 3 representatives from adjacent communities, 1 representative from the FPRCI and 1 representative from environmental NGOs (Decree in 2011). While the management committee discusses and validates OIPR's management plan, perspectives, budget and strategy, the Directorate General designs, proposes and implements those orientations as well as it oversees daily operations. OIPR's functions, undertaken and supervised by the Directorate General, includes infrastructure development, surveillance, ecological monitoring and evaluation, research, relationships with adjacent communities, ecotourism development, and finally communication and

[55] There was nevertheless some funding specifically earmarked for FPRCI's capacity building.
[56] To make sure the government of Côte d'Ivoire, within the C2D contract, will allocate money from the FADCI project to FPRCI for its endowment fund, a retrocession agreement (*acte de rétrocession*) was signed between the government of Côte d'Ivoire and FPRCI where the latter also commits to use the fund to finance OIPR's management activities in the national parks concerned; the retrocession agreement was validated by AFD (non-objection notification).
[57] Interestingly, 7.5 million Euros were initially earmarked but an additional 2.5 million Euros was requested so that interests generated from the endowment fund could also not only cover recurrent costs but *also* investment costs (vehicles, infrastructure).

outreach. These tasks are performed, on the one hand, at the central level (Directorate General in Abidjan) but are also, on the other, decentralized at the regional level to zone directorates. Each of the 5 zone directorates (West, South-West, South, Centre, North-East) are in turn subdivided in several sectors (3 to 5) depending on the size of the region and the number of protected areas within it (a total of 22 sectors over the whole country).

OIPR holds management responsibility over 14 protected areas, representing 2.1 million hectares, including 1.75 million hectares for 8 national parks. It employs approximately 480 persons, among which 95% are civil servants, including 200 game rangers. Government subsidies cover most of the budget, mainly through salaries to public servants.

Each zone directorate is to design a number of strategic and operational documents for each PA under its responsibility, which will contribute to their efficient management.

First, a 5-year[58] development and management plan presents the park's conservation status, its legal and governance background, and designs different management measures to be carried out in order to reach defined results and objectives based on agreed strategic interventions. Management measures include surveillance measures, monitoring & evaluation and research, contribution to local communities, communication and outreach, infrastructure development, and ecotourism. For each of these measures, indicators are clearly defined for results, effects and impacts and quantitative objectives are set.

Second, a business plan is designed in order to quantify the costs associated with management measures agreed and proposed in the development and management plan. Overall, it is the financial translation of technical choices made in the development and management plan. It presents and analyses the costs and financial resources available over a certain period (5-7 years) and as a result investigates the funding gap which will be necessary to fill. In this regard, it aims at proposing a financial strategy and at attracting additional funds from the private as well as public sector.

Third, an annual plan of operations is elaborated. It very precisely specifies the concrete activities to be carried out, their timing over the year, the result to be achieved (a quantitative indicator), their cost, and finally the stakeholder to support these activity costs.

All those plans are discussed, co-designed and agreed on with all stakeholders concerned with the concerned PA. Local authorities, adjacent communities, researchers, but also the FPRCI and technical as well as other financial partners all contribute to designing and refining the management and business plans. Every trimester as well at the end of the year they similarly review the implementation of such plans. *In fine*, this inclusive elaboration and monitoring of PA management structures and activities legitimizes the parks' operations and activities and reduces potential conflicts.

Due to the new private financing role of FPRCI, a particular relationship is now being built between OIPR and the foundation, as well as indirectly with its donors. These links, based on financial and technical reporting as well as on monitoring conservation results, constitute a governance innovation which contributes to strengthen PA management in Côte d'Ivoire and helps OIPR reaching private sector operational and strategic decision-making standards.

FPRCI and OIPR sign a Framework agreement for each and every funding window dedicated to one PA. This framework agreement, validated by the concerned donor (through a non-objection notification), defines responsibilities, modalities and procedures for financing the concerned PA over a certain period of time and sets eligible expenses and their amounts. It stipulates that an

[58] Alternatively a 10-year plan, as in the case of the Comoé national park.

annual request for funding for the PA (for next year's activities) is to be sent by OIPR to FPRCI. This request must be based on the PA's development and management plan, the business plan, as well as on the annual plan of operations; it will be reviewed by FPRCI according to the coherence between the request made and the said plans. When (if) the request is validated, after its official presentation by OIPR executive director (and zone directors) to the foundation's Board of directors, a yearly funding agreement is then signed between both parties.

Implementation of both the framework and the funding agreements will be reviewed by both partners, together with other concerned stakeholders, on a quarterly basis. In this regard, the private funder, FPRCI, is provided with technical and financial reporting every quarter and is able to review the implementation rate by the PA management team and OIPR. A rate below 75% would trigger a thorough assessment of the quarterly report while a rate below 50% would trigger a meeting between OIPR's management committee and FPRCI's Board of directors, and thus could lead to stopping funding[59]. At the end of the financial cycle (March/April), in addition, a meeting (*atelier bilan*) is organized with all stakeholders to monitor and evaluate the closing annual funding agreement. On this occasion, impacts are evaluated building on indicators agreed in the development and management plan. Together with external audits ordered by the foundation, this exercise allows FPRCI to assess effects of its funding on PA conservation and allows to eventually modify modalities, procedures and strategies. Importantly, while funding concerns a certain type of spending, such monitoring & evaluation is conducted over the whole annual plan of actions, without distinction of expense categories. *In fine*, this means that FPRCI, even with its partial financing of PAs, is able to control overall performance by OIPR and its PA management team as well as their successful level of completion of the set conservation objectives.

## 4.3. Innovation at scale: securing the parks' integrity

The FPRCI mechanism is not only a funding innovation but also an institutional innovation. It mobilises conservation finance which, most importantly, is very efficiently used to manage Ivorian PAs thanks to all checks and balances, monitoring and evaluation processes which have been put in place with FPRCI funding and procedures. This allows conservation of biodiversity inside protected areas on a large scale, at the national as well as at the local level.

### 4.3.1. National scale

As mentioned above, OIPR manages a network of 8 protected areas (PA) and 6 natural reserves (NR) over a total of 2.1 million hectares, a significant 6.5% of national territory. Out of this, FPRCI covers costs, at least partially, for 7 parks, i.e. 87.5% of the PA network, with all its funding to OIPR in the form of direct support (sinking fund) and financial interests from the endowment fund.

### 4.3.2. Local scale: illustrating with TNP

TNP is 536,017 hectares large, i.e. 1.7% of the country's surface. Together with the 408,277 hectares peripheral zone, the Taï area represents close to 3% of Côte d'Ivoire inland territory. As per Law n° 2002-102 and Decree n° 2002-359, economic activities (e.g. mining) as well as natural resource use and farming activities in peripheral zones around protected areas are regulated and monitored by OIPR. In this regard, sustainably funding, strengthening and finally monitoring OIPR operations inside and outside TNP is a significant contribution of FPRCI to biodiversity conservation over a large biodiversity-rich area.

[59] The funding agreement (article 9) clearly states that an insufficient implementation rate would make FPRCI cease disbursments.

In 2015, a total budget of close to 600 million FCFA (915,000 Euros) was spent for TNP operations and infrastructure while approximately 500 million FCFA (762,000 Euros) was used to pay civil servants responsible for TNP management (including bonuses and social security). The latter public service wage costs were fully covered by the government of Côte d'Ivoire. Concerning operational costs, 398 million CFA (607,000 Euros) were allocated from FPRCI to cover contract staff's salaries and bonuses, small equipment, but also mostly maintenance of vehicles (55 million FCFA) and petty money for game rangers while in the field (*pécule hommes de troupe*) ; in addition, 170 million FCFA were donated by KfW[60] to fund building infrastructure, support to adjacent communities, among other things ; and finally 32 million were generated by the PNT itself (ecotourism, renting space, etc.).

In 2015 staff included 100 civil servants, 13 contract staff, and 27 interns for a total of 140 employees dedicated to biodiversity conservation in and around PNT. Among these, there were 21 people at the zone direction headquarters in Soubré, 53 rangers (*brigade mobile*) and 76 staff stationed across the 5 sectors of the PNT.

Overall, this represents a very significant technical capacity (both in quantity *and* quality) to protect the park's integrity and preserve its rich biodiversity. In 2015, 203 patrols have been carried out inside TNP (and just outside, at the boundary) with 9,933 man/days involved, an increase as compared with 2014 (respectively 174 patrols and 8,722 man/days)[61]. Importantly, almost all 25km² park's quadrats were patrolled (95%) whereas, as it is requested in the development and management plan, close to 3 quarters of patrols (72%) were concentrated in vulnerable areas of the park, mostly the eastern part of PNT, where encroachment and small-scale gold mining are occurring, as well as in the PNT South-west part where ecotourism activities are located.

This eventually led to arrest 174 offenders during 2015 (against 157 in 2014). This included three quarters who were illegal miners, 15% who were poachers and 10% who were farmers illegally clearing inside PNT. Besides, 91 mining tools were seized, 17 rifles and 153 ammunition as well as 84 wildlife dead parts, mostly duikers (against 17 in 2014). Though these figures could tend to show an unwelcome increase in poaching and artisanal gold mining in and around TNP, this also positively proves the capacity built by OIPR to keep those threats to biodiversity under control. This significant capacity for instance allowed OIPR to recently rehabilitate TNP's eastern part with natural cover with the agreement of most local stakeholders. This part, due to successive immigration waves, was previously an area illegally encroached and farmed with cocoa. OIPR eventually decided to cut down cocoa trees within this zone (4,200 ha since 2012, including 3,000 ha in 2014) and to concentrate patrolling efforts there (it is a vulnerable area). This strategy proved efficient: encroachment in this area is almost nil and represents a marginal share of offences reported.

[60] This comes from some support remaining from a previous phase but not from the debt swap funding.

[61] Patrols last on average 7 days in PNT with a minimum of 4, a maximum of 11. In 2015, each ranger has patrolled in the field an average of 17 days per month. A patrol activity is generally triggered by information transmitted by adjacent communities to one of the sector chiefs. GPS coordinates to be reached are defined ahead of the mission and recorded in the patrol report after completion, together with all events and issues encountered during the patrol.

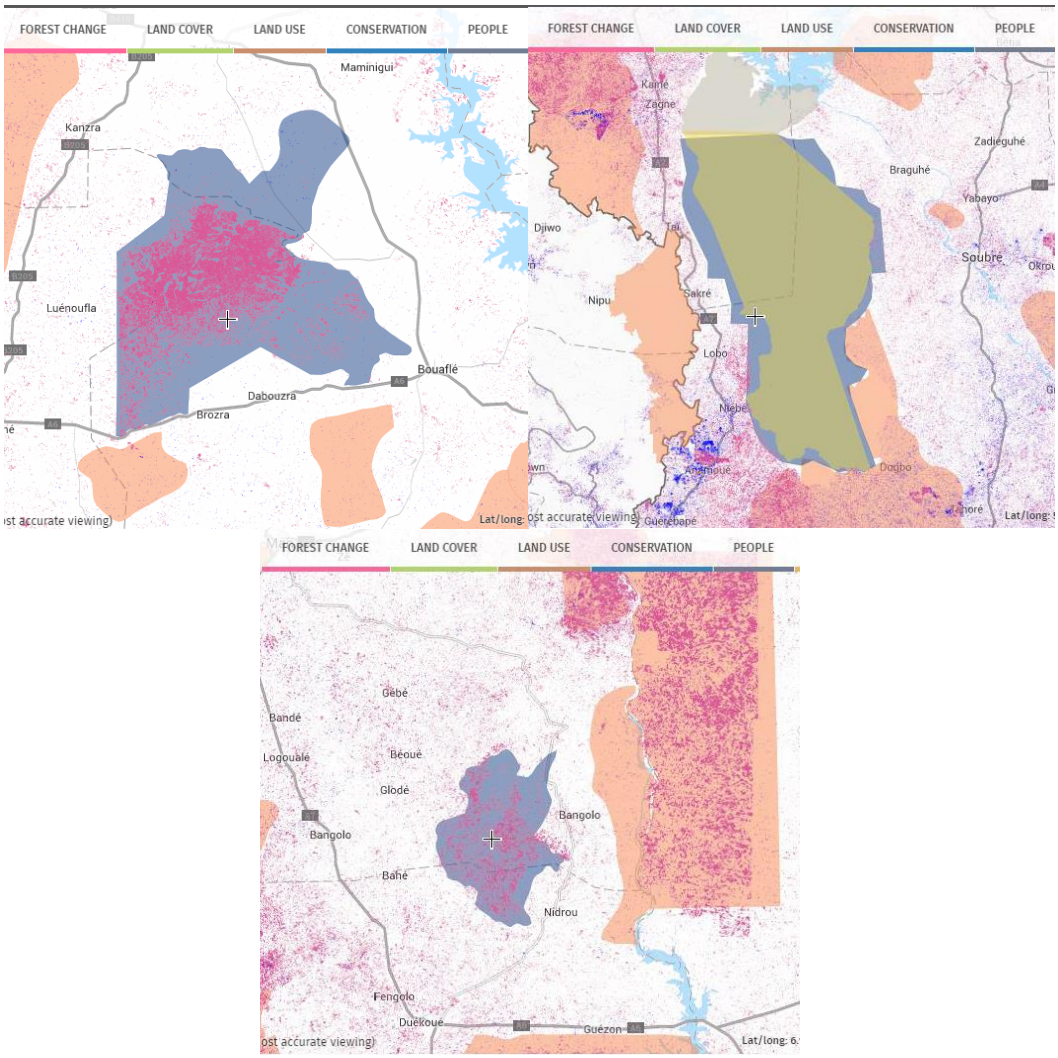


**Figure 3. Deforestation 2002-2015 in three protected areas**

*Clockwise maps: Marahoué national park (101,000 ha), Taï national park (536,017 ha), and Mount Péko national park (34,000 ha)*

*Note: blue (and green) areas are designated protected areas (in Taï NP, 2 PA status are superposed) while red points are deforestation since 2000*

*Source: Global Forest Watch, Accessed 25 July 2016*

In total, deforestation inside TNP, and within its close vicinity, is kept to minimal. Despite the South-west region being the biggest cocoa producing area and as a result a place of migration, TNP is probably the most intact and best protected park within the Ivorian PA network. Compared with other protected areas, TNP was largely untouched by encroachment and deforestation activities in the 10 last years (Figure 3), and human activities, as evaluated by the encounter rate (during annual census), have decreased to their lowest level in 2015 (République de Côte d'Ivoire, 2015b).

Wildlife numbers, including elephants, antelopes, but also monkeys, have also stabilized since 2012 (after a critical decrease during 2009-2011 and the political crisis). Some groups, including monkeys, have even seen their number increase since 2012 (Tiédoué et al., 2015).

Without any doubt, part of the explanation lies in the continuing financial and technical support of international donors, and most recently of the private FPRCI, which surely allowed to secure sustainable funding from innovative debt-for-nature swap sources and additionally to strengthen OIPR efficient procedures and management capacity.

## 4.4. Innovation at risk: challenges and the way ahead

FPRCI's innovative involvement in mobilizing biodiversity finance, through debt-for-nature swaps, and using it for funding the PA network, through OIPR, is still recent. The financial and contractual approach adopted by the foundation therefore needs to be strengthened and reinforced in order to ensure its sustainability. The mechanism described, although innovative and highly efficient in promoting sound PA management and biodiversity conservation, might face several challenges that need to be tackled in the mid to longer term.

First, transaction costs to design, negotiate and thereafter implement and monitor contracts remain significant. Numerous agreements had, and will still have, to be signed with a number of stakeholders. For debt-for-nature swaps, retrocession agreements have to be signed with the government of Côte d'Ivoire; and funds need to be transferred to FPRCI-UK then to FPRCI-CI. In the C2D case, funds need to transit via the French treasury before being transferred to UMEOA accounts, then to FPRCI-UK and back to FPRCI-CI and finally to OIPR. Then framework agreements, as well as annual funding agreements have to be signed with OIPR for each PA. In all of this, non-objection notifications are to be made by donors. Overall, this implies effort, time, and financial costs that are borne by the foundation but also by its partners. This might create over-complexity as compared with alternatives, for example direct transfers to the national authority in charge of managing the protected area system.

Second, such an endowment fund scheme might actually substitute previous project-based donor funding's unpredictability by financial market volatility and limited transparency. On the one hand, several donors are still reluctant with capitalising endowment funds which invest their assets on financial markets that are volatile and unpredictable by nature. Recent financial crisis may of course explain part of this donor timidity and deterioration in their confidence. This caution is all the more reinforced by the willingness of donors and funders to strictly control where money will be invested. Foundations and their selected asset managers will increasingly need to track financial products down and make sure those do not invest any fund on assets linked with terrorism, the arms industry, drugs and other illegal activities. This might of course place heavier information burden on foundations, including FPRCI, and might limit their capacity to mobilize funds. On the other hand, some donors also doubt that financial markets, when not taking too much of a risk, might generate high enough returns on investment to be able to significantly fund PA operations. Assets currently donated and capitalized by FPRCI are still limited when compared with other foundations. When counting for 1/ resulting higher management fees by the asset manager[62] and 2/ the need to transfer direct funding to PAs very quickly through a sinking fund (not waiting to generate interests), the probability for returns on investment to cover, alone, PA operational costs remains uncertain.

Third, the focus of the foundation on funding recurrent costs (operational costs) prevents larger investment in infrastructure and support to communities adjacent to PAs. Vehicles which were financed by previous donor projects and are necessary to patrol inside parks are now getting old and need to be repaired and replaced. Their number is also in some cases inadequate when compared with the increase in staff. In this regard, excluding infrastructure investments from funding agreements between OIPR and FPRCI, leaves the government of Côte d'Ivoire the sole

[62] Bigger funds can of course negotiate lower management fees. Hence some funds are indeed now willing to pool their assets together to tackle that issue.

responsible for this critical budget in a context of competing social needs and political requests. The insufficient level of the foundation's capitalisation by current donors is of course a prime reason, but the willingness to focus efforts on recurrent costs, when signing framework agreements with OIPR, might also be usefully modified. While park infrastructure is inefficient without daily activities being carried out, the contrary is also true: rangers without vehicles, barracks and fair roads cannot work properly. In a similar way, socio-economic measures, including social basic infrastructure and livelihood projects for adjacent communities living in parks' peripheral areas, are essential to legitimize OIPR's actions and its rangers' presence. Yet, only operational costs, i.e. fuel to go to villages, few posters and T-shirts, are eligible. As a result, the burden falls on donor projects' budget, which is time-bound and unpredictable, or on government's budget, which is still limited. In TNP, socio-economic measures were until 2014 supported by donor project money. Assistance included setting up 11 micro-projects (pork farming, poultry, etc.), basic infrastructure (health centres, schools with equipment, 13 water pumps, and some other initiatives) but also training for community associations and farmers. Nevertheless, due to recent stop or lack of funding, socio-economic measures for adjacent communities have been reduced drastically in 2015 and the 2016 budget did not allocate any fund for such activities. While indeed the mandate of OIPR is to focus on managing the protected area itself, and adjacent areas are actually governed by local authorities who are responsible for their development, targeting funding for strict conservation without further engaging communities might prove counter-productive. An illegitimate innovation will only lead to local resentment, conflicts and encroachment.

## 4.5. Conclusion

Combining the mobilisation of funds through debt-for-nature swaps and the innovative set-up of an environmental trust fund has allowed the increased protection of parks' integrity in Côte d'Ivoire. Public and private partners at the national as well as international level (the Government of Côte d'Ivoire, bilateral donors, the foundation in Côte d'Ivoire and in the UK, the parastatal PA agency) have all collaborated to simultaneously raise additional funding and importantly ensure efficient management of the PA network in the country. This has led to several PAs being better protected with operational costs being financially covered in a stable and predictable manner (the Taï national park, the Comoé NP and more recently Mt Sangbé NP and Azagny NP). In the TNP, wildlife numbers are on the rise and slash-and-burn agriculture, in particular for cocoa plantations, remains under check. Overall, activities of park managers, and their associated ecological effects and results, are better monitored through this new funding and contracting mechanism.

Yet, this innovative structure involves contractual complexities and transaction costs which have to be kept to minimal if sustainability is to be ensured. It is also dependent on the financial market volatility and its lack of transparency. *In fine*, this means that public intervention and spending, through the government of Côte d'Ivoire, will remain a major share of conservation efforts in the country. Almost all park employees are public servants whose salaries, benefits, and bonuses are incurred on the public payroll. Private finance through endowment funds is therefore only complementary funding that can for now mainly support costs which neither the government nor project-based donors are willing to cover : recurrent costs. In this context, FPRCI's continued funding is essential while public financial involvement is a pre-requisite.

Institutionally, the PA network will benefit from the currently clear division of tasks and responsibilities between the three main actors: FPRCI as a funder, OIPR as the independent implementation body, and finally the State as the ultimate guardian (*tutelle*) of biodiversity conservation in PAs, a public good for the benefit of all Ivorian citizens. Such clear division avoids conflicts of interests and patronage and provides the PA network with efficient, transparent and private sector-based procedures and management systems. In this, project-based donor investment will also continue being vital. The TNP experience clearly shows that old and long

relationships, mutual trust and building capacity between the German technical and financial cooperation and the government of Cote d'Ivoire have played a major role in safeguarding the park's integrity and biodiversity. While the FPRCI innovation has modified the conservation ecosystem of both funding and implementing actors, the overall institutional architecture is still dependent on the existence and important respective role of all these stakeholders, the State, OIPR, donors, NGOs and the FPRCI.

## 4.6. References


Lauginie, F., 2007. Conservation de la nature et aires protégées en Côte d'Ivoire. CEDA/NEI Hachette et Afrique Nature, Abidjan. 668p.

Myers, N., Mittermeier, R.A, Mittermeier, C.G., da Fonseca, G.A.B., Kent, J., 2000. Biodiversity hotspots for conservation priorities. Nature 403, 853-858.

République de Côte d'Ivoire, 2015a. Plan d'Aménagement et de Gestion du Parc National de Taï 2014-2018. Office Ivoirien des Parcs et Réserves, Abidjan. 141p.

République de Côte d'Ivoire, 2015b. Parc national de Taï. Rapport annuel d'activités 2015. Office Ivoirien des Parcs et Réserves, Direction de zone sud-ouest, Soubré.

République de Côte d'Ivoire, 2016. Stratégie et Plan d'Action pour la Diversité Biologique Nationale 2016-2020. Ministère de l'Environnement, de la Salubrité Urbaine et du Développment Durable, Abidjan.

Tiédoué, M.R., Normand, E., Diarrassouba, A., Tondossama, A., Boesch, C., 2015. Etat de conservation du Parc National de Taï : Rapport de suivi-écologique - phase 10 (novembre 2014- mai 2015)-, Rapport OIPR/WCF, Soubré, Côte d'Ivoire, 38 pages.

Varlet, F., Kouamé, G., 2013. Etude la production de cacao en zone riveraine du Parc national de Taï. Étude établie par ordre et pour le compte du Programme de Développement Economique en Milieu Rural et Biodiversité (PRODEMIR), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Abidjan.

# 5. IFMs for the future? Synthesis of results from three African case studies

Aichi biodiversity target 11 calls on countries to contribute safeguarding biodiversity by increasing the worldwide network of areas effectively protected. This implies 1/ mobilizing new and additional funds for biodiversity conservation within and outside protected areas; and 2/ adequately channelling those funds to allow for actual and effective management of protected areas and their immediate surroundings. In this regard, Parties to the Convention on Biological Diversity (CBD) promote the design and implementation of innovative financial mechanisms (IFMs), which are, according to the Leading group on Innovative Financing for Development, complementary to official development assistance, predictable and stable. On the ground, payments for ecosystem services, biodiversity offsets, the tax lever, sustainable investment and the debt lever, as well as climate finance are all tools currently used to incentivize and fund protected areas, including in Africa.

Analysing in depth three of those mechanisms implemented in Africa, this report aims at uncovering their real potential to finance effective biodiversity conservation *at scale* in and around African protected areas. Beyond global scenarios, this report proposes a critical reality-check: three extensive case studies indeed assess the reality of these instruments *at work*. Each of these case studies disentangles the mechanisms' governance, both institutional and contractual, their strengths and weaknesses, and their significant contribution to Aichi target 11 on the African continent. *In fine*, this report allows unravelling the innovative nature of those instruments, and drawing lessons for their future design and implementation.

## 5.1. Innovation lies in forms of combination of public and private involvement

Across the three African case studies presented in this report, innovation is present in various forms. All of them relate, in a way or another, to a form of combination, or recombination, of public and private involvement. While mechanisms studied do not display much highly qualified financial engineering (innovative *finance*), significant innovation rather lies in finding efficient ways to foster and facilitate voluntary involvement from the civil society (individuals, communities, businesses and non-for-profit organisations) and combine it with the respective State and public administrations' attributions, roles and responsibilities (innovative *governance*).

Innovative public-private combination, as illustrated in the case studies, is therefore central to any efficient PA funding and management. This combination is found in three essential components: funding sources, contractual governance, and institutional framework.

### 5.1.1. Combining public and private funding: no substitution, but complementarity

Mobilizing financial resources requires to innovatively combine *sources* from individuals, businesses, and non-for-profit organisations with funding from Official Development Assistance (ODA) as well as from local, national or regional governments.

On the one hand, private sources have the potential to significantly fund conservation. Credit Suisse (2016) recently estimated conservation finance investment will potentially reach USD 200-400 billion within the next 4 years. On the other, markets remain unpredictable. The 2008 financial crisis, and the current low interest rates' period, limit returns on capital from investing on the

financial market, whereas results from carbon markets, without any compliance mechanism at the national or international levels, are mixed, both in terms of price and quantity sold.

In total, rather than substituting public finance, private investment in conservation needs to be combined with public funds to generate and leverage finance. In Sierra Leone, funds for the Gola forest came first from the EU and the French GEF (FFEM), then more recently from an NGO combined with private buyers of voluntary carbon units; in Côte d'Ivoire, funds from debt-for-nature swaps with German and French governments were used to complement Ministry of environment's funds to pay for PA management costs; in South Africa finally, individual private farmers bear management costs on their land with financial assistance from the Government, through tax deductions.

For this combination to happen and be efficient, experience from case studies shows that three conditions are to be met: 1/ security for investors and donors with respect to political instability, 2/ long-term continuity in financial flows and 3/ conditionality of payments to the effectiveness of action.

One possible solution lies first in creating a specific private and autonomous body, which possesses a moral identity and the ability to receive private funds, and is charged with a responsibility to finance public conservation missions. While the Foundation for Parks and Reserves in Côte d'Ivoire (FPRCI) was created as a private foundation to fund the Ivorian network of protected areas, in Sierra Leone the Gola Rainforest Conservation private Company Limited by Guarantee (GRC LG) was recently registered to receive proceeds from carbon markets and finance operations of the Gola Rainforest National Park (GRNP). In both cases the private entity allows private partners, donor agencies and governments to partner and fund conservation missions under supervision from public authorities (the State is a member of the GRC LG whereas the Ministry representatives seat at the FPRCI's Board); yet private partners control the use of their funds (e.g. private sector people represent the majority of FPRCI's board members).

In both cases, the private entity's capital is located in a supposedly safe financial place (the UK for instance), and revenues are then disbursed for conservation activities on a contractual basis, when agreed conditions have been fulfilled. The involvement of private vehicles together with private partners hence ensures long term stability as is illustrated with the case of an initial and perpetual capital endowment owned and managed by Environmental Trust Funds (ETFs), which is then regularly used (interests) to fund conservation. In that respect, ETFs and other initial-capital-based finance instruments bring the benefits of recurrent, although not irreversible funding. In case conditions are not complied with, private vehicles can stop funding activities. *In fine*, this combination where a private entity is lawfully charged with public responsibilities limits the uncertainty that is otherwise typically attached to "boom and bust" public and donor funding cycles.

In all cases, creating such autonomous and mixed public-private bodies (in Sierra Leone and Côte d'Ivoire) allows finding resources among a vast array of financial sources, based on a mix of traditional governmental budget, legal and public backing, as well as private donations and public assistance, that are all channelled through various forms of foundations, funds, ODA instruments such as debt-for-nature swaps, or carbon markets.

### 5.1.2. Combining private and public action: contractual governance and New Public Management

Beyond finance, mechanisms presented innovatively combine both public and private roles in an efficient way. Two essential trends have emerged at this governance level.

First, individual farmers and rural communities are contracted to change their business-as-usual practices and adopt more sustainable production techniques (Lapeyre et al. 2015; Wunder 2005; Laurans et al. 2012). In Sierra Leone, the Government and RSPB signed a conservation concession agreement with adjacent communities in order to secure the Gola forest reserves' integrity (stopping logging and slash-and-burn agriculture), where the NGO was charged with conservation activities and communities were compensated for foregone rights and for respect of the management plan. More recently, the GRC LG and the Government signed similar agreements with forest edge communities and further signed a joint venture agreement whereby the GRC LG is now contractually charged with the management of the Gola forest. In South Africa, tax benefits, contractually granted by the Government to individuals, are designed to partly compensate farmers' opportunity costs of using their land in a sustainable way (officially declaring a protected area on part of their private farm).

In both cases, contracts, be they payments for ecosystem services or conservation easements, are signed and involve payments that are, importantly, conditional to behaviours, actions and results agreed on in advance. While in Sierra Leone paramount Chiefs must do all in their power to prevent poaching as well as slash-and-burn agriculture in and around the protected area, in South Africa farmers must implement a management plan. In turn, if agreed conditions are not fulfilled, payments can be withheld.

This contractual approach is further reinforced by the design of new and innovative governance arrangements where public, private and civil society actors join to coordinate their efforts and increase PA management effectiveness. This is the second trend. Here, roles and responsibilities of respective stakeholders are clearly defined, as well as their financial means and the outputs to be achieved. In Côte d'Ivoire, following typical concepts of the New Public Management (Ferlie, 1996; Barzelay, 2001), a conservation-devoted agency, OIPR, was created by law to manage the national network of protected areas. The *ad hoc* entity is autonomous, and its board as well as executive direction manage funds independently based on agreed operational plans, although under the administration's supervision and partial funding from the Ministry. Here the Government is "steering not rowing", using market and quasi-market mechanisms in delivering public services, and separating politics from the management of public services (Marshall, 2008). Traditional boundaries of the State are modified (Birner and Wittmer, 2004) and a new principal-agent relationship is introduced, whereby the *ad hoc* agency is now responsible for reaching a set of negotiated objectives. Theoretically, this contractual approach replaces the hierarchical relationship involved in public administration where incentives are diluted and monitoring costs are significant (Mookherjee, 2006).

In Côte d'Ivoire, OIPR is accountable to both the Ministry and the Foundation for Parks and Reserves in Côte d'Ivoire (FPRCI), which annually fund recurrent costs for several protected areas within the OIPR network. In the latter case, OIPR and FPRCI sign a yearly funding agreement where disbursements are conditional to fulfilling certain milestones. In Sierra Leone, a specific private entity, a Company Limited by Guarantee, was also set up for the government and NGOs to share responsibilities and rights as regard the management of the Gola Rainforest National Park. This private company acts as an independent vehicle where public, private and NGO actors clearly define their respective roles, beyond political changes and funding cycles. In total, as compared with a situation where these are totally integrated within the public administration, such public-private independent entities are more efficient and more service-oriented. This increases cost effectiveness, policy capacity, responsiveness and monitoring and evaluation.

Whether through public-private partnerships, co-management structures, shared governance (Borrini-Feyerabend et al. 2013), service contracts, or other governance arrangements, the contractual approach is effective in improving PA management (European Commission 2015). Beyond a technical or financial innovation or a simple privatisation of conservation, the innovation

found in the three case studies lies in a smarter way of combining private and public roles as well as in the generalisation of this combination and in its different forms across social and geographical contexts.

### 5.1.3. Combining private and public rule: securing conservation areas

Private and public involvements also complement each other at the institutional framework level (i.e. the rules of the game).

Contractual governance requires public legitimacy and a strong rule of law. Conditional contracts need to be backed by the judiciary. *Ad hoc* entities, be they private or public-private, need to be lawfully recognized and their prerogatives respected by the State. In all cases, private and civil society actors need to be assured that their contractual rights, and therefore their investment, will be secured. Joint-venture and benefit-sharing agreements in the Gola rainforest case in Sierra Leone need to be complied with and credible sanctions eventually enforced, as it is the case in Côte d'Ivoire with funding agreements between FPRCI and OIPR. In South Africa, biodiversity stewardship agreements are binding and need to be respected by the Provincial State, the Federal State as well as the tax administration and the private farmers, in particular when the land is gazetted within the national protected area system, and tax deductions are granted.

In turn this means that the State is to clearly define and defend boundaries of protected areas, whether public, private or community-owned, and determine respective responsibilities of all stakeholders *vis-à-vis* the concerned PA. In Sierra Leone, the State, *via* the National Protected Area Authority (NPAA) remains the sole owner of National Parks, including the Gola Rainforest National Park (GRNP). In the short to longer term it must therefore secure the legal status of the GRNP and its neighbouring community areas, as well as clearly define rights and duties of all actors involved in their management: ministries, NAPAA, the GRC LG, communities, and NGOs such as RSPB and CSSL. In South Africa, the PA network is a combination in a nation-wide conservation system of public parks and voluntary reserves. Innovation here lies in providing an official and perennial recognition to voluntary protected areas, and in explicitly integrating these private areas in the country-wide conservation organisation. By giving and securing a status to privately protected areas and allowing them to be registered both in the national conservation organisation and in the property registration system, it allows integrating the large variety of land uses that are typical of private properties in the conservation strategy. Hence grasslands, forests, wetlands, etc., that are used for production purposes, when compatible with conservation, can then be perennially inserted in regional and national ecological networks.

In total, the rule of law at the institutional framework level, perennially securing both property rights and contracts, is a pre-requisite for sustaining innovative mechanisms over the longer term and therefore achieve conditionality and delivery of results, as well as accountability and control. In turn this contributes to ensure PA management effectiveness and the associated conservation of biodiversity.

## 5.2. Key points of innovative instruments

This triple combination (i.e. mixing private, public and civil society actors in funding, contractual governance, and institutional set-up) usefully unlocks strong synergies in conservation stakeholders' assets, networks, capacity and skills and partly explains the effectiveness, at a significant scale, of innovative mechanisms in the 3 case studies presented. Several characteristics of these tools and conditions for success are worth noticing: the need for security for funding and governance, the need for conditionality, the need for capacity and champions, and finally the need for long-term relationships and intermediation.

### 5.2.1. Bringing security with respect to funding and contracting effectiveness

Innovative instruments are typically designed to maximise the security of funding. Establishing a Trust fund, or at least its associated bank account, in a stable finance place is for instance a means to prevent the funding source from being seized or diverted from its initial purpose. Similarly, creating a dedicated and autonomous entity that is responsible for the effectiveness of conservation appears a good way to enhance the precise specification of activities, their control, evaluation and the ability to actually expect results. As discussed with concepts drawn from New Public Management, the autonomy and responsibility of these dedicated bodies, be they PA agencies (in Côte d'Ivoire) or private not-for-profit companies (in Sierra Leone), is said to make the alignment of conservation interests easier than by way of command-and-control through full integration within public administration. Of course, this again requires the rule of law to be ensured and sustained, and institutions to be stable. *In fine*, innovative financial mechanisms can solely operate within a governance system secured by public force and legitimacy.

### 5.2.2. Ensuring conditionality

In all three case studies the contractual approach stands out as an essential feature explaining the actual delivery of conservation results. Central to this contractual approach are conditions attached to the signed agreements linking stakeholders and defining their respective responsibilities, rights and duties. Conditions are to be fulfilled and corresponding payments are thus dependent on the observed realisation of outputs.

In South Africa, to be annually granted tax deductions private landowners need to respect the Biodiversity Stewardship agreement, and importantly the associated land management plan, they have signed with provincial conservation authorities. In Sierra Leone, communities adjacent to GRNP are to refrain from poaching and slash-and-burn agriculture in order to receive funds specified in the benefit-sharing agreement. In Côte d'Ivoire similarly, PA operational costs supported by OIPR are paid by FPRCI according to the yearly funding agreement and its actual realisation.

Conditionality ensures verification and positively influences stakeholders' strategies towards PA effective management and biodiversity conservation. In a context where, on the one hand, funding instruments that rely on recurrent and indefinite payments often raise the problem of their guaranteed continuation over the long term, and, on the other, one-off initial payments offer insufficient conditionality and bear the risk that initial requirements will not be fulfilled in the long run (Pirard et al., 2009), this is noticeable. As illustrated with ETFs, innovative funding associated with contractual conditionality brings long term guarantees with, however, the possibility to stop payments when conditionality is not guaranteed. At the same time it provides for recurrent although adaptive funding in cases where long-lasting support is needed and funding is difficult.

Financing operational day-to-day expenditures with such tools represents a good illustration. Traditionally, public management is defiant with respect to funding operating expenditures rather than capital expenditures, especially in developing countries (Hicks and Kubisch, 1984). First, recurrent expenditures potentially require important management control costs. Second, they tend to be much less politically palatable than investment expenditures, the latter allowing a better communication of political action and limiting the long-term commitment of the State. Therefore, day-to-day recurrent and small scale spending tend to receive limited support; however they are strongly needed on the field to sustain the protection of biodiversity. Innovative instruments in the three case studies prove attentive to this issue and are able to address it. Objectives and organisations adopted in the three projects explicitly target protected area operational costs, be they for monitoring, patrolling against encroachment or poaching, sustainable farming, etc.

### 5.2.3. Building capacity and finding "champions"

Innovative financial instruments (IFMs) are not abstract mechanisms which function on their own without significant human interactions and contribution. IFMs are basically social and human constructs which coordinate and govern actions and relationships between stakeholders. As a result, their efficient and sustained operation depends on people involved in their design and implementation.

In this regard, all case studies report the existence of "champions" at two levels. First, political champions need to be found in line Ministries and public administration. While in South Africa continued development of the Biodiversity Stewardship programme relies on provincial administration and its interest in fast-tracking the approach (as proven by the number of public servants employed for this), in Sierra Leone a few number of people located at the Forestry Department, NAPAA, or in Presidential cabinet, are actually strongly supporting GRNP and any stakeholder involved. In Côte d'Ivoire, the Ministry for Environment itself lobbied and worked hard for the creation of FPRCI. In all cases, it is thus crucial to keep such high-level people on board and build their understanding of the mechanism and as well as their capacity to act in favour of protected areas. Such champions form the backbone of IFMs' success and sustainability. Building trust and investing in longer-term relationships with these respective groups of influential and like-minded people is therefore a priority which should be recognized, even this might seem tedious and intangible as compared with practical PA management tasks.

Second, building capacity at the operational level allows for smooth implementation of mechanisms. Park managers, agency managers, local administration officers as well as NGO workers, but also local communities and individual farmers need to clearly understand the tool, i.e. contracts, associated conditions, inputs and outputs expected and agreed on, verification processes, etc. Without such shared understanding, and the people's willingness to invest energy and time, resentment and conflicts might emerge based on misunderstandings. Besides, some knowledgeable actors and organizations might be in a position to capture the scheme and its functioning. In both cases, this jeopardises the mechanism's sustainability. Investment in explaining rules, rights and responsibilities of all stakeholders, conditionnalities and processes involved is thus, again, a pre-requisite for the longer-term success of such IFMs.

### 5.2.4. Building long-term relationships: support and intermediary organisations are key

Innovative instruments such as payments for ecosystem services, environment trust funds or conservation easements are somehow complex tools which need stability, continuity in time, as well as trust and good understanding shared by all stakeholders. This necessitates organisations to link with all partners on a perennial basis so as to coordinate actions, mitigate conflicts and smooth processes and negotiations. Against this backdrop, NGOs and support agencies, providing technical assistance as well as multi- and bilateral donor money, are actually key to shape the mechanism at work (Mermet et al., 2014). In Côte d'Ivoire, German technical (GIZ) and financial (KFW) cooperation agencies have been paramount in fostering and supporting funding and management of the Taï national park since the beginning of the century. More than simply a situation where an institutional and funding innovation (here OIPR and FPRCI) suddenly triggers behaviour change, modifies processes, introduces conditionality and in turn allows for more efficient management, promoting and implementing IFMs actually requires a solid baseline shaped by already existing long-term relationships between support agencies and respective actors involved.

In Sierra Leone and South Africa, NGOs have also played, and still play, a crucial role of intermediation. RSPB has been central in linking the Government of Sierra Leone, Paramount

chiefs and local communities on the ground whereas Birdlife South Africa is absolutely necessary as an intermediate actor between the Provincial administration, the Federal administration, the Tax services and private landowners. Without these NGOs undertaking intermediary functions, and sometimes even operations themselves, innovative mechanisms would have been impossible.

Overall, innovating in funding and incentive tools requires the myriad of actors which already operate in and around protected areas and provide their expertise in cultural mediation, science, technical capacity, facilitation and brokering. The introduction of an innovative contractual approach is thus neither an absence of, nor a simplified role for, intermediaries and social-political processes. Rather, the promise lies in using players and processes differently from those of other instruments. Rather than starting new, more efficient processes, innovative mechanisms actually merely open up a space for new chains of intermediaries that may deliver better results in some cases where other instruments using other chains of intermediaries would not have done so (Mermet et al., 2014: 73-74).

## 5.3. Innovation at scale?

Many examples of interesting and innovative projects for conservation exist throughout the world (Landell-Mills and Porras 2002; OECD 2010). The question about this profusion is whether good ideas and successful setups are susceptible to work at large scale (i.e. regional or even national scale). Questions arise about pilot projects with respect to their ability to prove up to the task of addressing sustainability challenges at large scale (Pirard et al., 2009; Pirard and Billé, 2010). And this was indeed an important criterion in the analysis of the three case studies.

First, it must be noted that budgets involved in the three instruments remain limited, or very limited, when compared for instance to ODA typical budgetary flows. In all cases studied, initiatives deal with a few million UD dollars, sometimes tens of million US dollars, but they seldom reach larger orders of magnitude (e.g. see the modest potential tax benefits in RSA, or funding in Côte d'Ivoire originating from 2.5% of the French debt swap).

However, and surprisingly considering above observations, all three instruments seem able to cover, at least partly and potentially, conservation needs at regional or even national scale. In Sierra Leone, the GRNP represents approximately 2% of Sierra Leone total territory while in South Africa the Biodiversity Stewardship programme significantly contributes to Provincial protection objectives (in terms of surface area under protection regime). Somehow this might have been favoured by their financial modesty itself, in that it may have helped avoiding critiques with respect to conservation costs in the face of other developmental concerns in countries that indeed experience urgent sanitary, economic and educational needs.

Moreover, when zooming at the scale of the nature conservation domain in the three countries, the budget allotted, the staff dedicated as well as the governance arrangements prove significant. All three initiatives are definitely not restricted pilot projects, but conversely outstanding or even leading arrangements in the country or in the region. This therefore suggests that innovative instruments are not necessarily restricted to small scale projects.

## 5.4. Challenges and questions ahead

Although innovative tools presented succeed in funding and incentivizing biodiversity conservation at a significant scale in and around protected areas, their sustainability in the longer-term is to be questioned, and ensured. In the face of the ambitions set in Aichi biodiversity target 11, much still needs to be done on the ground to achieve effective and equitable expansion and management of protected areas, especially in Africa where PA downgrading, downsizing, and

degazettement is partly reversing the positive trend. Because these combine public and private involvement, and building on their main positive characteristics, innovative financial mechanisms can usefully contribute to this, if scaled up wisely on the continent. For this, some challenges need to be tackled first: limiting transaction costs, ensuring institutional stability, stabilizing private financial and ecosystem service markets, and finally securing capital expenditures.

### 5.4.1. High transaction costs?

All three mechanisms strongly rest upon contractual arrangements: between landowners, NGOs and public administration; between private and public donors and dedicated agencies; between donors and governments, etc. Having to elaborate and then manage so many contracts prove an important burden, for all partners. Future partners have to be looked for and approached, complex contracts and agreements have to be designed, negotiated and signed, and thereafter implementation of obligations need to be enforced and monitored. This is of course a typical feature of such arrangements, which have long since been identified by economists, who designate these costs as "transaction costs". Innovative financial mechanisms, as illustrated in Côte d'Ivoire, South Africa and Sierra Leone involve significant complexity and a high number of contracts. In South Africa, private landowners need to liaise and contract with the Provincial government, but also with SANBI and the Federal Government as well as with the Tax administration. In Sierra Leone, RSPB first signed a Conservation Concession Agreement with the Government and then a benefit-sharing agreement with all the 7 chiefdoms. Now a private company limited by guarantee has been set up to sell voluntary carbon units. For this, a joint-venture agreement has been signed with CSSL and the Government; further, a benefit-sharing agreement has been signed with chiefdoms; then additional and specific agreements had to be signed with each of the 122 forest-edge communities; and finally hundreds of agreements had to be signed with all family landowners having traditional land rights inside GRNP. Arguably, innovative mechanisms are indeed "real art", as mentioned by several practitioners and donors. Yet, art is most of the time very expensive and such tools are no exception.

*In fine*, innovation involves significant transaction costs which are to be accounted for when evaluating the efficiency of contractual arrangements designed (Williamson, 1991; Birner and Wittmer, 2004). In particular, these costs might better inform decision makers and practitioners when deciding over the boundaries of the State in PA management (Birner and Wittmer, 2004). Should the State itself fund and manage protected areas as well as enforce PA regulations? Should it be outsourced or delegated? Should joint-ventures with multiple stakeholders be prioritised? Answers to those questions will depend on all respective costs, time, effort, and investment supported, and will in turn influence the governance arrangement chosen to implement conservation activities.

In this regard, contractual arrangements, a characteristic feature of innovative financial mechanisms presented here, should not be ruled out because of their significant transaction costs. Indeed the latter should be assessed in the face of, and in comparison with, transaction costs that arise or would arise in alternative organisations of action (Birner and Wittmer, 2004). First, it remains to be seen whether contractual arrangements raise higher transaction costs that those which would be generated by more traditional arrangements. On the one hand the management burden is not necessarily lighter if action is organised solely by means of public administration, as monitoring public servants' real activities is difficult; on the other, incentives to deliver results are weaker in public administration. Second, transaction costs involved in designing innovative mechanisms are primarily supported during the project's starting phase. Hence, whereas this might be a significant burden in the beginning, this will dramatically decrease during the on-going phase, when results from the innovation (conditionality, incentives, monitoring) become tangible. In the mid to longer term, such mechanisms may be cost-efficient.

### 5.4.2. Institutional stability is key

Both the combination of different stakeholders (public, private, NGOs) and complex contractual arrangements necessitate institutional stability. Governance of such innovative instruments indeed requires continued political willingness and support as well as continuity in rules, regulations and legal framework. Agreements by which shared PA management responsibilities and incentives are agreed on and clarified need to be legitimized and internalized by strong institutions. As exemplified in the Sierra Leone case, when organisational setups have been arranged *ad hoc* for the project and are not yet fully consolidated into national institutions, instability potentially generated might jeopardize conservation. By contrast, the coordination of public and private protected areas within South Africa's official biodiversity institutions as well as the funding and implementing public-private system in Côte d'Ivoire are salient counter-examples; however this does not suffice to ensure political support and administrative involvement in the longer-term. Tax deductions granted by the South African administration still depend on political will at the Federal level while public support for the Ivorian PA network remains volatile. Whether or not those mechanisms could be permanently entrenched in law, with no possible provision for regression, is an important issue to be seriously investigated, if one aims at scaling up these tools.

### 5.4.3. Markets might be unpredictable

A number of innovative financial mechanisms, as illustrated in Sierra Leone and Côte d'Ivoire, are based on funds generated through markets at the national or global level. Rationale is here to limit the project's funding "boom and bust" cycle and be financed sustainably beyond the donor phase. Yet, mobilizing markets, be they financial markets, voluntary carbon markets of biodiversity banking markets, might substitute donor money's erratic and finite nature with markets' unpredictability. The latter should not be under-estimated before scaling up innovative conservation tools.

Without a binding compliance mechanism at the global level, voluntary carbon markets remain the sole possibility to sell carbon units generating funds for biodiversity conservation in and around protected areas. But a recent report by the Forest Trends' Ecosystem Marketplace on State of Forest Carbon Markets indicated a total market value of only USD 216 million for forestry offsets in 2012 (Peters-Stanley et al., 2013). Similarly, Simonet et al (2015) show that carbon markets are currently fragmented and limited. Prices of voluntary carbon units (VCU) are low. Therefore, the number of REDD+ projects has been decreasing since 2010 while their business model increasingly displays low dependence on carbon revenue.

Besides, despite Credit Suisse's recent estimates (2016), conservation finance, especially for-profit funds, will not dramatically thrive in the near future. According to Dempsey and Suarez (2016), capital flowing into market-based conservation will thus remain small, illiquid, and geographically constrained. For some, easements, water credits, and carbon are not large fungible market revenue streams and thus cannot be considered "plain vanilla opportunities" (NatureVest and EKO Asset Management Partners, 2014). As per financial markets, the 2008 crisis and current low interests limit possibilities to generate significant returns. In this regard, environmental trust funds (ETFs) remain either financially constrained, or exposed to greater risks. Furthermore, most ETFs' capital inflows actually come from public sources, especially debt-for-nature swaps. As opportunities for the latter will decrease with the changing debt situation in Africa, the capacity to leverage additional private capital will be crucial in the future; yet it remains uncertain (Fétiveau et al., 2014).

All this calls for further combination in public and private involvement, in order to attract different sources of funding, diversify risks, and increase the stability and predictability of finance flows to conservation.

### 5.4.4. Are capital expenditures structurally underfunded?

Generating predictable and stable finance to fund PA recurrent operating expenditures was mentioned as a noticeable strength of innovative instruments. This, in turn, raises questions related to funding PA capital investments, when and where these are needed for conservation.

Here, it seems that little was so far achieved, as for instance illustrated in the Ivorian case, where investment as well as community socio-economic measures prove difficult to fund. And indeed under-equipment of conservation is a challenge that can be observed in many aspects of the initiatives under examination. Again, this clearly illustrates the need for a proper, effective and solid combination of partners and action, so that governments, with help of Official Development Banks (ODBs), can and will actually play this role.

## 5.5. References


Barzelay, Michael. 2001. The New Public Management - Improving Research and Policy Dialogue. Wildavsky Forum Series. University of California Press, Berkeley and Los Angeles, California, USA.

Birner, R., Wittmer, H., 2004. On the 'efficient boundaries of the state': the contribution of transaction-costs economics to the analysis of decentralization and devolution in natural resource management. Environment and Planning C: Government and Policy 22(5), 667-685.

Borrini-Feyerabend, G., Dudley, N. Jaeger, T., Lassen, B., Broome, N.P., Phillips, A., Sandwith, T., 2013. Governance of Protected Areas: From understanding to action. Best Practice Protected Area Guidelines Series 20, IUCN Gland, Switzerland, xvi + 124p.

Credit Suisse and McKinsey, 2016. Conservation Finance. From Niche to Mainstream: The building of an Institutional Asset Class. Credit AG and McKinsey Center of Business and Environment.

Dempsey, J., Suarez, C. D., 2016. Arrested Development? The Promises and Paradoxes of "Selling Nature to Save It. Annals of the American Association of Geographers 106(3), 653-671.

European Commission, 2015. Larger than Elephants. Inputs for an EU strategic approach to wildlife conservation in Africa – Synthesis. European Commission, Directorate-General for International Cooperation and Development, Brussels.

Ferlie, E., 1996. The New Public Management in Action. Oxford University Press, Oxford, UK.

Fétiveau, J., Karsenty, A., Guingand, A., Castellanet, C., 2014. Etude relative aux initiatives innovantes pour le financement de la biodiversité et l'identification des mécanismes à fort potentiel. Report for the French Ministry of Foreign Affairs and International Development, Paris.

Hicks, N., Kubisch, A., 1984. Cutting Government Expenditure in LDCs. Finance and Development 21 (3): 37.

Landell-Mills, N., Porras, I.T., 2002. 'Silver Bullet or Fools' Gold? A Global Review of Markets for Forest Environmental Services and Their Impact on the Poor. Instruments for Sustainable Private Sector Forestry Series, International Institute for Environment and Development, London.

Lapeyre, R., Hartanto, H., Pirard, R., 2015. Designing Incentive Agreements for Conservation: An Innovative Approach. TNC, IDDRI & CIFOR, Jakarta, Indonesia.

Laurans, Y. Leménager, T., Schéhérazade, A. 2012. Payments for Ecosystem Services - from Theory to Practice, What Are the Prospects for Developing Countries? A Savoir 7, French Agency for Development, Paris, France.

Marshall, G.R. 2008. Nesting, subsidiarity, and community-based environmental governance beyond the local level International, Journal of the Commons 2(1), 75-97.

Mermet, L., Laurans, Y., Leménager, T., 2014. Tools for what trade? Analysing the Utilisation of Economic Instruments and Valuations in Biodiversity Management, A Savoir, n°5, Agence Française de Développement, Paris, 344 pages.

Mookherjee, D., 2006. Decentralization, Hierarchies, and Incentives: A Mechanism Design Perspective. Journal of Economic Literature XLIV, 367-390.

NatureVest, EKO Asset Management Partners. 2014. Investing in conservation: A landscape assessment of an emerging market.

OECD, 2010. Paying for Biodiversity: Enhancing the Cost-Effectiveness of Payments for Ecosystem Services. OECD Publishing, Paris.

Peters-Stanley, M., Gonzalez, G., Yin. D., 2013. Covering new ground: State of the forest carbon markets 2013. Ecosystem Marketplace, Washington, DC.

Pirard, R., Billé, R., 2010. Payments for Environmental Services : A Reality Check (Stories from Indonesia. Iddri Working Paper 03/10. IDDRI, Paris.

Pirard, R., Billé, R., Sembrès, T., 2009. Payment for Ecosystem Services : Responding to Challenges of Large-Scale Implementation. Working Papers. IDDRI, Paris.

Simonet, G., Karsenty, A., Newton, P., de Perthuis, C., Schaap, B., Seyller, C., 2015. REDD+ projects in 2014: an overview based on a new database and typology. Les Cahiers de la Chaire Economie du Climat, Information and debates Series 32.

Williamson, E.O., 1991. Comparative economic organisation: The analysis of discrete structural alternatives. Administrative Science Quarterly 36 (2), 269-96, in: Williamson, O.E., Masten, S.E. (Eds.), 1999. The Economics of Transaction Costs. An Elgar Critical Writings Reader, Cheltenham, UK and Northampton, MA, USA, 101-128.

Wunder, S., 2005. Payments for Environmental Services: Some Nuts and Bolts. Occasional Papers. Center for International Forestry Research, Indonesia.