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PRESERVING BIODIVERSITY

THE PRIVATE SECTOR IN ACTION

PROPARCO
GROUPE AGENCE FRANÇAISE DE DÉVELOPPEMENT

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PROTECTED AREAS | STRATEGY | PARTNERSHIPS

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SUMMARY

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Director of the Ecological Transition and Natural Resources Management Department, AFD

Nature's services – food, economic, social – are essential to our societies, yet they have declined significantly with the destruction of biodiversity and the situation is rapidly worsening. This is evidenced by the invaluable work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). The private sector and its lines of action have unfortunately contributed to this situation.

Private companies, which we more specifically focus on in this issue of the *Private Sector & Development* review, are emerging and developing in response to the needs of society in often fast-growing economies. They have specific organizational, strategic and economic methods that need to be fully understood in order to identify courses of action for them to reduce their impacts on biodiversity (and the climate), while fulfilling their mission. This includes developing services that make a positive contribution to biodiversity conservation or that involve them in actions to restore biodiversity for the benefit of all. They also need to improve their performance. In short, these private companies need to move resolutely towards an activity with benefits for biodiversity in the interest of people and in their own best interest.

1. Reduce the negative impacts, 2. Protect biodiversity, 3. Restore its fabric and functions. The private sector must find its place in this strategic triad which serves as a compass for environmental action and sustainable development. To make further progress, there is an urgent need to scale up and capitalize on what works and what does not work so well, with specific criteria and analyses. A real change will only come about through collective action by the private sector, governments, regulators and citizens.

Private companies play a major role. This role will very much depend on their capacity to make a commitment alongside public players, civil society and the scientific community. These commitments, negotiations and potential positive changes are opportunities for companies, their investors, citizens and the planet. Their achievements raise crucial and difficult questions, which this issue of the *Private Sector & Development* review aims to illustrate without, of course, providing all the answers.

For over ten years, AFD Group has been building its understanding of issues related to conserving, restoring and developing biodiversity. They are central to its commitments, in convergence with its ambitions to be a Group 100% aligned with the Paris Agreement. By 2025, it aims to earmark over EUR 1bn a year to directly support biodiversity conservation and an effective greening of all its sectors of operation, in particular in agriculture, cities, infrastructure and social sectors.

Like all development finance institutions, PROPARCO is addressing this urgent need. Reducing environmental impacts is already central to its project appraisal process. The only operational way ahead for the future is to take things further towards restoring and developing biodiversity through a pro-nature entrepreneurial activity with strong social benefits. This needs to be built in partnership.

One of the major challenges of the 21st century!

Yann Alix
Executive Director, Fondation Sefacil

Yann Alix is a senior manager with the "Darwinian" consulting firm of Abington Advisory, and Executive Director of Fondation Sefacil, a strategic and forward-looking think tank specialising in the maritime, port and logistics sectors. Yann founded and directs the Les Océanides and Afrique Atlantique collections published by Sefacil Foundation.

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Following an international career where he was involved in rural development projects, Sébastien Balmisse first encountered Kaoka in 2010 in Sao Tomé, while he was working on a project to revive agricultural sectors supported by Agence Française de Développement (AFD). He has been coordinating Kaoka's cocoa programs since 2013.

Pierre Carret
Grant Director, Critical Ecosystem Partnership Fund

Pierre Carret, is an agricultural engineer. He has been Grant Director at the Critical Ecosystem Partnership Fund (CEPF) for the past 10 years, where he has liaised with civil society environmental organizations in more than 30 African and Caribbean countries.

Wassa Cisse
Investment Analyst, Bestseller Foundation

Wassa Cisse is an investment analyst at the Bestseller Foundation. She aspires to create systems and models to make conservation efforts more financially sustainable and impact-oriented across the African continent. Hence, her work with the Foundation.

Lori Anna Conzo
Global Biodiversity Lead and Senior Environmental Specialist, International Finance Corporation

Lori Anna Gonzo possesses nearly 20-years' experience specializing in the development of mitigation and management strategies to address biodiversity-related risks and impacts related to private sector developments in emerging market countries globally.

Guy Deberdt
Chief Executive Officer, Kaoka

Guy Deberdt took over the company (alongside his sister, Maria Deberdt) in 2012 from André Deberdt, the founder of Kaoka and a pioneering player committed to the development of organic and fair trade agricultural production.

Steven Dickinson
Biodiversity lead in Total's Environment division, Total

Steven Dickinson is tasked with devising Total's biodiversity policy, objectives and roadmap together with implementation support. In 2018, he oversaw Total's accession to the act4nature initiative, culminating in a series of public commitments made by the Group. In 2020 Steven spearheaded the Group's Biodiversity Ambition programme together with its related commitments.

François-Xavier Dugripon
Energy expert, Société des experts bois

François-Xavier Dugripon is an expert in energy markets, networks and concessions. He helped to structure Cofely's supply of biomass, making it France's biggest purchaser of wood fuel, before heading up Engie's biogas development programme. He is currently Director of Strategy and Development for the Lamy Group.

Luthando Dziba
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Luthando is the Managing Executive responsible for the Conservation Services Division at South African National Parks (SANParks). He also serves as the Co-chair of the Multidisciplinary Expert Panel of the UN Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES).

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Innovative Finance Lead, University of Cape Town - Bertha Centre for Social Innovation

As the Innovative Finance Lead at the Bertha Centre, Tine Fisker Henriksen manages multiple projects focused on strengthening the impact investing sector in South Africa and Africa as a whole. Tine also holds a role as investment manager with the Bestseller Foundation.

Emmanuel Groutel
Expert in timber and forests

Emmanuel Groutel is an expert in the forestry management sector and the international timber economy. He acts as a consultant to the FAO, WWF and the European Union and he is also a research fellow at Caen University (IAE). He harnesses his love of forests and timber to an approach that combines pragmatism and ethics.

Simon Hulka
Biodiversity consultant, International Finance Corporation

Simon Hulka is working within the ESG Sustainability Advice & Solutions Department of the IFC principally advising on the effects of wind energy on birds and bats and helping to solve wind-wildlife issues for IFC-financed projects globally.

Coline Jacobs
Head of Sustainable Development, Veolia

Coline Jacobs has been spearheading the Sustainable Development division's commitment to protecting ecosystems and biodiversity at Veolia's Head Office since 2014. Coline chairs the "Enterprise and Biodiversity" working group set up by the French Committee of the International Union for the Conservation of Nature (IUCN).

Jean Labuschagne
African Parks

For the past 8 years, Jean has been working with not-for-profit African Parks, and currently serves as their Director for Conservation Development and Assurance. Prior to her current role, Jean has also been based in Zakouma National Park in Chad, and spent 4 years in Garamba National Park, in the Democratic Republic of Congo, as Special Projects Manager.

Delphine Malleret King
Executive Director, The Long Run

Delphine Malleret King relocated to the UK to take up her position as CEO of The Long Run in 2016. Delphine's work focuses on marine and terrestrial conservation, community engagement and socio-economic impact monitoring for local, national and international organisations.

Patricia Mani
Group VP Environmental & Societal Expertise, Total

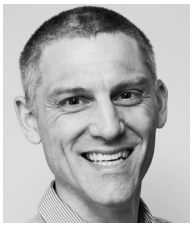
Patricia Mani is a trained agronomist and Group VP for Environmental & Societal Expertise in Total's HSE division. She is in charge of setting and overseeing the Group's Environmental & Societal performance objectives. Patricia is also Group VP for Crisis Management, tasked with ensuring that Group entities are prepared for all manner of crises.

Serge Morand
Ecologist and biologist, CNRS/CIRAD

Serge Morand is a researcher for the CNRS and CIRAD. He is a health ecologist and parasitologist focused on the impacts of global changes (i.e., climate and land use) on the links between biodiversity, health and society in Southeast Asia. He has published articles and books on biodiversity conservation, the ecology of interactions and emerging infectious diseases.

Frank Nagel
Executive Director, Rabo Partnerships

As Executive Director at Rabo Partnerships, at Rabobank, he leads the impact finance initiatives in emerging markets. In an effort to induce system change in the world's food chains impact finance and especially blending public and private funds can be regarded as a vital instrument for reaching primary farmers in emerging markets and encouraging the adoption of sustainable agricultural practices.



Edward Pollard
Technical Director, The Biodiversity Consultancy

Edward Pollard is a specialist in Critical Habitat assessment, biodiversity risk profiling and net positive impact evaluation. Edward is a forest ecologist and has spent a good part of the past 20 years in the field, in Asia and the Tropics, with a focus on forest conservation.

Amos Thiongo
Regional Director, Conservation Finance Africa at Conservation International

Amos Thiongo works with Conservation International (CI), in Kenya. He oversees CI's conservation agreements work across Africa. His work has focused on pathways to realizing sustainable natural resource management, through working with local communities, the private and public sectors, and civil society.

Lianne van Leijsen
Responsible for sustainable business development at Rabobank Group

Lianne van Leijsen focuses on sustainable finance solutions and new product development to support sustainable transitions in the food and agribusiness sector. She has extensive banking experience working with large global corporates in the food and agribusiness sector over the past 25 years.

Samir Whitaker
Biodiversity Technical Specialist, Fauna & Flora International

Samir Whitaker' work has focused on helping companies screen and manage environmental risk, and developing action plans such as biodiversity action plans and offsets strategies to meet the requirements of lenders, such as the International Finance Corporation.

Mark Zimring
Director, The Nature Conservancy

Mark Zimring leads The Nature Conservanvy's Large Scale Fisheries program focusing on building sustainable fisheries and improving socio-economic returns for coastal communities. Mark previously worked at Lawrence Berkeley National Laboratory and Deutsche Bank Securities.

Mathieu Auger- Schwartzenberg
Task Team Leader Forests-Biodiversity, AFD

Mathieu Auger-Schwartzenberg has been working for seventeen years to promote a more ethical and sustainable management of the tropical forests. He holds a MSc in tropical ecosystems management from Paris 12 University. He established the FSC (Forest Stewardship Council) regional office for Congo Basin in Brazzaville. Mathieu starts working at French Development Agency in February 2019, and coordinates, amongst others, sustainable land-use programs in Republic of Congo, Democratic Republic of Congo and Myanmar.

Tiphaine Leménager
Biodiversity Project Manager, AFD

Tiphaine Leménager is an agronomist and holds a Ph.D. in Environmental Management Science. For over 20 years, she has been working on gaining an understanding of issues linking biodiversity and societies. Concerned by the difficulty in linking development issues and the preservation of the environment, she joined Agence Française de Développement in 2008, where she facilitates financing for projects that are conducive to biodiversity conservation in countries in the South.

Magali Mayssal
Investment Analyst, Proparco

Magali Mayssal joined Proparco's Infrastructure Division in 2018 and has since been contributing to structuring project financing in the energy and telecoms sectors in Africa. Magali previously worked in Proparco's regional office in Johannesburg, where she was responsible for project origination in South Africa and the Indian Ocean. She graduated from Toulouse Business School and holds a specialized Master's in Project Finance from the École des Ponts.

Chloée Michelet
Environmental and Social (E&S) specialist, Proparco

Chloée Michelet joined Proparco in November 2019 as an E&S specialist in the A2D Department (Sustainability and Corporate Governance), after spending 8 years in an international consulting firm. She works on a daily basis on assessing the E&S risks and opportunities of projects, including issues related to biodiversity, in the context of Proparco's financing. She trained as an agronomist and is passionate about understanding issues linking biodiversity and anthropogenic activities.

Ghislain Rieb
Investment Officer, AFD

Ghislain Rieb joined AFD in 2005 after a career in the Ministry of Equipment and Ministry of the Environment. He works on environmental and development issues. He was initially the biodiversity and climate change focal point at the Secretariat of the FFEM and subsequently held positions as an officer and manager in the network (Maputo, Myanmar and South Africa). His career has allowed him to develop extensive knowledge on biodiversity issues in Southern Africa.

Nature Positive: turning biodiversity from a risk into an opportunity

Edward Pollard, Technical Director, The Biodiversity Consultancy

Globally, the natural world on which people and economies depend is in crisis. Species are declining, biodiversity loss and novel diseases, such as Covid-19, all pose business risks, but the renewed international focus on nature and biodiversity also highlights emerging opportunities for businesses to establish a leadership role and pursue positive impacts for the natural world. The combination of risk management and opportunities for positive action underpin the business case for integrating biodiversity into decision-making.

The evidence is clear. Earth is in the midst of a biodiversity crisis. Studies from groups as diverse as WWF[1], IPBES[2] and the World Economic Forum[3] have documented this. Animals and plants across the globe, from lions in Africa to farmland birds in Europe[4], are becoming rarer due to human-induced threats.

The world's economy depends on functioning ecosystems[5], yet land-use change and direct exploitation, such as industrial fishing and pollution, are taking their toll on our natural world. As ecosystems are encroached upon, the risk of encountering novel diseases such as COVID-19 increases. There is still time to reverse this trend, but to 'bend the curve'[6], individuals, governments and the private sector all need to play their part.

> *"The world's economy depends on functioning ecosystems, yet land-use change and direct exploitation, such as industrial fishing and pollution, are taking their toll on our natural world."*

1 ▸ https://livingplanet.panda.org/en-gb/about-the-living-planet-report
2 ▸ https://ipbes.net/global-assessment
3 ▸ https://www.weforum.org/reports/the-global-risks-report-2020
4 ▸ https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu
5 ▸ https://www.swissre.com/media/news-releases/nr-20200923-biodiversity-and-ecosystems-services.html
6 ▸ https://theconversation.com/how-to-reverse-global-wildlife-declines-by-2050-146041

As awareness of the biodiversity crisis grows, so does society's expectation and appetite for change. The year 2020 was billed a 'superyear' for biodiversity, with a series of high-level meetings planned to set the nature conservation agenda for the next decade. A zoonotic disease has disrupted this, highlighting the risk of mismanaging biodiversity. Events are now planned for 2021, leading up to the all-important Convention on Biological Diversity conference (CBD COP 15) in China.

But the pandemic has not halted the ambition for change, and leaders in the private sector recognise the urgent need to respond. In 2019 and 2020, new initiatives and approaches to corporate interaction with the natural world proliferated. Some are sector specific, such as The Fashion Pact and OP2B; others, such as Business for Nature and the Science Based Targets Network, span sectors. But why should the private sector be involved, and what can it do?

AN ARTICLE BY
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GOOD FOR NATURE, GOOD FOR BUSINESS

Understanding and managing a company's impact on the natural world is good for business. There has been growing awareness of this by the private sector over the past 30 years: the field of 'business and biodiversity' has grown and become more sophisticated. Goals have become more ambitious, evolving from single issues such as 'dolphin-friendly tuna' to broader commitments like zero-deforestation supply chains[7] and net positive impact[8].

There is a strong business case[9] for integrating biodiversity into decision-making. Companies that have adequately considered their environmental impacts have seen risks transformed into opportunities, with improvements to reputational standing, gains to competitive advantage – through approval and acceptance from the public, governments and financial institutions – and securing a place in the market.

The business case stems from the following risks: regulation and compliance; reputation; competitiveness and marketing; and reliance on nature. Non-compliance with regulations and laws could lead to restricted access to resources and litigation concerning adverse impacts on biodiversity. Being associated with adverse biodiversity impacts could affect reputation, leading to divestments and a negative effect on brand and share value. Embracing biodiversity also enhances competitiveness and marketing, determining the choices of investors and consumers, production costs, stakeholder confidence and employee well-being. A biodiverse natural environment provides ecosystem services[10] – pollination of crops by wild insects, coastal vegetation providing protection from storms, and a regular water supply – which businesses depend on.

Addressing these risks is increasingly driving business: for example, more countries[11] are enacting stricter regulations to mitigate impacts or mandate net gain. Recent shareholder action prompted Procter & Gamble to phase out deforestation[12] in their supply chain, and lenders are providing preferential loan conditions[13] for meeting sustainability goals.

7 ▸ https://supply-change.org/#remove
8 ▸ https://onlinelibrary.wiley.com/doi/full/10.1002/bse.2379
9 ▸ https://www.weforum.org/reports/new-nature-economy-report-series
10 ▸ https://www.wri.org/publication/corporate-ecosystem-services-review
11 ▸ https://portals.iucn.org/offsetpolicy/
12 ▸ https://www.nrdc.org/experts/shelley-vinyard/investors-directive-pg-stop-driving-deforestation
13 ▸ https://www.olamgroup.com/news/all-news/press-release/olam-secures-us-dollar-250-million-sustainability-linked-loan.html

> *Recognition that the private sector should not just do no harm to the environment but be part of the solution is influencing the development of a new global biodiversity framework for conservation.*

BEING PART OF THE SOLUTION

Society expects companies not to use slave labour, and to ensure the health and safety of their workforces. Expectations are increasing that the private sector should at least have a neutral, but ideally a positive impact on the environment.

Recognition that the private sector should not just do no harm to the environment but be part of the solution is influencing[14] the development of a new global biodiversity framework for conservation. Due in 2021, the framework[15] is likely to state explicitly that private sector actors should play a part in helping nation states meet their global commitments.

So how can businesses live up to these new expectations? To be part of the solution, to be nature positive[16], companies can do as follows.

- **Lead.** Join other businesses worldwide; add their voice to global initiatives advocating positive change. Help engage and influence policymakers[17] to adopt ambitious policies on nature; demonstrate their ambition, and showcase plans and actions at global events. To be successful, awareness of the issues may need to be raised, and a firm commitment is required. Finally, human and financial resources should be committed to achieving a bold transformation.
- **Understand** biodiversity risks, dependencies, and opportunities associated with projects and investments. This includes assessing value chains to identify biodiversity impacts related to sourcing – including transparency about origins – and operations, as well as dependency on biodiversity. Risk assessment is a valuable tool for focusing on resources that have the biggest impact on nature, or which offer the simplest ways to reduce negative impacts and identify potential positive contributions. Companies with significant direct footprints need to understand their assets, and how they interact with biodiversity. Global data[18] and tools[19] exist to support these steps.
- **Develop** simple and clear biodiversity targets that demonstrate commitment, and align with global standards for doing business and goals for sustainable development – one way is to set a science-based target for nature (SBTn). A valuable framework for categorising actions and setting targets is the Mitigation Hierarchy (see Box). This framework, in use for a decade in some sectors (notably the extractive industries), is central to SBTn.

14 ▸ https://conbio.onlinelibrary.wiley.com/doi/10.1111/conl.12690
15 ▸ https://www.cbd.int/article/zero-draft-update-august-2020
16 ▸ https://www.thebiodiversityconsultancy.com/wp-content/uploads/2020/09/Nature-Positive-Insight.pdf
17 ▸ https://www.businessfornature.org/advocate
18 ▸ https://www.ibat-alliance.org/
19 ▸ https://ec.europa.eu/environment/biodiversity/business/assets/pdf/B@B_Assessment_biodiversity_accounting_approaches_Update_Report_1_19Nov2018.pdf

- **Transform** targets into actions, using metrics and indicators to measure biodiversity impacts and dependencies, and evaluate and adapt practices to stay on track. Piloting approaches within different parts of a company will ensure action plans are fit for purpose, and can increase understanding and support from key staff. When the targets are clear, disclose them. Be proud to play a part.
- **Partner** with civil society, communities and other stakeholders who can help in understanding impacts and dependencies – and who may be essential in implementing effective actions.
- **Implement**. Finally, the measures need to be implemented, and progress reported.

The natural world should no longer be viewed simply as a barrier to development, as a risk. Businesses and economies depend on nature. Just as society expects companies to provide financial and social returns, they can and should be a positive force for the natural world. The tools exist to support this journey and to transform businesses – and the time to act is now.

FOCUS
THE BIODIVERSITY CONSULTANCY

The Biodiversity Consultancy (TBC) provides strategic, technical and policy expertise in biodiversity and ecosystem services for the private, public and NGO / science sectors. Based in the UK and working globally, TBC is at the forefront of developing pragmatic and innovative approaches to managing biodiversity risks and opportunities. TBC supports companies in a wide range of sectors including extractive industries, renewable power generation, and consumer goods.

The Mitigation Hierarchy – A tool for delivering private sector biodiversity risk management

The Mitigation Hierarchy is an effective tool for projects and companies aiming not to have an overall negative impact on biodiversity, or on balance, to produce a net gain. Companies may already be carrying out actions that can be mapped against the Mitigation Hierarchy's sequential steps of Avoid, Reduce, Restore and Regenerate, and Transform.

Avoid the impact as much as feasible, for example, by choosing a different location, process or timescale. Avoidance is often the most effective and least expensive mitigation action, but requires biodiversity to be considered at the early stages of a project or transaction.

Reduce the impact where avoidance is not possible. Effective reduction can eliminate some negative impacts.

Restore and regenerate where impacts cannot be avoided or fully reduced. This could include restoring natural habitat on the least productive land or revegetating areas occupied by temporary infrastructure. Regenerative measures on working lands can enhance biodiversity and ensure system resilience.

Transform the way business interacts with nature. This could include working to establish the overall enabling conditions for the success of mitigation actions, and for catalysing broader positive change for biodiversity: for example, by pooling data between actors in a landscape, or joining industry bodies to drive change across a sector.

The Nature Conservancy: using technology to protect tuna stocks

Mark Zimring, Director, The Nature Conservancy

Climate change, pollution, and overfishing are putting enormous pressure on the Pacific. Against this background, the eight island nations that make up the Nauru Agreement (PNA) – which controls 70% of tuna resources in the Western and Central Pacific – want to sustainably commericalize their tuna stocks, but face challenges to do so. To address these barriers, The Nature Conservancy is partnering with them – by conducting research, rolling out electronic monitoring technology, and informing environmental policy.

AN ARTICLE BY
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Mark Zimring leads The Nature Conservanvy's Large Scale Fisheries program focusing on building sustainable fisheries and improving socio-economic returns for coastal communities. Mark previously worked at Lawrence Berkeley National Laboratory and Deutsche Bank Securities. He holds a BA in Economics from the University of Pennsylvania; MPP and MS from the University of California, Berkeley.

Accustomed to chaos, it is a stunning ecosystem that has proven remarkably resilient. But today, a combination of climate change, pollution, and overfishing is putting so much pressure on the Pacific that even the most adaptable species are struggling to survive.

For example, the Western and Central Pacific produces 60% of the world's tuna – nearly 3 million metric tons, worth almost $7 billion each year. But, globally, over a third of tuna stocks are overfished or are at risk of being overfished.

A crash in this final stronghold of tuna would send the global seafood market reeling. Decreased supply would also take an enormous toll on Pacific economies, especially the parties to the Nauru Agreement (PNA). The eight island nations that make up the PNA control 70% of the tuna caught in the Western and Central Pacific, and several count on fishery revenues for the majority of their national non-aid income.

The effects of unsustainable fishing are rippling across the food web, with devastating results. Longline tuna vessels lay waste to innumerable sharks, sea turtles and seabirds each year – which could throw the entire ecosystem out of balance. A recent study, using data collected by the Palau government, found that one-third of the catch of local pelagic longline tuna vessels was made up of unwanted species.

HIGH TECHNOLOGY APPLIED TO FISHING TECHNIQUES

Regional governments and fishing companies want to operate sustainably, but need a viable alternative to the existing, harmful practices. Addressing this need, The Nature Conservancy – working with local partners – is driving innovation by conducting research, rolling out electronic monitoring technology (see box), and informing environmental policy.

The region lacks the critical science and compliance information needed to roll out more sustainable fishing rules and to ensure adherence. Currently, only 2% of the region's longline tuna vessels have independent on-board monitoring, and illegal, unreported and unregulated fishing largely goes unchecked. Aware of what is at stake, governments are working toward better

management and monitoring solutions in their tuna fisheries.

To fill this gap, The Nature Conservancy is partnering with industry and governments to scale the use of electronic monitoring systems aboard the region's fishing vessels. Using a combination of on-vessel technology to collect fishing data, the electronic monitoring systems provide detailed information on tuna catches, interactions with at-risk species like sharks and turtles, and other on-board activities like safe-working conditions.

These tools offer actionable data that will help reduce poaching, make Pacific longline tuna fisheries sustainable – and stabilize the ocean ecosystem. In addition to increasing accountability, electronic monitoring makes it easier to collect core scientific data and to assess ecosystem health, ultimately helping PNA countries develop smarter regulations.

FOCUS
THE NATURE CONSERVANCY

The Nature Conservancy (TNC) is a global conservation organization dedicated to conserving the lands and waters on which all life depends. Guided by science, TNC creates innovative, on-the-ground solutions to our world's toughest challenges so that nature and people can thrive together. Working in 72 countries and territories, we use a collaborative approach that engages local communities, governments, the private sector, and other partners.

INCREASING GLOBAL COMMITMENTS TO ELECTRONIC MONITORING

In October 2018, the Federated States of Micronesia announced a shift to 100% transparency for its globally-significant tuna fishery through electronic monitoring, and challenged its fellow PNA members to follow suit through the Technology for Tuna Transparency Challenge. And in April 2019, all PNA members committed to the challenge. This is a win of historic proportions. What is more, commitments did not stop in the Pacific. In 2020, the Seychelles became the first Indian Ocean country to join the effort. Successes, lessons learned, and best practices from these projects are now being scaled to other areas.

Faced with a direct impact on profit, leading fishing companies understand their success lies in balancing profitability and sustainability. The industry has seen a proliferation of dock-to-plate transparency and traceability tools in recent years – all with varying degrees of success. Companies need granular information related to at-sea activities to verify their seafood products have been harvested legally, sustainably and without labor abuses – confirming that crews are not being subjected to unethical, unsafe working conditions, that tunas are not being high-graded, and that at-risk species brought in as bycatch are handled and released appropriately – and electronic monitoring is enabling collecting this information at scale.

Companies are seeing the benefit of moving to sustainable management models, recognizing the business imperative to ensure fish stocks are available for future harvests – and they are making their commitments known among their peers. Numerous global seafood suppliers have publicly committed to achieving 100% electronic monitoring, and with increasingly ambitious timetables.

These changes go well beyond company statements and lofty goals, to changes in industry behavior. Electronic monitoring data provides a powerful resource to drive accountability throughout seafood supply chains: it has been leveraged to drive behavior change from onboard vessels to within boardrooms. With new private sector initiatives in the seafood catch sector and supply chains, the data is helping the industry to walk a fine line.

Global fisheries are in trouble, yet the reality is that the industry has been flying blind. With technology onboard fishing vessels and robust policy initiatives and market incentives, transparency in the tuna industry is at hand. ■

Electronic Monitoring in Fisheries

Electronic monitoring (EM) entails onboard video cameras, GPS (location tagging), and sensors to automatically track catches 24/7 on fishing vessels. It replaces a single observer, noting in writing what species are caught and when. With EM, someone still has to review the footage, but much more data, which is more granular, is gained than is typical with observer monitoring.

Restored rangelands enhancing prosperity in Southern Africa

Amos Thiongo, Regional Director, Conservation Finance Africa at Conservation International

In the drylands of Southern Africa, land degradation is increasing, reducing nature's ability to regenerate pastures to sustain livestock and wildlife. Unaddressed, degraded rangelands can become "wastelands" that yield few ecosystem services, driving communities into poverty. This jeopardizes conservation efforts and tourism. Addressing these issues requires a holistic solution comprising grazing systems informed by traditional knowledge, science and the power of markets.

AN ARTICLE BY
AMOS THIONGO
Regional Director, Conservation Finance Africa at Conservation International

Amos Thiongo works with Conservation International (CI), in Kenya. He oversees CI's conservation agreements work across Africa. He has over 15 years' experience in facilitating multi-stakeholder processes to address local socio-economic and environmental challenges. His work has focused on pathways to realizing sustainable natural resource management, through working with local communities, the private and public sectors, and civil society. He is a firm believer in market-based systems holding enormous potential to drive sustainability.

Livestock is an important part of the GDP of Southern African countries and is critical for the survival of livestock-owning households. Recognizing this, conservationists are increasingly turning to the private sector to incentivize better grazing practices.

A motivator for private sector investment in conservation and restoration is returns. Many private sector players, through intermediaries, buy and process livestock and livestock products from communal rangelands. Conservationists have an opportunity to show participants that when these areas are properly managed, livestock productivity increases. This means that the market is assured of continued and improved supply. The impact of conservation directly translates into earnings.

WORKING WITH LOCAL COMMUNITIES

Previous examples of successful private sector engagement in the sustainable management of rangelands in the region are increasingly available. An example is Umzimvubu, in South Africa, a highly biodiverse, critically important water catchment area, which due to unsustainable livestock practices had undergone years of degradation. Conservation South Africa and other partners under the Umzimvubu Catchment Partnership Platform have been working with communities since 2015 to transition to more sustainable rangeland management. Under the Partnership, communities commit to adopting restorative, planned grazing systems; protecting wetlands; and removing invasive plant species. In return, for-profit Meat Naturally PTY organizes livestock auctions for compliant farmers, inviting buyers to the auctions and providing market access to the community. In 2019, turnover was $715,000, benefitting 1,398 families. This has incentivized communities to transition to sustainable rangeland management. Wetlands are being restored, with improved water quality and quantity; native grass cover is recovering; and the invasive wattle tree is being removed. The result is better quality pastures, with a resultant improvement in the quality of the livestock.

In Umzimvubu, NGOs play the vital role of organizing the community and helping them meet their environmental commitments. They also help communities to increase productivity and to meet quality requirements. Yet, it is the

private sector that drives sustainability. For example, the Meat Naturally auctions ensure that farmers, who previously had no direct market access, are able to earn better prices by cutting out the intermediaries.

Conservation agreements provide a transparent framework of engagement. Farmers know what is expected of them and what support they can expect from civil society partners. And private sector players get better quality livestock that has been produced under environmentally sustainable practices. Agreements are based on verified performance.

IMPLEMENTATION OF PRO-BIODIVERSITY VALUE CHAINS

In south-western Ghana, the NGO Noé supports implementing pro-biodiversity value chains. Here, the Kwabre-Tanoé Forest provides many ecosystem services to local communities and is home to exceptional biodiversity, including the Roloway monkey (Cercopithecus roloway), one of the 25 most endangered primates in the world. In order to protect this habitat, threatened by deforestation and poaching, a conservation agreement between the community organization (CREMA Ankasa-Tano) and the Savannah Fruits Company (a coconut oil trader) was signed. This conservation agreement defines the community's commitment to preserving the forest through ecological monitoring, reforestation, and compliance with organic certification standards. In turn, the Savannah Fruits Company provides technical support, buys coconuts from farmers at a fair price plus a premium, and contributes one pesewa per coconut purchased to the Community Conservation Fund. This generates $5,500 per year for the Fund, enabling the community organization to become financially self-sufficient.

In 2015, Conservation International launched the Conservation Agreements Private Partnership Platform (CAPPP) to catalyze private-sector support for biodiversity conservation and to maintain ecosystem services at important biodiversity sites. With support from the GEF Earth Fund, and in collaboration with the United Nations Environment Program, the implementing agency, CAPPP has sought to forge mutually beneficial partnerships between the private sector and local communities and landowners, who commit to conserving biodiversity, reducing land degradation, supporting climate regulation and promoting sustainable natural resource management. By 2020, a total of 1.2 million hectares of highly biodiverse area, spread across nine countries, had been enrolled in conservation agreements under CAPPP.

Following suit, AFD has funded the "Pro-nature Enterprises for the People of Southern Africa" initiative. In partnership with Conservation International and local NGOs, this collaboration will further unlock private sector support for protecting one million hectares of critical transfrontier conservation area in Southern Africa. In this model for improving rangeland management, local communities benefit from establishing supply-side relationships with private players in tourism, livestock, and related sectors. Communities commit to enhanced human-wildlife coexistence and sustainable management of their rangelands, through culturally appropriate and climate-smart livestock practices.

FOCUS
CONSERVATION INTERNATIONAL

Building upon a strong foundation of science, partnership and field demonstration, Conservation International empowers societies to responsibly and sustainably care for nature, including global biodiversity, for the wellbeing of humanity. For over 30 years, it has worked to spotlight and secure the critical benefits that nature provides to humanity. By combining fieldwork with innovations in science, policy and finance, CI has helped protect more than 6 million square kilometers of land and sea across more than 70 countries. Today, with offices in more than 24 countries and a worldwide network of thousands of partners, its reach is truly global.

CONCLUSION

An urgent need and opportunity exists to shift localized economic activities in areas important for biodiversity, from driving degradation to environmental stewardship, taking a market-based approach. The private sector in collaboration with civil society has the power to drive this shift. Economic disruptions brought about by Covid-19 present an opportunity to reset engagements between the private sector, producer communities, and civil society, to build more ecologically friendly production practices that benefit recovering communities and the nature that they depend on. ■

Zoonoses and biodiversity: do we need to rethink environmental health governance?

Serge Morand, ecologist and biologist, CNRS/CIRAD

The number of zoonosis epidemics is on the rise, fuelled by industrial farming practices, deforestation and the loss of traditional habitats. There is an urgent need to rethink health policy from a multi-disciplinary and collaborative perspective. We need a fresh approach to environmental health governance if we wish to attack both the causes and consequences of epidemics in an effective manner.

AN ARTICLE BY
SERGE MORAND
Ecologist and biologist, CNRS/CIRAD

Serge Morand is a researcher for the CNRS (French Scientific Research Council) and CIRAD (French agricultural research body). He is a health ecologist and parasitologist focused on the impacts of global changes (i.e., climate and land use) on the links between biodiversity, health and society in Southeast Asia. Serge has published articles and books on biodiversity conservation, the ecology of interactions and emerging infectious diseases.

Over the past few decades, we have witnessed an upsurge in epidemics linked to zoonotic diseases due to parasitic infections whose agents are transmitted naturally from animals to humans. Health crises are coming thick and fast and, as in the case of Covid-19, they may be accompanied by social and economic crises. There is a definite correlation between the rise in epidemics and the spectacular growth in international trade. Nevertheless, a major pandemic was foreseeable - and had been predicted. Indeed, the World Health Organisation labelled it "Disease X" and listed the potential infectious agents that could cause it, but without really exploring the socio-ecological conditions that could underpin its potential emergence. While it is important to prepare through effective bio-monitoring or by cataloguing all wild animal viruses, this is not enough to prevent the emergence of zoonoses or to make conditions in general less pandemic-friendly.

BIODIVERSITY CRISES AND ZOONOSES EPIDEMICS

The large number of zoonoses epidemics is generally correlated to the crisis in biodiversity, which is in turn being driven by industrial farming practices, deforestation and the loss of traditionally managed habitats.

Intensive farming in particular is reducing biodiversity and leading to more zoonoses. Between 1960 and 2016, the global pig population jumped from 500 million to 1.5 billion while the chicken flock grew from 5 billion to 22 billion. By reducing natural habitats to make way for productive livestock, the relentless growth in livestock farming is making it easier for microbial agents to move from animals to humans.

Deforestation and industrial crop farming are also fuelling the emergence and spread of zoonoses epidemics. Those countries most affected by the growing number of epidemics are those witnessing significant increases in deforestation or in the rate of land use conversion to cash crop plantations.

The biodiversity crisis is distorting the interactions that are essential for ensuring that ecosystems work properly and continue to provide quality ecosystem services. The disappearance of their predators and competitors reduces the regulation of natural reservoir animals, host microbes and their vectors. This in turn knocks out the ecosystem service that regulates the transmission of diseases. This leaves habitats with greatly depleted and much less complex diversity, bereft of ecological resilience as well as resilience to epidemics.

> *"The large number of zoonoses epidemics is generally correlated to the crisis in biodiversity, which is in turn being driven by industrial farming practices, deforestation and the loss of traditionally managed habitats."*

ENHANCING OUR UNDERSTANDING OF HEALTH EMERGENCIES AND CRISES

We should note from the outset that human health crises — despite being of animal origin and linked to the way in which we conceive of our relationship with nature — can unfortunately never be managed by biomedical experts alone. Here again, our experience of Covid-19 has highlighted the disconnect between how a health emergency is managed and an effective understanding of the processes that culminated in the global health crisis in the first place. If we are to be more effective, we need to step up our analysis of this disconnect and this starts by identifying three levels of involvement: biological, epidemiological and political.

Identifying the origin of an infectious agent is the task of biologists. SARS-CoV2 is actually a beta coronavirus whose natural reservoir is a species of insectivorous bat, and potentially an as yet unknown intermediate host. Research at this level ranges from virology to immunology and infectiology and helps to catalogue all potentially emerging viruses and develop new diagnostic applications and treatments.

Epidemiology, the second level of analysis, focuses on how the infectious agent is transmitted between animals, between animals and humans, and then between humans. This transmission always takes place within an ecological, social and economic context, i.e., a biodiversity crisis, trafficking in wild animals, deforestation, increase in intensive farming, urbanisation, globalisation of trade, etc. This is all about understanding how a virus that was circulating in bat populations somewhere in Asia came to be present throughout the entire human population just a few months later.

The third level of analysis is political and focuses on the management of the health crisis. It highlights how the epidemic is perceived by society as a whole, by healthcare stakeholders and by political decision-makers. Having been declared a health crisis, the epidemic generates a (bio)political response along with quarantine measures, lock-downs, screening tests and treatments. These measures will affect how we emerge from the crisis and the lessons learned as well as how to prepare for new crises. Unfortunately, each new health crisis leads to an increase in biosecurity measures to the detriment of treating the causes of the emergence and spread of the epidemics themselves.

PREPARING FOR OR AVOIDING THE NEXT ZOONOSES-PANDEMIC

FOCUS
CNRS/CIRAD

The CNRS (French Scientific Research Council) is one of the world's pre-eminent research institutions. Its scientists explore the living environment, living matter, the universe and how human societies work. CIRAD is the French agricultural research and international cooperation body that promotes sustainable development in tropical and Mediterranean regions. Thanks to partnerships with Southern countries, it produces and disseminates knowledge in support of agricultural innovation and development. The CNRS and CIRAD work hand in hand or in a joint role on a wide range of projects.

Epidemics and emerging zoonoses are a symptom of a breakdown in our relationships with both wild and domestic animals. The "One Health"[1] approach remains too focused on bio-monitoring and biosecurity, with little consideration given to the health of ecosystems (despite being sponsored by UNEP and UNESCO). The WHO-backed "Health in All Policies" approach has been insufficiently deployed, which accounts for the absence of dialogue and the dearth of inter-sector initiatives during health crises.

Revegetating our food could become a key public health objective. Dieticians tell us that replacing some animal proteins by vegetable proteins helps to reduce the incidence of cardiovascular and autoimmune disease. Reducing meat consumption will have a beneficial impact on the environment, deforestation and biodiversity loss while also reducing zoonotic health risks. Global health can then be tied back to local and regional ecological and sanitary health.

IDENTIFYING AND GOING BEYOND DISCIPLINARY AND SECTOR-BASED BOUNDARIES

A new approach to health and the environment requires identifying disciplinary and sector-based boundaries and ways of breaking them down. This means collaborative health policies devised jointly by communities of citizens, scientists and administrators within a new "Environmental-Health governance framework.

> *"Reducing meat consumption will have a beneficial impact on the environment, deforestation and biodiversity loss while also reducing zoonotic health risks."*

We need to get beyond traditional approaches to "educating" citizens, communities, practitioners and decision-makers to a shared understanding of the knowledge, representations and values adhered to by the different stakeholders. Traditional expertise needs to be replaced by cross-cutting expertise that includes both scientific know-how and forms of knowledge that draw upon the experience of people as well as that of government departments. Our ability to avoid future zoonoses-related health and social crises will depend on this new approach, which closely links health to the environment. ■

1 ▸ "One Health" is a movement created in the early 2000s that promoted an integrated, systemic and unified approach to public, animal and environmental health at local, national and global level. It is aimed at tackling emerging diseases with a risk of pandemic more effectively and is underpinned by an alliance between three UN agencies (WHO, FAO and World Organisation for Animal Health) together with certain major institutions and hundreds of scientists (source: Wikipedia, "One Health", consulted on 20/12/2020).

Developing organic fair trade sectors: the example of Kaoka

Guy Deberdt, Chief Executive Officer, Kaoka
Sébastien Balmisse, Programs and Quality Manager, Kaoka

As an SME involved in cocoa production, Kaoka can see the destructive effects of an agricultural approach with little concern for the ecosystems where it is applied. By setting up organic fair trade production chains, the company contributes to diversifying the cocoa varieties produced, actively promotes sustainable agroforestry and allows local people to make a livelihood from their crops – while combating deforestation and supporting the regeneration of ecosystems.

Uncontrolled forest fires in the Peruvian Amazon, the devastating effects of intensive banana production on soils and biodiversity in Ecuador, cocoa growing areas abandoned after several years of drought in Sao Tomé… We are seeing the environmental emergency everywhere and it will inevitably eventually have an impact on our economic model.

Players in the cocoa sector also have a responsibility in this situation. Over the last decades, the sector has developed based on a "pioneer fronts" approach, especially in West Africa. This has led to massive deforestation and a substantial erosion of biodiversity in this part of the world.

In response to this situation, Kaoka has decided to do what it can as a French SME by taking action on several fronts to preserve the ecosystems and natural resources concerned by its activity. This involves contributing to restoring the biodiversity of cocoa, soils and the ecosystem on plantations and within landscapes.

> *"Over the last decades, the sector has developed based on a "pioneer fronts" approach, especially in West Africa. This has led to massive deforestation and a substantial erosion of biodiversity in this part of the world."*

AN ARTICLE BY
GUY DEBERDT
Chief Executive Officer, Kaoka

Guy Deberdt took over the company (alongside his sister, Maria Deberdt) in 2012 from André Deberdt, the founder of Kaoka and a pioneering player committed to the development of organic and fair trade agricultural production

SÉBASTIEN BALMISSE
Programs and Quality Manager, Kaoka

Following an international career where he was involved in rural development projects, Sébastien Balmisse first encountered Kaoka in 2010 in Sao Tomé, while he was working on a project to revive agricultural sectors supported by Agence Française de Développement (AFD). He has been coordinating Kaoka's cocoa programs since 2013.

PROMOTING THE DIVERSITY OF VARIETIES

> *Since 1993, Kaoka has been developing its supplies in Ecuador, Peru, the Dominican Republic and Sao Tomé with family farms grouped together as cooperatives of organic farming producers.*

Since 1993, Kaoka has been developing its supplies[1] in Ecuador, Peru, the Dominican Republic and Sao Tomé with family farms grouped together as cooperatives of organic farming producers. This agricultural model is often considered to be "folkloric" and stereotyped and would in itself be a socially and ecologically virtuous system. The reality is quite different: if this family model is not supervised and supported, it can also cause ecological disasters (deforestation on pioneer fronts in West Africa is a good example) and social disasters (how to survive with unproductive family cocoa farming?). For example, in South America, the extensive and unproductive growing of "Nacional"[2] cocoa has clearly resulted in producers abandoning native cocoa varieties for the hybrid CCN51 variety, which causes an alarming loss of genetic diversity.

Kaoka is far from opposing the intensification of family production and farming. On the contrary, back in the 2000s, it worked to implement techniques to renovate[3] cocoa plantations by selecting native cocoa varieties with producers, combining aromatic qualities and disease resistance.[4] Thanks to these long-term efforts, producers who set out to renovate their plantations see their yields multiplied by a factor of 4 to 6 and thereby avoid converting to CCN51. It is therefore by securing higher incomes for producers that Kaoka contributes to preserving the genetic heritage of "Nacional" cocoa.

SUSTAINABLE AGROFORESTRY

This intensification of cocoa production also turns it into a competitive source of income faced with the temptation of continuing with an extensive farming approach on pioneer fronts, leading to the destruction of forest areas. For example, from 2014 to 2016, Kaoka worked in Sao Tomé with the Organic Cocoa Export Cooperative (CECAB), the International Fund for Agricultural Development (IFAD) and the Global Environment Facility (GEF) on a program to renovate cocoa plantations to generate alternative incomes to hunting, coal production and illegal deforestation in Obo National Park. These partner institutions have lauded the impacts.[5]

The promotion of agroforestry is also a focus area for action to maintain biodiversity on plantations. Since 2019, Kaoka has been supporting a program to convert 150 hectares of cocoa without shade into agroforestry systems. Here again, it is necessary to reconcile the economic interest of the producer (generate additional income by producing fruit and wood, maintain soil fertility) and the conservation of biodiversity on the plot. In addition to the recognized impact of agroforestry systems on increasing the diversity of flora and fauna (Noble and Dirzo, 1997; Rolim and Chiarello, 2004), Kaoka is currently conducting research in partnership with the NGO Sallqa and Bioversity to study their role in ecological landscape connectivity.[6]

1 ▸ In 2020, Kaoka will import about 5,000 tons of organic fair trade coca, i.e. between 6% and 8% of the organic cocoa imported in Europe.
2 ▸ "Nacional", also known as Arriba, is a cocoa tree cultivar. It was initially grown in Ecuador, the country where it was developed, at the foot of the Andes Mountains, then its cultivation spread to the other Amazonian countries (source: Wikipedia, "Nacional (cocoa bean)").
3 ▸ These renovation techniques generally involve grafting unproductive trees onto locally selected aromatic varieties and redensifying plantations with grafted seedlings.
4 ▸ And, more recently, resilience to climate change.
5 ▸ See https://www.youtube.com/watch?v=LH0zveHAQ2w.
6 ▸ It involves the ecological continuity between different biotopes and landscapes – thus going against the fragmentation of ecosystems.

Furthermore, the "landscape approach"[7] has become essential for Kaoka, as the company has gradually become aware of the impact that the development of the environment of plantations can have on the economic and productive activity of its partners. In 2021, a regional program will be implemented called "Promoting Sustainable Opportunities in the Value Chain of Cocoa of Excellence"[8] (supported by the French Facility for Global Environment – FFEM –, in partnership with CIAT, World Agroforestry and the NGO Conservation International) to set up conservation plans and preserve natural resources in the production regions where Kaoka operates. The lessons learned from this project will contribute to the research conducted under the National Strategy to Fight Imported Deforestation (SNDI).[9]

FOCUS
KAOKA

Since it was set up in 1993 by André Deberdt, a pioneer in organic farming in France, Kaoka has exclusively marketed organic and fair trade products. The company's economic model is based on developing sectors and establishing close partnerships with cocoa producers, meaning it can observe on-site with the producers the effects of climate change and the deterioration of their environment.

THE ESSENTIAL SUPPORT OF PUBLIC AUTHORITIES

While Kaoka is proactive in taking action on the ground to preserve ecosystems and biodiversity, it is also aware of the limits of its action and the risks related to antagonistic practices or dynamics. For example, in Ecuador, it can see the devastating effects of the agro-industrial environment in certain production areas. The massive use of pesticides on banana plantations, for instance, has a direct impact on pollinator populations, which reduces cocoa yields. In certain cases, such as in Peru, land pressure and the refusal of local authorities have prevented the implementation of a conservation plan for an ecosystem particularly rich in biodiversity[10] proposed by Kaoka in partnership with the cooperative Colpa de Loros.

These examples show that it is essential for private sector action to be supervised and supported by public authorities and that governments must implement public policies to promote sustainable agricultural practices by mainstreaming environmental issues into land-use planning policies.

Biodiversity conservation is a key issue, strongly correlated with the fight against deforestation and climate change. In recent years, the private sector has very much integrated these concerns into its discourse, in particular through Corporate Social Responsibility (CSR) policies. Unfortunately, environmental conservation, through extensive communication campaigns, has above all become a foil for many major groups.

For SMEs that innovate in establishing organic fair trade activities, it is not always easy to raise awareness of their actions to preserve biodiversity and natural resources and therefore gain a commercial benefit.

CONCLUSION

Kaoka is continuing its efforts to implement soil and ecosystem renovation programs, in particular in the Amazon. Indeed, we have seen that landscape preservation is a prerequisite for the resilience of production systems. Agroforestry and soil fertility are key to the yields of producers. By ensuring bio-productive agriculture, we are combating rural exodus and the abandonment of cocoa growing by the new generations. And beyond our commitment to the development of our company, we are convinced that it is now urgent (and possible) to take action to preserve biodiversity and natural resources.

7 ▸ The landscape approach aims to provide tools and concepts for land management in order to achieve social, economic and environmental objectives in territories. The landscape is "read" and analyzed before development proposals are made.
8 ▸ In Colombia, Ecuador and Peru.
9 ▸ See https://www.ecologie.gouv.fr/sites/default/files/2018.11.14_SNDI_0.pdf
10 ▸ It is an Amazonian "collpa", an ecosystem characterized by an outcrop of mineral salts where animals (especially birds) group together.

Towards eco-systemic concessions: an introduction to the coming age of forests

Emmanuel Groutel, Expert in timber and forests, Wood And Logistics Expert
Yann Alix, Executive Director, Fondation Sefacil
François-Xavier Dugripon, energy expert, Société des experts bois

In the face of wholesale anthropogenic and climate-related threats, the planet's four billion hectares of forests are now more valuable than ever. As a reaction to this pressure, in the Congo Basin for example, a system of "green financing" already makes it possible to reward initiatives that aim to combat deforestation. More generally, the role of forest managers needs to be rethought in these endangered areas to develop eco-systemic concessions that treat forests as more than just a market commodity.

The planet's four billion hectares of forests (as estimated by the FAO[1]) were valued at US$ 150,000 billion in a recent report published by Boston Consulting Group, which stressed that the natural carbon-storing capabilities of the planet's three trillion trees have a unique positive impact on the climate[2]. These staggering figures preface two realities for the future of humanity: the commercial value of the world's forests, which used to comprise social and environmental values, now also include a climate-societal value; and 30% of the total value of these forests could disappear by 2050, under pressure from deforestation, changes in land use and global warming. In the Congo Basin alone, these global "macro-forestry" realities give rise to a number of existential questions[3], one of which is especially interesting: why must the private forest sector drive a new sustainable, equitable and profitable development paradigm to guarantee the transmission of our tropical forests to future generations?

FROM ANTHROPOGENIC THREAT...

The whole debate concerning the African demographic dividend is absurd unless we tie the total number of inhabitants to the increase in purchasing power and the carbon footprint of future consumers. The countries of the Congo Basin could be home to 500 million people by the year 2100, putting massive pressure on its forests, which represent over 80% of the total surface area of Gabon and 60% of Congo-Brazzaville. Timber consumption would then become a regional phenomenon driven by the basic needs of the population of Sub-Saharan Africa, which

1 ▸ *FAO*. 2020. Global Forest Resources Assessment 2020: Main report. Rome. https://doi.org/10.4060/ca8753fr
2 ▸ Kappen, G., Kastner, E., Kurth, T., Puetz, J., Reinhardt, A., & Soininen, J., (2020), *The Staggering Value of Forests – and How to Save them*. Boston Consulting Group Report. June 9th. https://www.bcg.com/fr-fr/publications/2020/the-staggering-value-of-forests-and-how-to-save-them
3 ▸ Groutel, E., & Alix, Y., (2015), *Le temps du bois. Note stratégique et prospective*. EMS Editions. Caen.

could then represent one-fifth of all humanity (i.e., wood fuel for cooking, timber for construction, conversion of forests to agricultural land, inter-regional African trade). We should bear in mind that in 2018, the bulk of plywood panels produced in the Congo Basin were already being consumed *in situ*[4].

If we estimate average annual growth of 3% to 4% over 2020-2050, the countries of the Congo Basin could well witness a two-fold increase — and even a three-fold increase in the case of the Democratic Republic of Congo — in their purchasing power by 2050. The pressure on their stock of forests would be multiplied ten-fold because these same populations would then have the financial resources needed to consume African — and international — manufactured goods. In addition to regional demand, China, which was already consuming more than half of Africa's timber output in 2018[5], could well ramp up its demand. This would turn the forests of the Congo Basin into an even more readily available globally traded commodity and a source of the foreign exchange needed to purchase consumer goods.

...TO ENVIRONMENTAL REALITY...

BP Energy's Annual Report[6] clearly demonstrates that economic growth automatically leads to an increase in energy demand. This link between income and energy is a fatal combination at a time when the forests of the Congo Basin remain the primary source of energy for populations that are still more rural than urban. In order to anticipate the irreversible effects of just such a scenario on the planet's tropical forests, Article 5 of the Paris Climate Agreement supports international mechanisms for forestry based on sustainable management of natural carbon sinks. Positive incentives may be offered to sovereign custodians of tropical forests to increase forest carbon sinks without turning a unique living heritage into a museum. Such an approach would include preserving essential biodiversity.

Jeremy Rifkin[7] speaks of *"a carbon bubble that is unprecedented in human history"* and forests would appear to represent the best solution to the dual challenge of higher demand for energy coupled with climate change. And this is the contemporary reality in which energy companies, banks and even the GAFAMs are committing to "green money" initiatives in support of renewable electricity production. In September 2019, Norway's sovereign fund committed to paying US$ 150 million a year over 10 years to the Gabonese government in exchange for initiatives to reduce deforestation and increase carbon sequestration capacities in forests with very high biodiversity. It is based on a minimum price of 10 euros per tonne of carbon sequestered. Under this approach, "green funds" could provide an indispensable source of funding to support forest concession holders who are already committed to sustainable forestry management policies under the control of the governments of Congo Basin countries. In the specific case of Gabon, what makes the initiative particularly innovative and promising is the focus on preserving an existing carbon sink that is the fruit of effective past management, in contrast to traditional incremental mechanisms which, in the specific context of the Congo Basin, may simply encourage post-deforestation plantations. These value-creation mechanisms, which could potentially concern 230 million

AN ARTICLE BY

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YANN ALIX

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FRANÇOIS-XAVIER DUGRIPON

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François-Xavier Dugripon is an expert in energy markets, networks and concessions. He helped to structure Cofely's supply of biomass, making it France's biggest purchaser of wood fuel, before heading up Engie's biogas development programme. He is currently Director of Strategy and Development for the Lamy Group.

4 ▸ IDH, (2019), *Unlocking sustainable tropical timber market growth through data.* https://www.idhsustainabletrade.com/uploaded/2019/11/IDH-Unlocking-sust-tropical-timber-market-growth-through-data.pdf
5 ▸ *ATIBT*, (2018), *Final report of the International Forum: "Together towards global green supply chains"* 22 to 29 October 2019. China. https://www.atibt.org/wp-content/uploads/2020/01/SHANGHAI-2019-RAPPORT-FINAL-20200129.pdf
6 ▸ BP Energy Outlook 2019 Edition. https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2019.pdf
7 ▸ Rifkin J. (2019), The New Green Deal, St Martin's Press.

FOCUS

FONDATION SEFACIL

Fondation Sefacil promotes research and innovative learning projects in international logistics and fosters exchanges between the business world and academia around sector-related issues.

SOCIÉTÉ DES EXPERTS BOIS

Société des experts bois (SEB) is a centre of excellence specialising in wood as well as timber derivatives and applications. It comprises a network of experts working both inside and outside France in different areas (economic and marketing studies, technical studies, audit and consulting, carbon audits, energy efficiency reports, etc.). These experts provide essential information for courts, insurance companies, professionals from the timber sector and individuals.

WALE

With more than 35 years of experience serving the timber sector and logistics, WALE's (Wood And Logistics Expert) teams have revealed their know-how and skills worldwide, in terms of expertise, consulting and training in the wood sector. Adaptation to intercultural factors, knowledge of species, products, needs, international flows and developments in various markets enable them to be at the cutting edge in this sector. Combining ethics and pragmatism, WALE presents a range of services at the heart of its partners' and customers' concerns.

hectares in the Congo Basin, are contingent on promoting and deploying an "eco-systemic concession" model that locks all stakeholders into a common approach to developing forests and preserving biodiversity.

...THROUGH TO ECO-SYSTEMIC CONCESSIONS

Tropical forest logging arrangements are often a legacy of mining concessions and they are no longer in phase with the challenges of developing an inclusive model, underpinned by innovative mechanisms for creating shared value over the long term. Although forest concession holders are often vilified amidst a plethora of preconceived notions, it is they who are generally best placed to transition to a systemic model capable of unlocking value from and preserving tropical forests. While still largely based on commercial management of timber extracted, concessions have evolved in line with international regulations and certifications as well as the obligations imposed by third parties such as NGOs or multilateral financial backers. Global warming has conferred tropical forests with "a new market value" that goes way beyond what its timber reserves are worth. For forest concession holders, the constraints of today's offset arrangements can become tomorrow's income streams, explicitly included in the contractual clauses of a new approach to forestry governance.

An eco-systemic concession is primarily a redistributive mechanism to develop forests in line with environmental interest missions whereby those living in the forests become not just "employees/partners" but "entrepreneurs/partners". It is a new type of concession based around a public-private partnership and a governance framework that does not impinge upon national sovereignty but safeguards the preservation and development of the forest's cultural and societal dimensions. In certain cases, a diversified shareholder base comprising local, national and international stakeholders may provide an opportunity to combine public, private and universal interests. Agroforestry, community-based forestry and forest eco-tourism may be harnessed to develop a virtuous African agro-business serving the people of the Congo Basin. Ecosystem services (i.e., the supply of water and electricity, hydrosystem regulation, carbon sinks (including those beneath the forest floor), preservation of biodiversity of species and habitats, etc.) are paid for by international funding earmarked strictly for eco-systemic concessions. A tropical forest is a timeless piece of heritage containing up to 45,000 plant species per hectare (compared to 1,500 in a temperate environment and 160 in a boreal forest environment). As the *Natural Capital Coalition* has shown[8], a profitable eco-tourism activity is possible in the long run if it is part of a sustainable and enlightened approach to forest management. By harvesting only one tree per hectare every 25 or 30 years, responsible forest management can produce 17 times more value[9] than a conservation policy *stricto sensu*. Certain, mainly European concession holders are already involved in virtuous and inclusive forest management programmes in the Congo Basin and their liability often extends way beyond the initial concession agreement term. Payment for all of the "ancillary services" aside from logging are not generally specified and even more rarely re-indexed as sustainable management practices become more common.

Eco-systemic concessions are created using a dynamic approach, in line with regulatory engineering principles that have proved their worth in other sectors in Africa[10]. The rigid contractual terms and conditions of public-private forest concession partnerships are no longer

8 ▸ *Natural Capital Coalition*, (2018), *Forest Products Sector Guide: Case Study for Interholco*. 25 July. https://naturalcapitalcoalition.org/forest-products-sector-guide-case-study-for-interholco/
9 ▸ Ibid ii
10 ▸ See in particular, the work on port concessions carried out by the international consulting firm Axelcium.

appropriate, either for the sovereign public authority or the private company involved. Eco-systemic concessions are an attempt to rethink the contractual basis and go beyond the legal, economic and financial aspects by integrating social, societal, environmental, climate and energy dimensions, etc. This represents a complete paradigm change where the forest becomes an ecosystem of possibilities for the concession holder. Rather than thinking in terms of potential offsets, eco-systemic concession holders seek to unlock the value of an ecosystem of services within a different space-time relationship. They are managers of carbon sinks and biodiversity for whom timber production is only of marginal economic value within the activity as a whole. They partner the development of eco-tourism and include the people that live in the forests within this approach. Eco-system managers receive international carbon funds directly and pay part of these over to central governments in the form of taxes.

“Eco-systemic concessions are an attempt to rethink the contractual basis and go beyond the legal, economic and financial aspects by integrating social, societal, environmental, climate and energy dimensions, etc.”

CONCLUSION

Climate change has led to the emergence of international “green financing” solutions that represent a fantastic opportunity to add value to forests on a continent with the highest annual rate of net forest loss with 3.9 million hectares lost between 2010 and 2020[11]. We need to bear in mind that an oil palm concession can yield up to 700 times more than patrimonial management of a rainforest[12], however, in the latter case, the damage is irreversible and the carbon sequestration capacity is lost forever. Consequently, the deployment of eco-systemic concessions can be a bulwark that sovereign governments in the Congo Basin need to use, teaming up with concession holders for whom transforming the business of forestry management has become an imperative.

As we have seen with the world’s oceans, forests have become an integral part of protecting and preserving humanity. At the present time, forests — especially those in intertropical latitudes — are one of the few tangible ways of growing carbon sinks, combating global warming over the long term and protecting remarkable biodiversity.

11 ▸ Ibid i
12 ▸ Ibid iv

Total's approach to tackling biodiversity challenges

Steven Dickinson, biodiversity lead in Total's Environment division
Patricia Mani, Group VP Environmental & Societal Expertise, Total

Back in 2005, Total introduced an ambitious biodiversity protection programme. Today, the Group is committed to protecting the environment at both local level («biodiversity action plans» for new projects, for example) and global level (helping to prepare a Global Biodiversity Plan). Total sees this commitment as an opportunity and an essential investment in its own future.

FOCUS
TOTAL

Total is a multi-energy company which produces and markets low-carbon fuels, natural gas and electricity. With 100,000 employees working in over 130 countries, Total aims to become "the responsible energy major". This means being aware of the need to protect the environment and mainstreaming biodiversity into all of its businesses.

Total's biodiversity journey began in 1992 with the creation of the Total Foundation and its philanthropic initiatives to protect marine ecosystems. This environmental focus culminated in the Group's biodiversity policy in 2005. In 2016, Total pledged its commitment to the UN Sustainable Development Goals (SDGs) and in 2018 it signed up to the "Act4nature" initiative backed by the French Association of businesses for the environment *(Association française des entreprises pour l'environnement)*. Most recently, in 2020, the Group helped to prepare a Global Biodiversity Plan as part of the UN Convention on Biological Diversity (CBD) at COP15.

This unstinting and longstanding commitment to protecting biodiversity means that Total can now draw upon its extensive experience both in terms of local biodiversity management initiatives and its global CSR strategy. It has also provided new opportunities for growth and helped prepare the Group to meet future challenges.

> *"By their very nature, Total's activities may be located in sensitive natural environments. They sometimes have a negative impact on local biodiversity and may jeopardize certain ecosystem services provided by these natural environments."*

BUSINESSES THAT IMPACT BIODIVERSITY

By their very nature, Total's activities may be located in sensitive natural environments. They sometimes have a negative impact on local biodiversity and may jeopardize certain ecosystem services[1] provided by these natural environments.

These undesirable impacts, of varying nature and extent, are primarily due to changes in the way in which environments are used, for example when an industrial facility and related infrastructure are located in a natural area. However, chronic pressure may also be exerted on biodiversity. This could take the form of gaseous and liquid discharges or noise pollution. And while they are rare, accidents may also harm the environment.

Renewable energy generating facilities may put pressure on biodiversity. For example, solar farms may lead to a partial conversion of a natural habitat or wind turbine rotor blades can be dangerous for avifauna.

Therefore, curtailing the negative environmental impacts of Total's activities first involves recognising and identifying such impacts.

These local issues are compounded by the overriding urgency of climate change and its impact on biodiversity. Here, Total is aiming to achieve carbon neutrality by 2050 along with a number of key milestones, including the production of 35 GW of electricity from renewable sources by 2025.

SOLUTIONS TAILORED TO PROTECTING BIODIVERSITY

To tackle all of these local and global challenges, Total has had a specific biodiversity management and protection policy since 2005. In particular, it introduced a mitigation hierarchy ("avoid, minimize, offset")[2]. Biodiversity was mainstreamed into the environmental management system at Group sites and subsidiaries: initial studies, impact studies and tracking of biodiversity management initiatives during operations all became systematic.

In 2020, Total made "biodiversity action plans" compulsory for all projects located in the most sensitive areas[3] (there have been around 10 such projects up to the present — see Insert). For sites located in priority areas[4], these action plans must generate a "net biodiversity gain"[5] certified by a third party, as will be the case for the Tilenga oil exploration project in Uganda. But this measure does not just apply to new projects. Certain longstanding sites located in highly industrialised regions are also deploying an environmental approach. This is happening at the Feyzin refinery in France where the site's plant population has been carefully mapped and differentiated management strategies have been deployed (especially with regard to mowing). Around a quarter of the site has now been made available for developing local biodiversity. From now on, the company will systematically perform "biodiversity diagnostics" in and around its sites that are important for the environment, i.e. sites that have been certified ISO 14001. The first diagnostics will be performed in 2021 and, depending on the results, they may culminate in new pro-biodiversity initiatives.

The commitments and processes that underpin this improvement drive are reflected in a major effort to mainstream pro-biodiversity initiatives

AUTHORS

STEVEN DICKINSON

Biodiversity lead in Total's Environment division

Steven Dickinson is tasked with devising Total's biodiversity policy, objectives and roadmap together with implementation support. In 2018, he oversaw Total's accession to the act4nature initiative, culminating in a series of public commitments made by the Group. In 2020 Steven spearheaded the Group's Biodiversity Ambition programme together with its related commitments.

PATRICIA MANI

Group VP Environmental & Societal Expertise, Total

Patricia Mani is a trained agronomist and Group VP for Environmental & Societal Expertise in Total's HSE division. She is in charge of setting and overseeing the Group's Environmental & Societal performance objectives. Patricia is also Group VP for Crisis Management, tasked with ensuring that Group entities are prepared for all manner of crises.

1 ▸ Ecosystems provide many services, known as ecological or ecosystem services, some of which are vital for many species or groups of species (pollinisation for example). These are generally classified as global commons and/or public goods (source: https://en.wikipedia.org/wiki/Ecosystem_service).
2 ▸ "Avoid, minimize, offset" is an underlying sustainable development principle aimed at ensuring that projects do not have a negative impact on the environment. It is enshrined in the EU's biodiversity strategy (source: https://fr.wikipedia.org/wiki/%C3%89viter-r%C3%A9duire-compenser).
3 ▸ IUCN areas I to IV and Ramsar sites.
4 ▸ IUCN areas I to II and Ramsar sites.
5 ▸ Enhanced biodiversity in a defined zone in the wake of human intervention can constitute a "net biodiversity gain".

> *"In 2012 Total ceased all oil exploration activity in Arctic Sea ice zones. These are highly sensitive natural areas in which it would be very difficult to deal with an accidental oil spill."*

into the Group's internal rules. For example, biodiversity is mainstreamed into the Group's risk assessment process (known as "CORISK") whose criteria — which are evolving by nature — were updated in 2020 with the publication of the Group's Biodiversity Ambition. Manuals explaining biodiversity management methods and decision-making applications are also available to provide concrete solutions to the project teams in charge of these matters out in the field. Biodiversity mainstreaming is rounded out by a biodiversity training program for Group employees that covers awareness-raising (provided by the French Natural History Museum) through to best current practices (in particular those defined by the World Bank Group's International Finance Corporation).

Finally, the Group has also decided to avoid certain highly environmentally sensitive areas altogether. For example, in 2012 Total ceased all oil exploration activity in Arctic Sea ice zones. These are highly sensitive natural areas in which it would be very difficult to deal with an accidental oil spill. Total is currently the only energy major to have made this commitment. This was followed in 2013 by a decision to ban all exploration and production activities at UNESCO World Natural Heritage Sites[6] in recognition of their universal heritage value.

The Yemen LNG biodiversity action plan

The Yemen LNG liquefied natural gas project – a venture in which Total has a 39.6% stake – has given rise to a highly ambitious biodiversity action plan. The initial project layout was fine-tuned to avoid large swathes of coral reef as much as possible. For the remaining blocks of reef affected by the construction of the port, the biodiversity plan included a major coral reef translocation program, the first time this has been done anywhere in the world on this scale. All work was overseen by an independent scientific committee that included the International Union for the Conservation of Nature (IUCN) in an advisory and verification role. The idea of an independent scientific committee was subsequently taken up and applied to other Group projects as a means of providing both internal and external stakeholders with a greatly appreciated form of assurance.

6 ▸ Inspired by the commitments made by Shell and the ICMM (International Council on Mining & Metals) in the early 2000s.

NEW OPPORTUNITIES

Total's mainstreaming of biodiversity has generated a number of partnership opportunities, notably with certain international NGOs[7]. This commitment has also enabled Total to influence the entire sector: other energy majors such as BP and ENI have agreed to steer clear of UNESCO heritage sites, for example. Moreover, Total has been named oil sector representative for the UN Convention on Biological Diversity's Extended Consultative Network to prepare support documents[8] for the Global Biodiversity Plan that include sector best practices. Total was also able to provide input on "biodiversity approaches" for organisations in the new AFNOR NF X32-001 standard.

The Group participates in scientific research, especially by sharing the data collected in the course of its studies and for monitoring biodiversity at its sites - this data is made available on the Global Biodiversity Information Facility, the international platform of reference in this domain.

"Total's mainstreaming of biodiversity has generated a number of partnership opportunities, notably with certain international NGOs."

There is no doubt that protecting the environment represents a source of opportunities for Total Group. A Nature-Based Solutions business unit was set up in 2019 to finance, develop and manage carbon sequestration operations using natural carbon sinks (i.e., forests, mangroves, wetlands, peat bogs, agro-ecology zones, agricultural land, etc.). These operations could also deliver biodiversity dividends by protecting or restoring targeted ecosystems.

CONCLUSION

Total's businesses are undergoing wholesale changes, especially with the rapid development of renewable energies, for which biodiversity mainstreaming is eagerly awaited. An internal "Renewable energies and biodiversity" workgroup has been created with the support of the Group's research and development teams.

Total is also conducting forward-looking studies on indicators to measure its "biodiversity footprint" and considering how best to factor in the effects of climate change on biodiversity. All of this research and reflection helps prepare the Group for the future.

7 ▸ Such as the Wildlife Conservation Society (WCS).
8 ▸ Long Term Approach to [Biodiversity] Mainstreaming (LTAM)

Biodiversity Loss: An Alarming Report

Prepared by 145 experts from 50 countries, the 2019 Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) confirms nature's alarming decline. Today, the majority of ice-free land (55%) is heavily used by human activity (housing, cultivated areas, grazing areas). 75% of the land environment and 40% of the marine environment also show "major signs of degradation", stress the authors of the report.

Sources: IPBES / IUCN / Atlas de l'Anthropocène (A. Rankovic / F. Gemenne. Presses de SciencesPo. 2019).

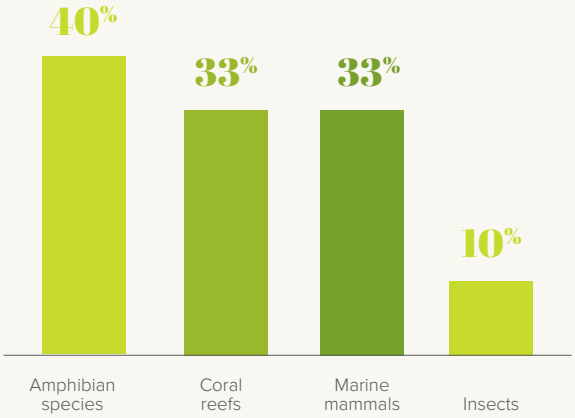
Unprecedented species extinction rates

In its 2019 report, IPBES notes "unprecedented" and accelerating extinction rates.

1 million
species are threatened with extinction

out of the 8 million
known in the world

The following are under threat:



The causes:

- Land degradation and soil sealing
- Intensive agricultural practices and deforestation
- Climate change
- Pollution
- Invasive alien species

Carbon dioxide reserves also threatened

Intact rainforests currently store the equivalent of 25 years of carbon dioxide emissions.

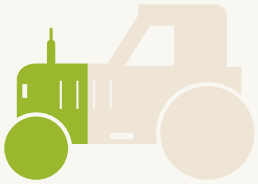
Yet global warming could reduce these reserves. Beyond a daytime temperature of 32°C, this stock would be drastically reduced, according to a study whose findings have recently been published in the *Science* review.

25 years OF CARBON DIOXIDE EMISSIONS

BEYOND A DAYTIME TEMPERATURE OF **32°C** THIS STOCK WOULD BE DRASTICALLY REDUCED

Source: CIRAD / *Science* (2020).

1/3
of land areas
are today allocated to agriculture



+ 1/3
of fish stocks
are overexploited

Source: IPBES

Between **1990** *and* **2016**

over **1.3 million** km² of forests

disappeared around the world

***i.e.* a surface area larger than South Africa**

Source: World Bank (2016).

What is biodiversity?

The Convention on Biological Diversity (CBD) defines biodiversity as

"The variability among living organisms from all sources including, inter alia, ***terrestrial, marine and other aquatic ecosystems and the ecological complexes*** *of which they are part; this includes* ***diversity within species, between species*** *and of ecosystems."*

Source: "The Little Book of Investing in Nature" (coordination Global Canopy – 2021).

What is the value of ecosystem services?

USD 125 trillion
TO **USD 145 trillion**

I.E. **150%** OF WORLD GDP

Source: estimates of Costanza et al. (2014), quoted in "The Little Book of Investing in Nature" (coordination Global Canopy – 2021).

USD 44 trillion
of economic value are moderately or heavily dependent on nature

I.E. **50%** OF WORLD GDP

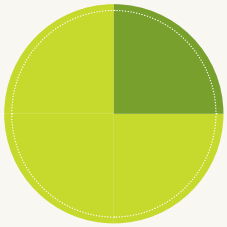
Sources: World Economic Forum / AlphaBeta (2020).

Financing needs for global biodiversity from now until 2030

USD 722 billion AND USD 967 billion A YEAR

of which **75%**

must be used to more effectively mainstream biodiversity into the economic sectors that damage it (fishing, forestry, agriculture, construction...)



But only **USD 124 billion to USD 143 billion**
are currently devoted to it every year

I.E. **6 times** LESS

Sources: afd.fr "The Little Book of Investing in Nature" (coordination Global Canopy – 2021).

Plus de zones protégées

ALMOST **15%** OF THE WORLD'S LAND AREA

AND **10%** OF ITS TERRITORIAL WATERS

are covered by **national parks** and other **protected areas.**

Between 2006 and 2016, the coverage of marine protected areas increased by almost

300%

Source: IUCN.

Private sector increasingly committed to biodiversity

Despite the Covid-19 epidemic, new business coalitions to protect biodiversity are being set up while others are being strengthened. For example, this is the case with TNFD (Taskforce on Nature-related Financial Disclosures), Finance for Biodiversity, Business for Nature and Act for Nature International.

What links between human activities and pandemics?

*"The same human activities that drive **climate change and biodiversity loss** also **drive pandemic risk** through their impacts on our environment."*

According to Dr. Peter Daszak,
President of EcoHealth Alliance

It is estimated that

1.7 million

"undiscovered" viruses are currently present in mammals and birds,

850,000 of which could infect human beings.

Source: Escaping the "Era of Pandemics": Experts warn worse crises to come (IPBES, 2020)

Development banks and their clients produce a large volume of biodiversity data

Through the studies they finance, development banks help their clients produce a large volume of raw biodiversity data. These data are generally collected in the field by specialized consulting firms during environmental impact studies or any resulting ecological monitoring studies. Each environmental impact study collects on average 500 to 1,000 raw biodiversity data.[1]

500 to **1,000**
raw biodiversity data

1 ▸ Estimate provided by Biotope based on its experience (https://www.biotope.fr/) / Data4Nature.

Evolving in order to provide more effective solutions to environmental challenges

Coline Jacobs, Head of Sustainable Development, Veolia

Veolia's historic mission and the development of its businesses have made it a stakeholder who wishes to actively contribute to reducing anthropogenic environmental pollution. Like all industrial businesses, it can also impact the environment in a negative way and it constantly strives to mitigate such impacts. To take its corporate social responsibility commitment to the next level, in 2019 Veolia announced its intention to become a global champion of ecological transformation.

AN ARTICLE BY
COLINE JACOBS
Head of Sustainable Development, Veolia

Coline Jacobs has been spearheading the Sustainable Development division's commitment to protecting ecosystems and biodiversity at Veolia's Head Office since 2014. Coline chairs the "Enterprise and Biodiversity" working group set up by the French Committee of the International Union for the Conservation of Nature (IUCN) and she has helped develop various innovative solutions in liaison with nature conservation organisations such as Noé and IUCN. Examples include eco-logical.fr and an application for measuring local biodiversity footprints.

Large corporations are frequently criticised, especially because of the impact their activities may have on the environment, however, when their core businesses include waste and waste water treatment or providing energy, they actually help protect the environment.

Our societies are generating increasing volumes of waste and consuming more and more energy. Responsible waste and waste water management at an appropriate scale helps preserve the natural environment — be it water, air or the soil.

The progress witnessed in this domain over the past few decades owes much to the large sums invested — particularly by large companies — in research and development.

THE VEOLIA EXAMPLE: REDUCING ITS OWN AND ITS CUSTOMERS' ENVIRONMENTAL FOOTPRINT

These days, the water that Veolia is returning to rivers and oceans has been cleaned by wastewater treatment processes. Veolia limits soil and water pollution by collecting and treating household and industrial waste and it preserves natural resources by recycling waste. Lastly, it helps to reduce discharges of pollutants into the air by treating smoke and it produces energy using innovative techniques.

However, the mere deployment of Veolia's activities impacts the environment in negative ways: the sites occupied by its facilities may fragment habitats and discharges released into water, air or the soil may contain residual pollution. Veolia's activities also generate carbon emissions.

In the face of these challenges, Veolia constantly strives to reduce its environmental footprint. This involves continuously improving the environmental performance of its customer operations (by reusing water and optimising energy efficiency for example) and preserving biodiversity at its different sites (i.e., managing spaces in an ecological way, creating or restoring ecosystems, etc.).

Aside from these historic initiatives, in 2019 Veolia also decided to reinforce its commitment to corporate social responsibility by adopting a more holistic vision and redefining its "purpose" around the idea of usefulness for all stakeholders[1]. Now more than ever, combating pollution and accelerating the transformation both of its own and its customers' businesses lie at the heart of its approach. Veolia aims to become a corporate champion of the ecological transformation required at all levels of society. In concrete terms, this strategic transformation is reflected in the deployment of an approach organised around shared progress with and on behalf of stakeholders (a multi-faceted performance, organised around 18 targets for progress and 18 quantified indicators by 2023), the deployment of our Impact 2023 strategic program across all geographies, and training for all employees. Among the targeted objectives, four are directly related to environmental performance, i.e., combating climate change, promoting the circular economy, preservation of water resources, and protection of environments and biodiversity.

One of these objectives measures the impacts of Veolia's activity on natural environments and biodiversity at its most sensitive sites. Veolia's R&D teams worked with the French Committee of the International Union for the Conservation of Nature (IUCN) and the biodiversity consultancy "Ecosphère" to devise an application that measures its own and its customers' environmental footprint.

Therefore, Veolia's "purpose" leads it to reorganise its business and service lines to help it achieve its environmental objectives in accordance with a "holistic" local vision that is always adapted to the specific context on the ground. For example, a waste water treatment project at a given site must focus on restoring natural ecosystems.

Veolia's new positioning strategy is being driven by the way in which its businesses are changing, the Company's strategic ambitions (i.e., becoming a champion of ecological transformation) and the professionalism of its employees.

In response to this threefold change in its legal, organisational and skills-based environment, Veolia needs to respond to the concerns of both citizens and "users". It is a huge challenge for the Company and adjustments will have to be made. Although there is still a long way to go, at least the way ahead is clear. ■

FOCUS
VEOLIA

Veolia is a French company that employs 178,000 people in over 40 countries. The Group is present on five continents where it deploys water (i.e., potable water production and sanitation), waste (collection, processing and recycling of non-hazardous and hazardous waste) and energy management solutions (energy production and heating and cooling networks, etc.). Veolia's businesses give it a strong connection to the local community and its customers are drawn from both the public sector (i.e., local authorities and local government bodies) and private sector (manufacturing and service companies, etc.).

From waste water treatment to restoring a natural ecosystem

At Sinopec's petrochemical site near Beijing, China, all water management - i.e., drinking water, process water and wastewater - has been delegated to Veolia. The Company looks after cooling water, distilled water and chilled water production facilities.

There are enormous on-site environmental challenges that include severe water stress, water discharges into highly sensitive natural habitats and a very high risk of flooding. Under a plan to protect water resources and reinforce environmental standards imposed by the local authorities, Sinopec has had to optimise its consumption and increase the water recycling rate in an effort to reduce the site's water footprint.

In 2015, Veolia built three water treatment plants which enhanced the sites' waste water treatment performance and 60% of all waste water is now reused. The resulting clean water is returned to the surrounding wetlands which are home to an extremely rich ecosystem. To restore biodiversity, Veolia has redeveloped and terraced eight hectares of land near the industrial plant. Each hosts specific vegetation - carefully chosen for its purification capabilities - to optimise the quality of the water entering the natural environment. Thanks to this ecosystem restoration project, over 50 species of birds have returned to live in the area.

1 ▸ Under the French government Action Plan for Business Growth and Transformation (*PACTE* in French), companies may redefine their purpose and emphasise their corporate social responsibility. Under the *PACTE* law, Article 1833 of the French Civil Code (*code civil*) is amended to include the legal notion of social interest and to reiterate the need for companies to focus on the corporate social responsibility challenges inherent in their activities. Subject to its corporate purpose, a company may deploy an entrepreneurial project in pursuit of the collective interest: the "purpose" is the long-term project enshrined within the company's corporate purpose (source: https://www.economie.gouv.fr/loi-pacte-redefinir-raison-etre-entreprises – consulted on 12/12/2020).

Partnerships between civil society and the private sector to protect sensitive regions

Pierre Carret, agricultural engineer

The CEPF is a fund specialised in supporting partnerships between environmental protection associations and economic stakeholders. When civil society comprises a wide range of organisations - a diversity that helps our democratic machinery to function properly - it is easier for private stakeholders to work with some of them. These are win-win partnerships for private companies who are able to showcase their environmental credentials.

AN ARTICLE BY
PIERRE CARRET
Agricultural engineer

Pierre Carret is an agricultural engineer. He has spent several years working as a special biodiversity and climate advisor to the European Commission's Department of International Cooperation and Development. He has been Grant Director at the Critical Ecosystem Partnership Fund (CEPF) for the past 10 years, where he has liaised with civil society environmental organizations in more than 30 African and Caribbean countries.

In 2015, Consortio Ambiental Dominicano, a non-profit made up of government and non-government organisations, created the Dominican Republic's first private reserve around a protected forest area where village communities get help to plant trees and grow cocoa and macadamia nuts. These high-quality products are then marketed to a North American network of chocolate makers in packaging that showcases the initiative and highlights the environmental value added by the partnership.

This pioneering model, underpinned by close cooperation between an environmental organisation and a network of private companies, shows what the relationship between the private sector and civil society could look like. However, it by no means exhausts all of the potential interactions between these two types of stakeholders — which can be harmonious but may also be conflictual.

Civil society is identified as a key stakeholder, alongside government organisations and the business community. In particular, it is recognised as playing a key role in driving socially and environmentally sustainable policies. It is therefore important that businesses understand the role that civil society organisations can play. There is genuine partnership potential between these two different types of stakeholder, particularly in the area of environmental protection.

A WIDE VARIETY OF STAKEHOLDERS, WITH VASTLY DIFFERING POSITIONING STRATEGIES

Civil society comprises a whole host of different structures, including non-profits committed to protecting the environment. Obviously, these organisations can support and influence economic stakeholders, but they can also oppose them and it is often from this standpoint that they are perceived by governments and economic stakeholders. Depending on their positioning strategy, we may classify environmental non-governmental organizations in different categories.

Naturalist associations, which are often the oldest such groups, initially had scientific objectives. These days, they are the main providers of data on biodiversity, whether for a given territory or

for groups of species (birds, marine mammals, plants, etc.). NIMBY-type associations (i.e., "Not In My Backyard") oppose projects that could damage the environment within their restricted living grounds. "Model-centric" organizations develop a more political vision as they attack economic models or advance alternatives. This opposition/proposition dynamic may be rooted locally or extend to global concerns such as plastics, deforestation, industrial farming, etc. They sometimes act as whistle-blowers or promote awareness of environmental causes. "Expert" organizations help shape debates around certain issues, seek out alternatives and solutions, and willingly help other stakeholders to boost their actions. Lastly, increasingly widespread "management"-type organizations seek to secure a more active role in preserving the natural environment and in actions, especially at local level and they currently manage numerous natural spaces.

Obviously, this oversimplified typology is porous. The role of certain organizations can vary and change over time as their internal dynamics and issues themselves change or as the environmental situation evolves within their own sphere of influence.

THE NEED FOR A STRONG AND DIVERSE CONSERVATION COMMUNITY

Naturally, stakeholders from the private sector generally have a clear preference for "expert"-type organisations with whom it is easier to forge partnerships. Naturalist associations are also well regarded simply because of their capacity to provide the data needed for taking decisions. Obviously, those that pose as a force for opposition are less popular among private sector operators.

Nevertheless, all of these different types of organisations are essential for a vibrant civil society — and for effective governance of our societies in general. As with any ecosystem, relationships of interdependence between these organisations help the whole environment to function properly. The CEPF has worked in countries in which an environmental organization has had a virtual hegemony for historical reasons and this has led to numerous failures in the workings of conservation policies. Just like in the for-profit sector, while monopolies can create cosy situations, they can also stifle innovation, risk-taking and debate.

So it is important for the private sector to embrace the diverse range of civil society actors in spite of the frustration sometimes felt when confronted with opposition from some of these stakeholders.

And it is also important that this mutual understanding culminates in environmentally-friendly partnerships. This is exactly what the CEPF seeks to promote. Over the last 20 years, CEPF has partnered more than 2,350 local organisations across 98 countries and territories, and granted over USD 242 million worth of grants[1] . Approximately 3% of this investment (USD 6,7 million) has gone to cooperatives and micro-businesses. At the same time, CEPF has supported a large number of initiatives to strengthen effective collaboration between civil society and the private sector. ■

FOCUS
CEPF

The Critical Ecosystem Partnership Fund (CEPF) is a joint initiative backed by Agence française de développement (AFD), Conservation International, the European Union, the Global Environment Facility, the Government of Japan and the World Bank. This international programme is primarily aimed at conserving biodiversity, notably by providing financial and technical assistance to civil society organizations and economic stakeholders who are engaged in the protection of natural ecosystems (www.cepf.net).

1 ▸ See CEPF impact report: https://www.cepf.net/sites/default/files/cepf-2019-impact_report-single_page_view_0.pdf

Recommendations for integrating biodiversity into the wind energy sector in emerging market countries

Simon Hulka, Biodiversity consultant, International Finance Corporation
Lori Anna Conzo, Global Biodiversity Lead and Senior Environmental Specialist, International Finance Corporation

Renewable energy is essential to achieving sustainable development, and wind energy can provide competitively priced electricity, while helping to reduce climate change impacts. Yet its impacts on biodiversity especially in emerging market countries is poorly understood. Specifically, the risks and effects of turbine and associated powerline collisions on bird and bat populations, as well as those on habitats and ecosystems represent key knowledge gaps. In response, the authors propose a set of recommendations that could help safeguard at-risk bird and bat populations in emerging market countries, especially where regulations are lacking.

AN ARTICLE BY
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Simon is working within the ESG Sustainability Advice & Solutions Department of the International Finance Corporation (IFC) principally advising on the effects of wind energy on birds and bats and helping to solve wind-wildlife issues for IFC-financed projects globally. Simon has 20 years' experience working as a research ecologist for on- and offshore renewable energy projects and holds a Ph.D. from the Division of Ecology and Evolutionary Biology, University of Glasgow, UK.

Access to reliable, sustainable and affordable energy is a prerequisite for alleviating poverty, boosting shared prosperity and safeguarding environments, with the development of renewable energy being essential to achieving this goal (World Bank, 2017[1]). Globally, an estimated 840 million people, largely concentrated in the Global South, are without access to electricity (IEA et al. 2019[2]). Wind energy can provide competitively priced electricity, while helping to reduce climate change impacts. At the same time, impacts on biodiversity from wind energy developments in emerging market countries is poorly understood. Specifically, the risks and effects of turbine and associated powerline collisions on bird and bat populations, as well as the effects of wind energy developments on habitats and ecosystems represent key knowledge gaps.

With wind energy predicted to grow in emerging market countries (GWEC 2020a; GWEC 2020b[3]), it is vital that species sensitivities be identified, and that measures be developed to mitigate the effects at the site and landscape levels. This is amplified by the high incidence of globally threatened species likely to be at risk from wind energy projects in emerging market countries. For example, of the 100 globally threatened bird and bat species predicted to be at the highest risk of collision with wind turbines, 82 and 88 percent respectively occur in the countries of the Global South (based on data in Thaxter et al. 2017[4]). While the theoretical modelling on which these studies is based provides provisional guidance on species potentially at risk, there is a paucity of field-based data to corroborate these findings.

Compounding this, wind power is often seen as "green energy", and regulatory planning in some emerging market countries does not require

1 ▸ Gasparatos, A., Doll, C.N.H., Esteban, M., Ahmed, A. & Olang, T.A. (2017) Renewable energy and biodiversity: Implications for transitioning to a Green Economy. Renewable and Sustainable Energy Reviews, 70, 161-184.
2 ▸ IEA, IRENA, UNSD, WB & WHO (2019) Tracking SDG7. The Energy Progress Report.
3 ▸ GWEC (2020a) Africa Wind Energy Handbook. Global Wind Energy Council. GWEC (2020b) Global Wind Report 2019. Global Wind Energy Council.
4 ▸ Thaxter, C.B., Buchanan, G.M., Carr, J., Butchart, S.H.M., Newbold, T., Green, R.E., Tobias, J.A., Foden, W.B., O'Brien, S. & Pearce-Higgins, J.W. (2017) Bird and bat species' global vulnerability to collision mortality at wind farms revealed through a trait-based assessment. Proceedings of the Royal Society B: Biological Sciences, 284.

rigorous baseline biodiversity studies. Even where baseline data is available to planners, energy policies are often developed without reference to it (Gasparatos et al. 2017[5]). Furthermore, as the sector develops, the potential for cumulative effects on susceptible species is likely to increase. This risk is particularly high along major bird migration corridors and in countries where there are clusters of wind projects located near to areas of importance for threatened (migratory or resident) bird and bat populations.

Safeguarding biodiversity and optimizing power output from wind energy should be viewed as being mutually beneficial, but this cannot be achieved without a coordinated approach to wind energy planning that places biodiversity on a par with other aspects. Given this backdrop, we offer five recommendations that could help safeguard at-risk bird and bat populations in emerging market countries, especially those where regulations are lacking.

> ***"With wind energy predicted to grow in emerging market countries, it is vital that species sensitivities be identified, and that measures be developed to mitigate the effects at the site and landscape levels."***

RECOMMENDATIONS

1. ***Strategic landscape planning:*** Sectoral planning for wind energy often focuses on resource potential and other technical factors. At the International Finance Corporation (IFC), we are piloting approaches to integrate environmental and social (E&S) aspects into sectoral planning alongside technical considerations. This approach aims to identify the least risk and highest potential wind power projects before competitive Independent Power Producer (IPP) auctions take place. For biodiversity, this includes consideration of occurrences of threatened bird and bat species in addition to other factors. An integrated technical, environmental and social landscape planning approach would allow governments to focus wind energy development in areas away from the highest E&S risk sites, so that more bankable projects could be brought to the market, subject to on-site environmental and social assessments. Such an approach also facilitates communication and understanding between technical and E&S professionals within government, private sector, financiers and consultancy firms.

2. ***Integrating biodiversity into tendering packages and power purchase agreements:*** The power purchase agreement (PPA) negotiated by the wind power producer and the government (or other offtaker) stipulates, among other things, how much electricity will be produced and its cost, or 'tariff'. As developers typically secure financing after a PPA has been signed, the E&S policies of private sector financiers are generally not factored into the PPA. Embedding E&S requirements, including for biodiversity, within the PPA itself and within government tendering packages would mean that to be competitive, those participating in a tender would need to demonstrate their commitment to good biodiversity management practices. Importantly, it also means that the IPP would cost their tariff considering E&S (and biodiversity) management, rather than it being an add-on required by financiers, after the tariff is already set. Embedding strong biodiversity requirements into PPAs may be the most effective way to transform a market, other than changes to the regulatory framework itself.

AN ARTICLE BY
LORI ANNA CONZO
Global Biodiversity Lead and Senior Environmental Specialist, International Finance Corporation

Lori possesses nearly 20-years' experience specializing in the development of mitigation and management strategies to address biodiversity-related risks and impacts related to private sector developments in emerging market countries globally. She is the lead author of IFC's Performance Standard (PS) 6, Biodiversity Conservation and Sustainable Management of Living Natural Resources (2012) and its accompanying Guidance Note (GN) 6. Lori undertook her postgraduate studies in conservation biology at the University California, Berkeley.

5 ▸ World Bank (2017) The state of electricity access report.

> *Impacts on birds and bats in emerging market countries, which are often data-poor, can be difficult to predict, and curtailment of turbines may be needed to reduce collision impacts on birds and bats.*

3. ***Considering biodiversity in the energy yield assessment:*** An energy yield assessment (EYA) calculates the predicted energy output for a wind power project. EYAs, an element of financial models, are used by developers and financiers to structure projects and to calculate their return on investment (ROI). Impacts on birds and bats in emerging market countries, which are often data-poor, can be difficult to predict, and curtailment of turbines may be needed to reduce collision impacts on birds and bats. Often, the degree of curtailment necessary is not fully understood until the project is operational. If curtailment is needed, and the resulting power loss was not factored into the EYA, expected output may not be realized, impacting the owner's ability to service debt and realize an acceptable ROI. In extreme cases, low output may even jeopardize the PPA. When working in data-poor countries, it is prudent to assume a level of energy loss attributable to bird and bat curtailment (the 'environmental curtailment loss factor') and build this into the EYA, regardless of ESIA (Environmental and Social Impact Assessment) predictions. By doing so, financial models are made more conservative, and project financials are less likely to be adversely impacted in the event of unexpected curtailment. This simple measure could make an enormous difference in the ability of developers to (more easily) adaptively manage and use curtailment as an option, if it is needed.

4. ***Requirements for post-construction fatality monitoring:*** Some emerging market countries may require a baseline survey as a part of ESIAs, but few require post-construction fatality data on birds and bats. Without systematically collected fatality data, the actual impacts on birds and bats will remain largely unknown in developing countries and may be limited to extrapolated effects from studies in more developed countries, where species and areas are only partly comparable. Post-construction bird and bat fatality programs, aligned with good international industry practice, are regarded by wind-wildlife science as being key to understanding the actual impacts of a wind energy project and informing operational phase mitigation measures and adaptive management. It is thus recommended that private sector financiers require post-construction fatality monitoring on every project, regardless of risk. Generating statistically defensible, unbiased bird and bat fatality estimates is dependent on a robust monitoring design that must be informed by wind-wildlife scientists that have a detailed understanding of applying these methods in specific field situations. The science for estimating bird and bat fatalities has advanced substantially in countries with a well-developed wind energy sector, but the latest techniques are still to be adopted by ecologists working in many emerging market countries. Partnering international wind-wildlife specialists with local ornithologists is key to building capacity and to developing a cohort of national wind-wildlife scientists to work on wind power projects in their own regions.

FOCUS
INTERNATIONAL FINANCE CORPORATION (IFC)

International Finance Corporation (IFC), a member of the World Bank Group, advances economic development and improves the lives of people by encouraging the growth of the private sector in developing countries. IFC was founded in 1956 on a bold idea: that the private sector has the potential to transform developing countries. Since then IFC expanded to more than 100 countries, coining the term "emerging markets" and pioneering new markets such as sustainable bonds.

5. ***Coordinated approaches for biodiversity management.*** To adequately address cumulative effects on biodiversity from wind power projects, a coordinated approach at the national level represents good practice. This might take the form of, for example, a centralized body to advise on the planning and management of biodiversity aspects of individual wind power projects and those at the landscape level and the collation and analysis of post-construction fatality monitoring data. There are some good examples from emerging market countries. A flagship effort globally is the Active Turbine Management Program (ATMP) in the Gulf of Suez in Egypt which is undertaken through a joint protocol between the Egyptian Environmental Affairs Agency (EEAA), the New and Renewable Energy Authority (NREA), the Egyptian Electricity Transmission Company (EETC), and the Regional Center for Renewable Energy and Energy Efficiency (RCREEE[6]). Jordan has also been making strides on this topic. While kick-started by IFC in 2017, national stakeholders have taken matters into their own hands and are developing country-specific approaches to implementing standardized requirements and collating fatality monitoring data.

> *"We propose the above five measures for integrating biodiversity in the wind energy sector as they are sometimes overlooked by conservation scientists and/or government agencies in emerging market countries."*

To ensure that the expansion of the wind energy sector does not compromise priority biodiversity values, practitioners, regulators and lenders will need to extend the management of biodiversity risk beyond ESIA application at the site level; develop strategies to effectively mitigate cumulative effects at the national and international levels; and adaptively manage risk throughout the project lifecycle. We propose the above five measures for integrating biodiversity in the wind energy sector as they are sometimes overlooked by conservation scientists and/or government agencies in emerging market countries, yet they have the potential to transform our knowledge of the scale of risks and to substantially improve the safeguarding of susceptible species. ■

6 ▸ https://www.rcreee.org/content/rcreee-launches-first-strategic-and-operational-framework-protocol-evaluation-environmental

How a global farmers' bank works to preserve biodiversity

Frank Nagel, Executive Director, Rabo Partnerships
Lianne van Leijsen, responsible for sustainable business development at Rabobank Group

How can farmers produce food for 10 billion people, while preserving biodiversity – the foundation that food systems rely on? This is a key question guiding the work of Rabobank, one of the world's biggest banks focused on food and agribusiness. The answers to this question are Rabobank's sustainability policy, direct engagement with farmers, partnership with nature conservation organization WWF, and innovative programs.

AN ARTICLE BY
FRANK NAGEL
Executive Director, Rabo Partnerships

Frank Nagel graduated from Erasmus University in Rotterdam, in Business Economics, and started working for Rabobank in 1991. As Executive Director at Rabo Partnerships, at Rabobank, he leads the impact finance initiatives in emerging markets. In an effort to induce system change in the world's food chains, with the ambition of strengthening food security, impact finance and especially blending public and private funds can be regarded as a vital instrument for reaching primary farmers in emerging markets and encouraging the adoption of sustainable agricultural practices.

Biodiversity means diversity of life. And it all starts with soil. Every farmer knows soils are alive. Thousands of insects and earthworms, millions of bacteria and fungi are hard at work on farmlands. They keep the soil aerated, hydrated, fertile, and capturing carbon. Healthy soil can sustain small farmers and their families and can turn large-scale farmers into global market players. The soils are a form of natural capital, really, beneath the surface.

When soils are farmed too intensively, the biological system can break down. This can lead to the farmer using more aggressive inputs, aiming for short-term benefit, while depleting the soil and polluting waterways, losing natural capital in the long term.

When farmers expand to find more healthy soils, this can lead to conversion of forests. The dietary choices of our growing global population[1] result in unintended scaling of such deforestation. According to the Living Planet Report 2020 by WWF[2], habitat loss remains the biggest threat to wild species.

> *"Healthy soil can sustain small farmers and their families and can turn large-scale farmers into global market players."*

1 ▸ The UN estimates the global population will rise to 9.7 billion by 2050 from the current 7.8 billion in 2020
2 ▸ WWF Living Planet Report 2020, pages 20/21

Environmental impacts of food production

Agriculture is responsible for **80%** of global deforestation

80% OF GLOBAL DEFORESTATION

Food systems release **29%** of global GHGs

29% OF GLOBAL GHGs

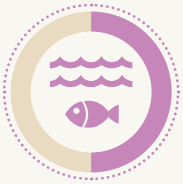
Agriculture acounts for **70%** of freshwater use

70% OF FRESHWATER USE

Drivers linked to food production cause **70%** of terrestrial biodiversity loss

70% OF TERRESTRIAL BIODIVERSITY LOSS

Drivers linked to food production cause **50%** of freshwater bioversity loss



50% OF FRESHWATER BIODIVERSITY LOSS

52% of agricultural production land is degraded

52% OF DEGRADED AGRICULTURAL LAND

Source: Adapted from CBD (2014), GSDR (2019) and ELD Initiative (2015)

HOW CAN MORE FOOD BE PRODUCED WHILE PRESERVING BIODIVERSITY?

Food and agribusiness remain a priority for Rabobank: in 2019, 26% of private sector lending was allocated to this sector[3]. For the bank, a vital question is how to feed 10 billion people in a way that is socially and ecologically sustainable. How Rabobank integrates biodiversity into its work – from policy, to direct engagement, to innovative programs – is as follows.

BIODIVERSITY IN RABOBANK'S POLICIES AND PLEDGES

Rabobank's Sustainability Policy Framework has a section on biodiversity[4], where it encourages clients to adhere to IFC Performance Standard 6[5]. The policy recognizes legally protected areas such as UNESCO World Heritage sites, and Ramsar wetlands. Expectations of clients include not damaging High Conservation Value (HCV) or High Carbon Stock (HCS) areas6. Both HCV and HCS assess the value of a landscape, with indicators for species diversity, ecosystem health, cultural values, and community needs.

AN ARTICLE BY
LIANNE VAN LEIJSEN,
Responsible for sustainable business development at Rabobank Group

Lianne van Leijsen focuses on sustainable finance solutions and new product development to support sustainable transitions in the food and agribusiness sector. She has extensive banking experience working with large global corporates in the food and agribusiness sector over the past 25 years. She is an expert in supply chain finance and cooperative financing. Before joining Rabobank, she worked as a researcher and finance specialist at the Ministry of Finance in the Netherlands. She holds a degree in macro-economics from the University of Groningen, in the Netherlands.

3 ▸ Rabobank Annual Report 2019, page 37
4 ▸ Rabobank Sustainability Policy Framework, page 45/46
5 ▸ IFC Performance Standard 6, on *'Biodiversity Conservation and Sustainable Management of Living Natural Resources'*
6 ▸ See the websites of the HCV network and the HCS approach (with some efforts to harmonize underway)

Rabobank considers the United Nations' 17 Sustainable Development Goals (SDGs) as a guiding framework. SDG15, 'Life on Land', is explicitly related to biodiversity, yet inextricably linked to other SDGs, such as Climate Action (SDG13) and Zero Hunger (SDG2).

In a recent commitment (September 2020), Rabobank was one of 26 financial institutions (FIs) that signed the Finance for Biodiversity[7] Pledge, committing to the following five steps by 2024: Collaboration and knowledge sharing; Engaging with companies; Assessing impact; Setting targets; and Reporting publicly.

BIODIVERSITY AND DIRECT ENGAGEMENT WITH FARMERS

FIs increasingly choose engagement to incentivize clients to produce more sustainably. How directly FIs engage with clients on the ground varies. Asset managers often work through intermediaries, or dashboards with summary indicators. Rabobank has the benefit of direct contact with many farmers from around the world.

In Brazil for instance, staff of Rabobank visit farms annually (with the exceptions of farms that score high on key indicators for two years in a row). It requires clients to demonstrate that the bank's finances do not lead to deforestation, thus going beyond legal requirements. Field visits are combined with data analyses. A key partner is Agrotools[8], which combines satellite imagery with supply chain expertise. The follow-up can be quick: transgressing key indicators (proven deforestation or not complying with a strict improvement plan) can lead to a sustainability manager directly blocking credit lines.

In addition to the Netherlands, Rabobank also works with WWF in other countries, where the partnership was initiated in 2011. WWF NL and Rabobank worked with dairy producer FrieslandCampina to develop the Biodiversity Monitor[9]. Key indicators include proportions of permanent grassland; protein produced in own region; nitrogen surplus; ammonia; CO_2 emissions; herb-rich grasslands; and landscape diversity. FrieslandCampina rewards better performance with a better price, and Rabobank grants these farmers a discount on loans.

Also in Chile, Rabobank works with WWF and salmon farmers towards compliance with the standard for sustainable aquaculture, the Aquaculture Stewardship Council (ASC)[10]. This improves access to markets, as big buyers such as Albert Heijn and Ikea aim to increase the proportion of certified seafood they procure. One of the ASC principles focuses on biodiversity. It has 5 criteria and 18 indicators, including biodiversity in ocean floor sediment, and water pollution.

Also, with guidance from Pipeline Foods[11], Rabo AgriFinance developed the first 'Organic Transition Loan Offering'[12], a framework that gives farmers the option to receive the capital needed for the upfront costs of changing production practices. Farmers can repay when they receive the additional revenue from selling certified organic goods with Pipeline (a major organic trader), ensuring access to markets. Moreover, partners work with third parties that provide technical assistance, making this a 'total solution' combining finance, technical support, and access to markets.

FOCUS
RABOBANK

Rabobank is a cooperative bank, founded by farmers in The Netherlands in the late 19th century. Over time, it has become a leading bank in The Netherlands, serving over 8 million clients domestically with a wide range of services. Internationally, the bank operates in 39 countries and has an exclusive focus on food and agricultural markets. True to its roots, the bank is committed to helping build sustainable and resilient food systems.

7 ▸ Website of the new Finance for Biodiversity pledge, launched on Friday, 25 September 2020
8 ▸ Website of Agrotools
9 ▸ Details of the Biodiversity Monitor can be found in this 25-page report
10 ▸ Website of ASC
11 ▸ Website of Pipeline Foods
12 ▸ Article on website of Rabobank AgriFinance

> *Also in Chile, Rabobank works with WWF and salmon farmers towards compliance with the standard for sustainable aquaculture, the Aquaculture Stewardship Council (ASC).*

AGRI3 FUND: AN INNOVATIVE PROGRAM

In January 2020 at the World Economic Forum in Davos, the Dutch Ministry of Foreign Affairs and Rabobank announced[13] that they would both invest US$ 40 million in the new AGRI3 Fund. The overall ambition of the AGRI3 Fund[14] is to combine sustainable agriculture (including improved rural livelihoods) with forest protection, reforestation, and a reduction of CO_2 emissions. According to Minister Sigrid Kaag, "The AGRI3 Fund provides a unique opportunity to contribute to forest protection and sustainable agriculture at scale, while also helping to transform the financial sector's attitude towards sustainable investments."

The fund acts as a blended finance vehicle, aimed at unlocking US$ 1 billion in total finance. It provides additional de-risking of financial instruments and grants for technical assistance. The fund will be open to participation from commercial banks aiming at sustainable agriculture and forest conservation. In AGRI3, the bank partners with the UN's Environment Program (UNEP), FMO, and IDH, the sustainable trade initiative.

The development of AGRI3 is a result of Rabobank's interest in continuing to innovate and find new ways to protect forests and support the transition to 'nature-positive' agriculture to sustainably feed the growing world population. There are no easy solutions, but the goals are clear, and the examples above show that progress is being made. "As a cooperative bank, we see it as our role to help our clients accomplish the required shift in agricultural value chains," says Wiebe Draijer, Chairman of the Managing Board of Rabobank. ■

13 ▸ Article on Rabobank website of AGRI3 launch
14 ▸ Brochure of the Agri3 Fund

Protecting biodiversity for The Long Run, a holistic approach?

Delphine Malleret King, Executive Director, The Long Run

Faced with the current biodiversity and climate crises, privately protected areas, which play a pivotal role in biodiversity conservation, can improve the resilience of the conservation sector. The private sector brings complementary strengths and skills, in addition to financial resources, to NGO and government conservation efforts. United in their holistic approach, framed by the 4 C's (conservation, community, culture, and commerce), the members of The Long Run work to conserve biodiversity in perpetuity.

AN ARTICLE BY
DELPHINE MALLERET KING
Executive Director, The Long Run

Delphine studied development economics in France, and then carried out her postgraduate studies in marine conservation in the UK and Kenya. Based in Kenya, she has worked for more than 20 years at the interface of Protected Areas (government, community and PPAs) and communities as a freelance consultant across Africa and beyond. Delphine's work focuses on marine and terrestrial conservation, community engagement and socio-economic impact monitoring for local, national and international organisations. She relocated to the UK to take up her position as CEO of The Long Run in 2016.

Despite a long tradition of private conservation efforts going back centuries, (Stolton et al., 2014) distrust has characterised the relationship between the private sector, government, and NGOs. Thankfully, in the face of the current biodiversity and climate crises, this is changing.

Protected areas play a pivotal role for biodiversity conservation, and privately protected areas can strengthen the resilience of the conservation sector (Lemenager et. al., 2014), to help achieve global biodiversity targets. Indeed, beyond financial resources, the private sector brings complementary strengths and skills – such as efficiency, effectiveness, risk-taking, innovation, flexibility, and sustainable financing – to NGO and government conservation efforts. This is essential especially in the context of the COVID-19 pandemic, when it is likely that national parks, many of which are not effectively implemented, are going to struggle to find adequate resources to continue operating sustainably. Under normal circumstances, an average of only 2% of income generated in national parks is reinvested in park management (Balmford et al., 2015).

From a business perspective, investing in natural capital (ecosystems and biodiversity) and social capital (shared values and understanding) has never been this crucial. Not only will there be no thriving business without functioning ecosystems and a healthy society, but also short-term exploitative land use and strategies based solely on profit are no longer acceptable. Increasingly, consumers demand responsible business practices and accountability.

> *"Under normal circumstances, an average of only 2% of income generated in national parks is reinvested in park management."*

> *From a business perspective, investing in natural capital (ecosystems and biodiversity) and social capital (shared values and understanding) has never been this crucial.*

This is certainly the case for tourism, where 76% of consumers say that they will be more concerned about sustainability now than before COVID-19 (Euromonitor International, July 2020) when travelling. Being at the forefront of change and being actively involved in conservation and social development is not only the right thing to do, but also presents a market advantage. Members of The Long Run are leading examples of the mutually beneficial interaction between the private sector and biodiversity, of how nature, people, and business can work together for a more sustainable future.

THE LONG RUN: WITH A SHIFT IN ATTITUDE, BUSINESS CAN BE PART OF THE SOLUTION

Jochen Zeitz (visionary entrepreneur, founder of the Zeitz Foundation and The Long Run) endorses the belief that mitigating negative impacts is not enough and that we have to strive for positive impacts. Founded 10 years ago, The Long Run, then a programme of the Zeitz Foundation and now an independent UK-based charity, hosted by Preferred by Nature (NEPCon), brings together a global community of like-minded people dedicated to protecting biodiversity via commercial business.

Members are tourism businesses that own, manage and influence areas of nature, and other professionals, organisations and businesses that support the core membership in its mission. They are united in their holistic approach, framed by the 4 C's of conservation, community, culture, and commerce. Each member recognises the need to balance these four elements to conserve biodiversity in perpetuity.

Collaboration is paramount for sustainable change to be achieved at scale. To this end, The Long Run supports its members and provides a platform for exchanging knowledge, sharing experiences and innovating together. It also promotes the work of its community to inspire others to do the same. Members' sustainability journeys are benchmarked by The Long Run GER® standard – recognised by the Global Sustainable Travel Council – which celebrates sustainability performance and helps differentiate the members' businesses in the marketplace. The Long Run members continually take stock, reflect, and push boundaries to expand their positive impacts, both on biodiversity and people, whilst seeking to maintain healthy profits.

With this ethos, 40 property members and affiliates together help protect 23 million acres of biodiversity, home to 416 threatened species. Through their impacts on livelihoods and protection of ecosystems, they positively touch the lives of 750,000 people. In 2019, they invested approximately 15 million USD directly in conservation and livelihood development.

> *Motivations for members to protect biodiversity vary and are rooted in business, conservation, and a sense of responsibility.*

HOW TO ENCOURAGE THE PRIVATE SECTOR TO GET INVOLVED?

The Long Run members span five continents and diverse ecosystems, from deserts to coral reefs, from the tropics to the poles, and thus provide a huge breadth of insights into the motivations and challenges facing the private sector involved in biodiversity conservation.

Motivations for members to protect biodiversity vary and are rooted in business, conservation, and a sense of responsibility. In terms of business imperative, healthy ecosystems and biodiversity directly underpin the nature-based tourism sector. The quality of the product – the guest experience – depends on it. Where there is insufficient investment by governments in biodiversity, business could step in. Operating responsibly is not only the right thing to do, but also reduces costs, drives positive impacts, demonstrates credibility, and becomes a unique selling point. Another motivation is bringing resilience to conservation. Where donor models have failed, the private sector can provide an effective alternative. By diversifying income generation, and reducing donor dependence, a business approach increases the resilience of biodiversity conservation initiatives. Another motivation is passion and responsibility. Much of the members' engagement stems from passion and the deep connection they feel for nature. This interest is compounded by a sense of responsibility toward future generations, and making the world a better place, thence a long-term view of land stewardship.

FOCUS
THE LONG RUN

Started as a programme of the Zeitz Foundation, The Long Run is today hosted by Preferred by Nature, one of the world's largest sustainability certification bodies, and, with more than 50 members, The Long Run is the leading global association of Private Protected Areas (PPAs). The Long Run supports, connects and inspires nature-based tourism businesses to protect ecosystems for the benefit of all. Its members and supporters share a vision of business, nature and people working harmoniously together towards long-term sustainability. Collectively, The Long Run helps to conserve over 23 million acres of ecosystems, protects more than 400 endangered species, and improves the lives of 750,000 people.

TACKLING CHALLENGES

Conservation and development go hand in hand. Members believe that demonstrating that conservation and other sustainable land uses are economically competitive (i.e., agroforestry, tourism, and responsible agriculture) is the only way for a broader spectrum of stakeholders to become engaged.

However, as private actors, there are many challenges to engaging in conservation, particularly the accompanying costs and increasing risks. Among the challenges are existing trends – population growth, unsustainable practices, and short-term views –, which put further pressure on natural areas; political instability in some areas; and the failure by many governments to strategically prioritise biodiversity, environmental health and sustainability. These lead to siloed approaches (insufficient knowledge and resource sharing), inadequate policy and legislative frameworks, which in turn undermine efforts by creating disincentives for the private sector to get involved.

Addressing these challenges requires a multi-stakeholder collaborative approach. For many, it is essential that private conservation efforts are further recognised, and that the private sector is engaged as a partner. This would help break up silos and inform the design of policies that support national conservation objectives, encouraging investment in biodiversity. There are many examples of tested, effective incentive systems (IUCN PPA best practice Guidelines, 2018). In South Africa and Brazil, for example, privately protected areas can be gazetted and formalised, gaining similar protection status to national parks.

Financial sustainability is also paramount to ensuring conservation efforts in the long term. The COVID-19 pandemic has highlighted the importance of diversifying income streams and revealed new opportunities. Most members believe that the development of well-designed biodiversity and carbon-offset schemes could become an additional and broader income source, providing incentives to engage in biodiversity conservation. This would increase the resilience of the business model and aid recognition of the value of the service provided.

The impact of the private sector can be significant, despite existing challenges. With passion, persistence, collaborative efforts, and good business sense, some of The Long Run members have secured 10,000 to 100,000 ha of fynbos, desert, rainforest and wetlands, some of which are the last bastion for endangered species, such as the East African black rhino. They demonstrate what is possible when adopting a 4C philosophy and invite others to follow suit to collectively drive change in practices and policy toward a healthier and more sustainable planet. ■

> ***“The COVID-19 pandemic has highlighted the importance of diversifying income streams and revealed new opportunities.”***

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Diversifying funding for biodiversity conservation

Tine Fisker Henriksen, Innovative Finance Lead, UCT GSB Bertha Centre for Social Innovation
Wassa Cisse, Investment Analyst, Bestseller Foundation

Funding biodiversity conservation is no longer a government-subsidy and grant-giving game only. However, a financing shortfall of USD 598-824 billion per year remains. To fill this void, the private sector is mobilising with innovative initiatives, tools and mechanisms. Trailblazing financiers are exploring new investment opportunities, which are as vibrant and colourful as the ecosystems they are built to serve.

FOCUS
UCT GSB BERTHA CENTRE FOR SOCIAL INNOVATION

The Innovative Finance Initiative within the UCT GSB Bertha Centre for Social Innovation partners with governments, enterprises, investors etc. to build the impact investing and innovative finance market on the African continent. The team develops the talent and knowledge that will shape the future of business and finance, and build the impact investing ecosystem by creating new funding mechanisms, networks, etc. Where the right tools don't exist, the team creates them, and has for instance launched two of South Africa's most innovative impact investing structures; The Green Outcomes Fund and the Early Childhood Development Social Impact Bond Innovation Fund.

Conservation finance is moving from niche to mainstream, from philanthropy to investment. However, a financing shortfall of USD 598-824 billion per year remains, representing 80-85% of the required funding (McKinsey and Credit Suisse, 2020). Currently, approximately 80% of the resources invested in conservation are public. While the private sector is rising to the challenge with investments in ecotourism, regenerative agriculture, agroforestry, sustainable aquaculture, and reforestation, more is needed.

With limited ownership and use rights for wild resources, and finite incentives to support conservation, it is often difficult to develop financially sustainable biodiversity models. Governments have limited resources, non-profits are reliant on grant funders, and entrepreneurs struggle to develop bankable, scalable business models. Therefore, private sector investors keen to support biodiversity conservation are often not met with sustainable investment opportunities.

Diversification of the economy beyond ecotourism and public support are needed to promote biodiversity and secure livelihoods. Innovative finance solves this by creating solutions that generate positive social and environmental impacts alongside financial returns.

> *"Private sector investors keen to support biodiversity conservation are often not met with sustainable investment opportunities."*

SUPPORTING EARLY STAGE CONSERVATION ENTERPRISES

Investing in conservation enterprises, especially in emerging markets, is pivotal. Unfortunately, these initiatives are often considered too small or too early-stage by traditional financiers. An example of a non-traditional player is the venture fund affiliated with Conservation International (CI Ventures) that invests in SMEs operating in forests, oceans and grasslands. The fund is committed to building an investment case for conservation and demonstrating the interconnectedness between environmental and social impacts. When appropriate, it even links the cost of capital to the impact created, and the cost of capital may be adjusted to reflect the importance of the impacts. Such funds need access to concessionary capital, or a mix of grant and market-rate capital that offsets the risks and costs associated with early-stage investments.

'BONDING' WITH CONSERVATION

Requiring a much lower risk appetite, one of the most significant innovative finance mechanisms recently has been green bonds. To date, just 5-10% of green bond proceeds have been earmarked for biodiversity (Climate Bonds Initiative, 2019).

Conservation bonds can generate predictable, steady cash flows, through long-term contracts that monetize the sale of sustainably produced commodities, and payments for ecosystem services. Capital is invested to protect natural assets, which in turn generates benefits, allowing a financial return to the investor. For instance, African Wildlife Capital (AWC) pioneered a conservation bond using an interest rebate linked to quantifiable conservation targets.

Several factors have hindered the development of the conservation bond market. The biggest challenge for investors, issuers, and underwriters is articulating and agreeing upon the revenues that can be generated through sustainable land use and conservation projects, and translating the value of ecosystem services into financial terms. The lack of investment-ready conservation projects also results in a mismatch between the projects' limited size and the minimum amount of bond issuance, making it difficult to justify the costs of due diligence. The average size of a green bond issue is USD 150 million (CBI report 2019; Global Landscapes Forum, 2020), and in general, land use and biodiversity projects are unlikely to reach this scale, unless they are bundled into larger investment opportunities. However, if organisations could articulate the financial benefits of sustainable land use and conservation projects, this may attract new types of investors and new sources of capital, and develop the conservation bond market.

Resilience bonds link insurance premiums to resilience projects to monetize avoided losses. This is a source of funding for risk reduction. In 2019, the European Bank for Reconstruction and Development (EBRD) launched a climate resilience bond; in the US, the Forest Resilience Bond (FRB) is aimed at accelerating forest restoration (Blue Forest Conservation, 2020).

AN ARTICLE BY

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As the Innovative Finance Lead at the Bertha Centre, Tine manages multiple projects focused on strengthening the impact investing sector in South Africa and Africa at large. Tine also holds a role as investment manager with the Bestseller Foundation. She has worked on the set-up of multiple innovative finance mechanisms that drive more capital to small and growing business, an example of which is the Green Outcomes Fund in South Africa. Tine holds a M.Sc. in International Business & Politics from Copenhagen Business School.

WASSA CISSE

Investment Analyst, Bestseller Foundation

Wassa Cisse is an investment analyst at the Bestseller Foundation and a global challenge graduate of the African Leadership University, with a focus on Conservation. She also holds a degree in Marketing and Negotiations. Her passion lies at the intersection of climate change, sustainable development, and green finance. Wassa aspires to create systems and models to make conservation efforts more financially sustainable and impact-oriented across the African continent. Hence, her work with the Foundation.

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CONSERVATION FINANCE RE-ENERGIZED

Recent initiatives are catalysing change and accelerating financial flows in established markets; additional funds are enhancing the pool of resources available for conservation.

The debt-for-nature swap (DfNS) has proven successful in protecting key reservoirs of nature around the world. A DfNS can mobilize resources for protecting nature, while reducing the debt burden of developing countries. It is an agreement among the funder, the national government of the debtor country, and the conservation organization using the funds: the funder cancels the debt of a developing country's government; the debt-servicing savings are invested in conservation. The Tropical Forest Conservation Reauthorization Act (TFCA) is one such program that relieves certain U.S. Government debt to generate funds for tropical forest and coral reef conservation.

Recently several organizations have developed approaches for accelerating financing to catalyse change in carbon markets. One, Emergent Forest Finance Accelerator, has created an approach to jumpstarting markets for forest carbon. Dedicated to accelerating tropical forest protection at scale, Emergent connects tropical forest countries to carbon markets to fund the protection for their forests. It buys carbon credits issued by Architecture for REDD+ Transactions (ART) from forest countries and sells them to private buyers.

BLENDED FINANCE FOR BETTER OUTCOMES

Blended finance combines concessionary loans and grants with private investment. It de-risks investments and directs private capital towards projects and geographies that might otherwise be deemed less attractive. Blended finance is particularly relevant in sectors where cash flows and revenue models are difficult to identify.

> *"Recent initiatives are catalysing change and accelerating financial flows in established markets; additional funds are enhancing the pool of resources available for conservation."*

BLENDED FINANCE IS BEING APPLIED TO CONSERVATION IN A VARIETY OF WAYS:

Donor-funded guarantees: In 2014, Althelia Ecosphere joined Credit Suisse to launch the The Nature Conservation Notes to accelerate private sector finance for preserving ecosystems (Althelia, 2015). It supports the conservation and economic development of local communities in about a dozen countries. The Fund generates returns for its investors through sales of sustainable-certified commodities and revenues from ecosystem services. Social and environmental impacts are achieved by financing community-based organizations, biodiversity, and water conservation, as well as climate change mitigation. With a partial guarantee from the US Agency for International Development, risk is halved, and capital is directed to sustainable land-use programmes. Payment is made on performance (Environmental Finance, 2020).

Blended Impact Investment Funds: The Land Degradation Neutrality (LDN) Fund is an impact investment fund for sustainable land use, with a linked technical assistance (TA) facility. By leveraging long-term, non-grant financing, the Fund invests in viable private projects for land rehabilitation and sustainable land management – including sustainable agriculture, livestock management, agroforestry and forestry – worldwide.

Outcomes-based finance: United for Wildlife (a partnership between seven of the world's leading wildlife charities), together with investment banks and law firms, designed and launched the world's first pay-for-results financial instrument for species conservation. After more than three years of development and testing, the Rhino Impact Bond (RIB) has received praise for its innovative design. The RIB has a five-year term and is based on "outcome payments". It transfers the risk of funding conservation from donors to impact investors, by linking conservation and financial performance (Conservation Capital, 2019).

Similarly, the Green Outcomes Fund (GOF) provides outcomes-based incentives to South African fund managers to increase investment in green enterprises. The Fund – designed by the World Bank Climate Technology Program, UCT GSB's Bertha Centre, GreenCape and WWF-SA – aims to achieve clear green outcomes, encourage capital allocation to green businesses by fund managers, and catalyse consistent high-quality reporting of green impacts.

LOOKING AHEAD

There is considerable interest in conservation-related investments from the private sector. These offer financial, environmental, and social returns, as well as portfolio diversification.

All of these initiatives are unlocking funding for biodiversity, thus helping to address the financing gap. None of the sectors – public, private and others – can do this alone: a collaborative approach by investors, funders, philanthropists, and governments is essential, in addition to the promising tools and mechanisms presented.

Incentivising corporate landscape restoration

Samir Whitaker, Biodiversity Technical Specialist, Fauna & Flora International

In the face of the accelerating global climate-biodiversity crisis, and faced with the loss of carbon sinks and ecosystems critical to human survival, there has never been a more urgent need to restore and protect landscapes. Rebuilding environmentally degraded landscapes is crucial to building climate and economic resilience and to protecting soils, watersheds and wildlife. Collaboration among corporate and other partners is necessary to scale restoration up to the landscape level.

AN ARTICLE BY
SAMIR WHITAKER
Biodiversity Technical Specialist, Fauna & Flora International

Samir Whitaker has worked on environmental management with the corporate sector for over 15 years, first with a civil engineering company and in the extractives industry and then with several international NGOs. His work has focussed on helping companies screen and manage environmental risk, and developing action plans such as biodiversity action plans and offsets strategies to meet lenders', such as the International Finance Corporation, requirements. Samir has an MSc in Environmental Chemistry and an MPhil in Conservation Leadership, focusing primarily on biodiversity offsets in the mining sector.

The UN has declared this the *Decade on Ecosystem Restoration*. The aim is to halt degradation and restore ecosystems in order to achieve intrinsically-linked global goals for climate, nature (including biodiversity) and human wellbeing (including food security and poverty reduction).

Ecosystem restoration applies to mangroves, seagrass, forests, among others; it can entail natural and assisted regeneration, agroforestry, soil enhancement, and improved and sustainable management across both terrestrial and marine land and 'aqua' scapes. Any degraded ecosystem (for example, mines, farms, forests, fisheries) offers an opportunity for restoration. Restoring ecological integrity also includes large-scale landscape restoration (for example, of a plateau or mountain range).

Natural resources such as minerals, water, and fertile land are unequally distributed across the globe, and tend to be clustered. In many cases these areas overlap or are adjacent to areas of high biodiversity value (for example, bauxite, titanium and nickel are found predominantly in forested areas). This leads to aggregations of company operations, such as mining, that depend on access to these resources.

While many company operations bring benefits to communities (including economic opportunities, improved healthcare and access to clean water and better security), they often also bring negative impacts: degraded forests, depleted resources, polluted surrounding landscapes and water courses. In some territories, the degradation is still in progress, including:

- Private-sector operations in Borneo (palm oil) and South Sumatra, Indonesia (coal mining)
- Large-scale mining in Guinea (for bauxite and iron ore) and central-southern Brazil and Liberia (iron ore)
- Artisanal and small-scale mining in the Amazon basin (Zamora-Chinchipe, Ecuador) and Congo basin (Equatorial Guinea, Gabon, Republic of Congo, the DRC, Central African Republic, Cameroon).

FROM DEGRADATION TO RESTORATION

In other territories, degradation has already taken place, without any closure or restoration; these include mining sites such as the Falémé River in West Africa, where there is ongoing degradation (siltation of water courses and leaching of toxic metals).

The private sector in general has minimal engagement with restoration programs on a landscape scale; the reasons are varied, relating mainly to perceptions – of limited opportunities, attached risks, exposure to liabilities, lacking mandates; also of anti-trust laws (hindering intra-sector collaboration).

As a result, few companies integrate landscapes into their environmental and social programmes, and few external influencers such as governments and lending institutions (for example, the World Bank) require this. 'Areas of influence', the areas over which a company's impacts are experienced, tend to be defined on a case-by-case basis. In addition, monitoring and evaluation approaches rarely – especially in the mining sector – look outside companies' direct operations, and reporting on performance rarely includes landscape metrics.

In FFI's view, companies could engage more actively in restoration and would benefit from it. Doing so across landscapes in an integrated, strategic way, in well-defined partnerships (private sector, NGOs and governments) would enable this.

The opportunities are many. Vast areas of degraded land and water courses need restoration, which could safeguard species, protect human livelihoods and access to ecosystem services, as well as re-establish environmental connectivity. Collaboration among corporate partners can lend long-term legitimacy and stability to such initiatives, and can bring resources (financial and technical) and landholdings for restoration. The benefits to companies are great, and include greater consumer trust, meeting and exceeding regulatory restoration targets, reduced water risk, and financial benefits from carbon sequestration to name just a few.

MAKING PROGRESS, STEP BY STEP

Steps to explore and develop these crucial landscape restoration opportunities could entail:

1. Developing a global spatial map of the opportunities. Much of the data exists.
2. Shortlisting the most feasible opportunities using environmental and restoration cost criteria, and choosing those with the highest cost-benefit ratio. These could be further shortlisted through discussions with local companies.
3. Creating blueprints for the shortlisted landscapes, building on, and going far beyond government-regulated restoration requirements, to possible revenue streams from restoration-linked carbon sequestration.
4. Creating partnerships with government agencies and 'influencers' such as development banks and other multi-lateral funders, to capitalise these projects.
5. Producing a tool for organising collaborations, which could also provide guidance and sector-specific case studies.

A number of successful restoration initiatives and models exist, including the Frugal Rehabilitation methodology used for artisanal mining in Mongolia[1], FFI's own work in restoring and protecting mixed-use rangeland in Kenya and in the Araucaria forest in Brazil, and the cement sector's restoration of limestone and aggregate quarries to priority habitats in Europe. The urgent need, and opportunity, is to scale these approaches up to the landscape level – by bringing in more partners and creating joint restoration strategies to pool and access greater resources – to restore far greater, interconnected, ecological landscapes.

FOCUS
FAUNA & FLORA INTERNATIONAL

Fauna & Flora International (FFI) is the world's first international conservation organisation. Addressing the often conflicting needs of economic development and environmental conservation represents a key component of FFI's work. Proactive engagement with the private sector – embedding biodiversity into the full life cycle of business operations, applying both strategic and pragmatic management approaches – has been a core part of the organisation's activities for close to two decades. Today FFI has over 140 projects in over 40 countries worldwide.

1 ▸ https://www.researchgate.net/publication/333584358_The_Frugal_Rehabilitation_Methodology_for_Artisanal_and_Small-Scale_Mining_in_Mongolia_An_Innovative_Approach_to_Formalization_and_Environmental_Governance_with_Potential_for_International_Adaptation_

Protected area management: how can the private sector play a part?

Jean Labuschagne, African Parks
Luthando Dziba, SANParks

We are depleting our natural capital, which sustains lives and economies. A cost-effective way to conserve natural capital, and to restore our natural balance sheet to its proper order is conserving intact systems through protected areas. The optimal way of managing these is through sector (public, private, nonprofit) partnerships: African Parks and SANParks are examples. The economic and social impacts of these partnerships can be extended by taking a landscape approach, which recognizes that protected areas form a part of larger public, private and communal areas.

Much of the global economy depends on natural capital – providing critical services and ensuring resilience – a component of the planet's balance sheet. The World Economic Forum estimates that around 50% of global GDP (US$ 44 trillion) depends on nature[1]. Yet, the rate at which we are exploiting our natural capital is unsustainable: we currently require around 1.6 of Earth's per-year[2] to sustain our current rate of resource use. Managing and conserving intact systems through protected areas is one of the most cost-effective ways to conserve natural capital in the long term, and to unleash significant socio-economic benefits.

A recent McKinsey study estimates that conservation management using the "30 by 30" target (protecting 30% of lands and oceans by 2030) could produce $300 to $500 billion in GDP and provide 30 million jobs in ecotourism and sustainable fishing alone[3].

The private sector can play a role in managing protected areas, given their need for sustainable management and the financial constraints in public sectors. Potential areas of involvement are explored below.

> "*Often, private sector support can leverage other donors and bilateral/multilateral grant support, creating a multiplier effect and enabling rapid scaling up.*"

1 ▸ World Economic Forum in collaboration with AlphaBeta "The Future Of Nature And Business" – 2020
2 ▸ Global Footprint Network – Ecological footprint (https://www.footprintnetwork.org/our-work/ecological-footprint/)
3 ▸ McKinsey & Company, Valuing nature conservation – A methodology for quantifying the benefits of protecting the planet's natural capital, September 2020

SUPPORTING MANAGEMENT MANDATES

Protected areas – including national parks and reserves – are national assets, and governments are responsible for the legislation governing them. Effectively implementing this entails the following five elements:

- **Governance structures** ensuring clarity of responsibilities, transparency and accountability, with appropriate checks and balances between governments (policy and targets) and the executing entities;
- **Management capacity** to implement the business and conservation principles of planning, monitoring, and adapting;
- **Building a constituency for conservation**, by involving communities living in and around protected areas, ensuring that they benefit from these areas and participate in their protection.
- **Law Enforcement**, to protect biodiversity and support local/regional safety and security (necessary conditions for the socio-economic development of the area);
- **Ensuring proper human and financial resourcing and management**, by employing and capacitating appropriately qualified staff, and ensuring adequate resources are allocated or mobilized to finance critical operations.

Management mandates can take different forms, from direct government management to partnerships between NGOs and governments (public-private partnerships). SANParks and African Parks – the focus of this article – illustrate these approaches.

SANParks is the public agency tasked with protecting South Africa's natural and cultural heritage, including its state-owned national parks and reserves. With its long history of conservation, it develops strategy and sets targets, provides budget allocations for annual work plans, establishes and maintains infrastructure, recruits and manages the park workforce, monitors and evaluates progress, promotes tourism and sustainable enterprise, and manages both the extractive and non-extractive sustainable use of resources, among others.

The public-private partnership model, as a conservation solution, was pioneered by the non-profit African Parks. It has been managing and funding protected areas in partnership with governments since its founding in 2000. Under this model, a long-term mandate is secured between a national government, the legislative authority and owner of the asset, and African Parks, who manages it within an agreed strategic framework. This clear separation of responsibility ensures accountability to the government partner.

Regardless of the approach adopted, additional private sector actors are needed to maximize the impacts and social returns on investment (SROI). This can come in the form of operational or project-based support (e.g. healthcare, education), in-kind expertise and donations and endowments, allowing for long-term financial stability and risk mitigation, as well as through ecotourism and activity-based income-generating private sector operations. The SROI is historically evidenced by changes in biodiversity, community livelihoods, safety and security. Often, private sector support can leverage other donors and bilateral/multilateral grant support, creating a multiplier effect and enabling rapid scaling up.

AN ARTICLE BY
JEAN LABUSCHAGNE
African Parks

Jean was brought up in national parks in Africa, and went on to study Conservation and Ecology. For the past 8 years, Jean has been working with not-for-profit African Parks, and currently serves as their Director for Conservation Development and Assurance, overseeing new project development as well as assuring organizational consistency and performance management. Prior to her current role, Jean has also been based in Zakouma National Park in Chad, assisting with tourism development, and spent 4 years in Garamba National Park, in the Democratic Republic of Congo, as Special Projects Manager.

LUTHANDO DZIBA
SANParks

Luthando is the Managing Executive responsible for the Conservation Services Division at South African National Parks (SANParks). The division oversees Scientific Services, Veterinary Services, Conservation Planning and Cultural Heritage. He also serves as the Co-chair of the Multidisciplinary Expert Panel of the UN Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES). Before joining SANParks, he managed the Ecosystem Services research area at the Council for Scientific and Industrial Research (CSIR), which included three innovative research groups in the areas of Biodiversity and Ecosystem Services, Coastal Systems and Earth Observation.

GENERATING REVENUE STREAMS FROM CONSERVATION-LED ECONOMIES

State-owned protected areas serve as catalysts for economic development in the communities adjacent to them and make important contributions to the overall local economy and national GDP.

Tourism is often the primary revenue-generating activity of protected areas, playing an important role in their financial sustainability. It has also been one of the most significant examples of private sector involvement in conservation management. Concessions are granted to the private sector in and around protected areas, resulting in the development of lodges, tourism-related infrastructure, various tourism offerings (from community guiding to high-end luxury experiences) and the promotion of tourism in outbound markets, with the revenue ideally feeding back into the protected area and surrounding communities.

“Tourism is often the primary revenue-generating activity of protected areas, playing an important role in their financial sustainability. It has also been one of the most significant examples of private sector involvement in conservation management.”

The benefits for local and national economies along the value chain are significant. Prior to COVID-19, over 418,000 people derived their livelihoods from tourism in South Africa, roughly equivalent to the number of jobs created in South Africa’s mining sector[4].

Payment for ecosystem services is another potential revenue stream involving protected areas and the private sector. For example, protected areas play a significant role in climate change mitigation, storing carbon dioxide in vegetation and soils. According to IUCN, currently they store about 12% of terrestrial carbon stocks[5]. Thus, protected areas lend themselves to the voluntary carbon offset markets and private sector partners can play a vital role by purchasing carbon credits, and this could be the entry point for holistic investment and support, including direct support, biodiversity offsets, water preservation, soil quality.

THE LANDSCAPE APPROACH: PRIVATE SECTOR PROMOTION OF SUSTAINABLE LONG-TERM DEVELOPMENT

Developing a landscape approach, by balancing competing land uses and activities, is key to the long-term sustainable development of any system. As such, it is important to recognize that protected areas form part of broader landscapes comprising public, private and communal areas that share a common future. Although both the public and private sectors can play several important roles in bringing stability to these landscapes, the private sector brings more value as a proportion of land managed. Private sector actors in these areas can procure from them, creating sustainable value chains that fuel community enterprises linked to the protected areas. By connecting protected areas with buffer areas (e.g. through managing adjacent private concessions), secondary public protected areas (like game management areas, and communal protected areas) provide opportunities for expanding the contiguous conservation landscape and its benefits.

4 ▸ Third South Africa National Biodiversity Assessment (NBA), 2019
5 ▸ IUCN – Briefing Paper - December 2019 – Protected Areas and Climate Change

The Greater Kruger National Park (GKNP) is a good example of the landscape approach to conservation. This is a network of protected areas, encompassing the Kruger National Park (KNP), several provincial reserves, highly commercialized private nature reserves and high-density rural communities. While KNP serves as the core, 20 private reserves within the landscape add more than 200,000 hectares to Kruger's 1.9 million hectares, and they are allowing for common ecological management of the entire area, while maximizing the economic benefits. Thus, 57% of the economic impacts originate from the private reserves occupying only 15% of the total land area[6].

Maintaining healthy ecosystems is more cost effective than trying to restore or replace them, taking into account costs to public health and global GDP. National protected areas have the legislative imperative – they are demarcated, have a clear mandate, and can anchor larger ecosystems.

Studies suggest that 30% of the planet needs to be put aside for nature in order to ensure our survival and to maximize the benefits we – including our economies[7] – obtain from the natural world. This merits the involvement of every sector in finding mechanisms and solutions for ensuring the protection of nature. Yet protected areas must also be effectively managed and financed to unlock their benefits. The private sector has an important role to play in complementing public sector investment to ensure these areas are conserved in perpetuity, through funding and management in partnership with governments and through unlocking their potential by creating sustainable conservation-led economies around them. The Covid-19 pandemic has had a devastating impact on nature-based tourism, which provided much needed funding for protected areas; this has resulted in a funding opportunity. Strategic public-private partnerships bring the responsiveness and speed to drive innovations and restore our natural balance sheet to its proper order.

FOCUS

AFRICAN PARKS

African Parks is a conservation nonprofit that rehabilitates and manages national parks, in partnership with governments and local communities. With the largest area under protection of any NGO in Africa, it currently manages 19 national parks and protected areas in 11 countries across Africa, covering over 14.2 million hectares.

SANPARKS

State-owned South African National Parks (SANParks) sustainably develops, protects, expands, manages and promotes South Africa's national parks. This entails innovation, excellence, responsible tourism and just/fair socio-economic benefit. SANParks currently manages 20 national parks, including three World Heritage Sites and 10 marine protected areas. It is the largest tourism entity in South Africa, providing more than 15,000 tourism beds and annually attracting more than seven million visitors to its national parks.

6 ▸ Summary of the GKNP Economy - April 1, 2016 to March 31, 2017
7 ▸ McKinsey & Company, Valuing nature conservation – A methodology for quantifying the benefits of protecting the planet's natural capital, September 2020

1ST QUARTER 2021

Private Sector & Development

Private Sector & Development (PS&D) is a quarterly publication that provides analyses of the mechanisms through which the private sector can support the development of southern countries. Each issue compares the views of experts in different fields, from academia to the private sector, development institutions and civil society. An extension of the magazine, the PS&D blog offers a wider forum for discussion on private sector and development issues.

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