



KfW Development Bank

# »»» Materials on Development Finance

## Protecting nature's riches, preserving the basis for our existence.

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Biodiversity at KfW Development Bank

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## Introduction and Executive Summary

Several dozen species perish every day. This is why scientists are already talking about mass extinction, as important ecosystems are being lost around the world, and with them, important services that nature provides to humans. If we imagine the entire history of Earth as one 24-hour day, humanity has only been living on this planet for two minutes. In this short time, however, it has already overexploited three quarters of the globe. In order to preserve the basis for humanity's existence, we need to protect the remaining havens for nature.

If species loss continues at its current rate, it will be impossible to achieve 80% of our sustainability targets, because everything depends on nature: food, water, medicinal herbs, raw materials. Nature is not just pleasant to look at and restorative to be around; it also provides a large number of services without which humans cannot survive. And once again, COVID-19 has clearly shown the consequences we can expect when forests are burned down, entire regions are destroyed and wildlife is wiped out: it makes it easy for viruses to spread. Protecting areas of nature must be seen as a priority on a level with climate change, not least with a view to preventing these zoonoses. Otherwise we face an existential crisis.

Preserving biodiversity has been important to KfW Development Bank for a long time now. It has over twenty years of experience in this area and currently promotes over 600 conservation areas in over 60 countries. These cover a total area of at least 1.6 million km<sup>2</sup>, which is more than the area of Germany, France, Poland and Italy put together. KfW's activities focus on Latin America and Africa. In addition to its goal of increasing the size of the area under protection – scientists and NGOs recommend 30% by 2030 – KfW is also involved in managing these areas effectively and fairly and ensuring the social and economic well-being of those living nearby. This is why its projects adhere to strict international social and ecological standards.

KfW is among the trailblazers when it comes to developing innovative financial instruments for sustainable conservation. KfW – on behalf of the German Federal Government – has created several exemplary funds that have taken conservation to a new level both conceptually and financially; examples include the "Caucasus Nature Fund" for conservation in the Caucasus, and the "Blue Action Fund" to promote marine conservation worldwide. KfW is currently working with other stakeholders to design the "Legacy Landscapes Fund". By 2030, it should have helped to ensure that the most important conservation areas in partner countries have robust financing, thereby preserving them. This is why KfW, on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ), is setting up a trust that also involves numerous other donors, including philanthropists. The fund is due to start its operational activities in 2021.

KfW's overall aim is to turn the tide on biodiversity loss. Conservation areas play a key role in this, but they are not the only tool. Sustainable agriculture, fishery and forestry are also important in helping to end the unprecedented and dangerous loss of biodiversity and reverse the trend.

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# 1. Introduction

Whether it's food, water, construction materials or medicinal plants – nature, in all its variety, forms the basis for human survival; forests provide a habitat for the majority of animal and plant species on Earth and they offer a home and a source of income to nearly two billion people. The seas give us food, regulate the climate and produce half of the oxygen we breathe. Intact ecosystems also increase resilience in the face of natural disasters and climate change. In short: the protection and sustainable use of biodiversity ensures our survival.

And yet, this diversity is under threat from forests being destroyed, animals being poached, soils being overcultivated, oceans being polluted and overfished, natural resources being depleted, and an increasing number of areas being sealed. Alongside changes in land use and overexploitation, climate change is now one of the main drivers of species loss. The preservation of biodiversity has long been a major concern at KfW Development Bank and it will play an even greater role going forward in light of the current threats. KfW's global commitment in this area is based on the German Federal Government's specifications and international treaties.

The Convention on Biological Diversity (CBD) provides the binding legal framework. Almost every country in the world has now ratified this convention. Its main objectives are to ensure the protection and sustainable use of biodiversity and natural resources as well as the fair distribution of the resulting economic gains. Equal opportunities also play an important role in the convention. In 2010, the parties of the CBD approved a "strategic plan" with 20 "Aichi Targets". These are guiding principles for global action and implementation at national level during the UN Decade on Biodiversity 2011–2020. However, the strategic plan expires at the end of 2020. This is why it is now time to review whether and to what extent the targets have been met, while also drafting a new strategy for the years to come.

Although measures to conserve biodiversity are having an impact, losses are increasing overall. None of the Aichi Targets has been met, which puts other global targets at risk as well. In its latest report, the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) makes clear that it will not be possible to achieve 80% of global Sustainable Development Goals (SDGs) and key aspects of the Paris Agreement without effective measures to preserve biodiversity. As a result, it assesses that dramatic loss of biodiversity is just as significant as climate change. The World Economic Forum's Global Risk Report now even lists biodiversity loss as a global top risk<sup>1</sup>:

## Alarming

Up to a million species are at risk of extinction and, for many, this will occur in the next few decades. Today, the rate at which species are dying out is between ten and one hundred times higher than the average rate over the last ten million years.

## The most important factors

The main drivers of biodiversity loss are changes in land use, general overexploitation, climate change, environmental pollution and the spread of invasive species.



Source: World Economic Forum / Global Risks Report 2020

<sup>1</sup> <http://reports.weforum.org/global-risks-report-2020/shareable-infographics/>

The draft of the new 10-year strategy (Global Biodiversity Framework (GBF)), which the CBD signatories are currently negotiating, sets out global targets to be achieved by 2050, and action-based interim targets to be achieved by 2030. They are intended to reduce biodiversity loss while also meeting humanity's needs via sustainable usage and benefit sharing. They are also supposed to point out solutions and ways that biodiversity can be taken into consideration in other areas of societal development. All of this acknowledges the fact that protected areas are important, but that they alone will not be enough to end biodiversity loss.

The CBD has resolved to design new targets that are both ambitious and realistic – a difficult task, and one that the signatories are now struggling with. At the latest, a decision on this will be taken at the 15th Conference of the Parties, which is likely to be held in autumn 2021. Active participation by all relevant stakeholders, especially indigenous people and local communities, is important to achieving the targets. However, it is not yet clear where the funding, capacity and technology needed to make the targets a reality will come from.

KfW is supporting the German Federal Government in making its targets more ambitious and then putting them into practice. In 2008, Chancellor Angela Merkel agreed to provide an annual budget of EUR 500 million for the conservation of biodiversity from 2013 onwards. This agreement was kept. KfW now manages the disbursement of just over half of these funds. This publication provides an overview of how these funds are used and which specific projects and programmes they promote.

### The impact of humans

Around three quarters of the world's land and around two thirds of the sea have been altered through human activity. Among other things, this has led to the loss of more than 85% of wetlands in the past 300 years, half of living coral has disappeared since 1970, and the amount of forest worldwide is only 68% of what it was in the pre-industrial era.



Hilly forest landscape in Central America: forests are essential to our survival. Photo: KfW Photo Archive/Bernhard Schurian.

## 2. Biodiversity at KfW

Through the work of KfW Development Bank, Germany is one of the world's biggest donors for the conservation of biodiversity. KfW currently promotes 225 projects in 35 countries and 14 cross-border project regions which have the primary goal of protecting biodiversity. The total volume of all projects that have biodiversity as either a primary or secondary goal amounts to some EUR 2.6 billion<sup>2</sup>. Measures that pursue biodiversity conservation as a secondary goal are taken into account on a pro rata basis of 20% of the project volume. Latin America receives the largest share of the funds, followed by Africa, which receives almost one third.

### Comparison

Germany is one of the world's most important donors in the field of biodiversity conservation.

### Projects under implementation 2019 (in EUR million)

Budget and market funds<sup>1</sup>

	BMZ	BMU	Mandats	Total
Africa	808.7	6.3	1.9	816.9
Asia	395.9	45.1	0	441.0
Europe	217.7	6.5	3.2	227.5
Latin America	718.3	66.4	180.9	965.5
Supraregional <sup>II</sup>	179.3	0	0	179.3
<b>Total</b>	<b>2,319.8</b>	<b>124.3</b>	<b>186.0</b>	<b>2,630.2</b>

Source: own representation

<sup>1</sup> figures rounded

<sup>II</sup> Global Crop Diversity Trust Fund & Blue Action Fund

The portfolio continued to expand between 2015 and 2019. At EUR 793.9 million, the total volume of the 46 programme appraisals from 2019 was significantly higher than in previous years. In light of the continuing loss of species, the figures for biodiversity conservation are likely to increase further. In 2019, the total volume of the 49 new financing agreements was around EUR 480 million. This is almost four times the figure in 2016 (EUR 125.7 million).

After a very high level of disbursements in 2017 and 2018 due to an increased number of commitments in the previous years, disbursements decreased in 2019: compared to the previous year, the total decreased by around 30% to approximately EUR 400.7 million. The main clients in the field of biodiversity/natural resources are the Federal Ministry for Economic Cooperation and Development (BMZ) and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

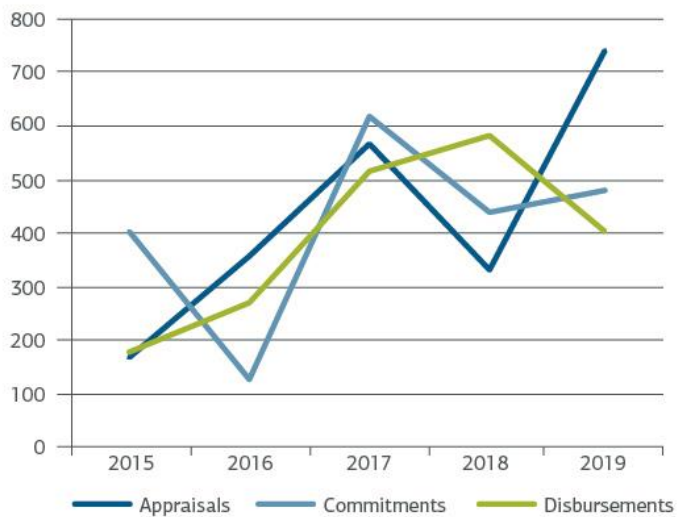
### Commissioned by BMZ

KfW Development Bank's main clients in relation to biodiversity and natural resources are the Federal Ministry for Economic Cooperation and Development (BMZ) and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

<sup>2</sup> Total for all ongoing programmes as at 31 December 2019



## Appraisals, commitments and disbursements for biodiversity projects 2015-2019 (in EUR million)



Source: own representation

### Upwards trend

The overall trend points upwards. Because conservation projects are long term, shifts between years are possible.

Since 2009, the commitments for biodiversity have also included “market funds”. These are funds that KfW picks up on the market and passes onwards to partner countries as low-interest loans. The – heavily fluctuating – proportion of these funds in promotional commitments reached a high of 39% in 2017. The beneficiaries were emerging economies like India, Colombia and Mexico. Use of market funds is likely to increase significantly in future, particularly in emerging economies.

## Conservation areas financed by KfW worldwide (2019)<sup>I</sup>

	World	Africa	Asia	Europe	Latin America
Number of areas	602	104	94	33	367
Countries	66	23	14	6	23
Surface (in 1,000 km <sup>2</sup> )					
Total	1,618	601	197	10	810
Forests (mostly tropical forests)	988 (61%)	146	155	5	682
Steppes and savannas	425 (26%)	403	16	0	6
Coastlines and seas	189 (12%)	49	26	0	114
High mountains	15 (1%)	3	0,1	4	8
Inland waters	1 (0.1%)	0.3	0.2	0.5	0
Number of ongoing projects <sup>II</sup>	108	51	18	15	20
Project volume (in EUR million)	1295.1	570.7	224.9	167.2	256.3
Disbursements 2019 (in EUR million) <sup>III</sup>	169.5	51.2	28.6	20.9	43.9

Source: own representation

<sup>I</sup> figures rounded

<sup>II</sup> In the second part of the table four supraregional projects are included in the totals that cannot be assigned to a continent (Blue Action Fund): the current project volume is EUR 76.1 million, EUR 25 million of which was disbursed in 2019.

<sup>III</sup> Disbursements for all projects active in protected areas on 31.12.2019, therefore also including payments outside protected areas. Projects exclusively active outside protected areas (e.g. activities for the resident population) are not included. The figure is not comparable with the previous publication 2018, as it was obtained differently.

## Several hundred areas

KfW supports more than 600 conservation areas in 66 countries worldwide. In 2019, the volume of ongoing programmes totalled close to EUR 1.3 billion.

The marine conservation areas receiving support cover an area of nearly 190,000km<sup>2</sup>, representing 12% of the total protected area. This proportion is likely to increase further in the next few years, due in particular to the funding activities of the Blue Action Fund. This fund is a non-profit trust for coastal and marine conservation set up by the Federal Ministry for Economic Cooperation and Development and KfW in 2016.



## Aim of promotion

Working towards the goal of preserving as many natural and near-natural habitats as possible, KfW is active in the following areas:<sup>3</sup>

- **Terrestrial** (around EUR 1,113 million) and **marine** (around EUR 176 million) **conservation areas and systems**: identifying new areas and protecting existing ones by improving equipment and infrastructure and management as well as securing permanent financing
- including **forest conservation** (areas with formal protected status) (around EUR 564 million)
- **Forest management** (around EUR 871 million)
- Forest conservation as **climate change mitigation** (Reducing Emissions from Deforestation and Forest Degradation, REDD) (around EUR 502 million)
- **Forest and Landscape Restoration** (FLR) (around EUR 481 million)

## Promotional policy

KfW's goal is to preserve natural habitats as fully as possible.

## Instruments and standards

The principles of environmental and social due diligence and sustainability are, in accordance with the bank's Sustainability Guideline,<sup>4</sup> central themes for KfW Development Bank, including in the field of biodiversity. All measures undergo a structured environmental and social impact assessment (ESIA). The ESIA is intended to identify any foreseeable negative effects and risks that a project may have on the environment and on matters related to society and human rights. Identifying these factors enables suitable measures to be applied so the effects can be avoided, reduced to an acceptable minimum or balanced out.

The benchmarks for the assessment process are the World Bank Group's Environmental and Social Standards, the International Labour Organisation's (ILO) core labour conventions, additional stipulations set out by the BMZ on matters such as human rights, and recommendations in the Food and Agriculture Organisation's Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT).

One of the interdisciplinary issues within the assessment process focuses in particular on avoiding risks to human rights during biodiversity projects, for example, in relation to indigenous people and the land rights of local communities. Having as small an impact as possible on local livelihoods and opening up alternative sources of income and social-economic development opportunities to people living in conservation areas are key elements of sustainable conservation projects.

## High standards

Conservation at KfW adheres to high social, ecological and human rights standards. These are based on the relevant international standards and agreements.

<sup>3</sup> Projects often contribute to more than one aim; this may mean that some are counted multiple times. This is why the total amount cited here is higher than the total volume for the projects.

<sup>4</sup> KfW Sustainability Guideline (2016): Assessment of Environmental, Social and Climate Performance. Principles and Process

## 3. Biodiversity by subject area

### 3.1 Conservation areas

Outstanding examples of the richness of nature need special protection as they form part of our identity, culture and history. That is why it is important to many people that, for example, the coral reefs of the Caribbean, the gorilla population of the Congo Basin, and the tropical rainforests of Sumatra are kept intact for future generations. An important tool for preserving these precious natural resources are conservation zones, particularly national parks.

Conservation areas are also crucial to protecting the climate and adapting to climate change. Intact ecosystems can store more carbon and are better able to cope with the effects of climate change.

#### Southern Africa: training for wildlife rangers

In Southern Africa there are now 18 transfrontier protected areas, including KAZA, the largest network of protected areas in the world. The name stands for “Kavango Zambezi”, the two main rivers in the region, and it is around the same size as Spain. Protecting and managing so much land efficiently requires a sufficient number of well-trained personnel. This is why the WWF South Africa together with the Peace Parks Foundation set up the Southern African Wildlife College in 1997.

The main campus of this training centre for nature conservation is located on the western edge of the world-famous Kruger National Park. The park is home to around 850 species of animal, including up to 8,000 rhinoceroses. The college is considered to be one of the best schools of its kind in Africa and it trains rangers in all disciplines relevant to natural resource conservation and tourism. Around 20,000 young people have now learned not only about park management, ecosystems and biodiversity, but also about poaching, the neighbouring communities and how to ensure they are involved where appropriate, as well as about various ethical, moral and human rights aspects.

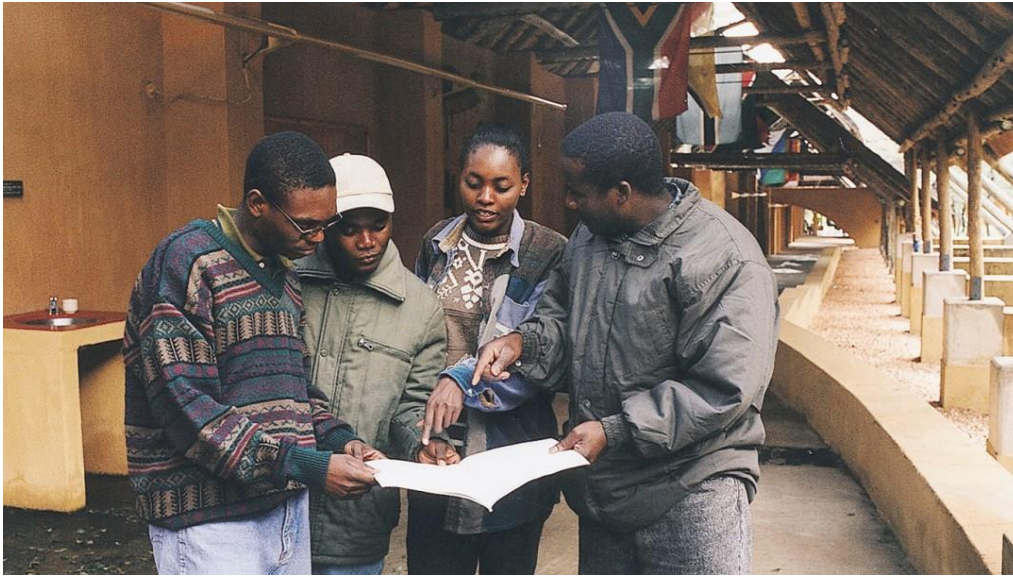
This is because a ranger's duties stretch far beyond conservation. They must be in a position to understand the interests of the local population, negotiate use contracts and help to create plans and maps. The training courses therefore also include units on participatory nature conservation and community-based approaches to natural resource management. Important responsibilities also include talking to the neighbouring communities about the importance of conservation while also taking into account their opportunities to generate income. In order to keep up with the latest thinking in this area, the college's curricula are continuously adapted to reflect international guidelines and standards. The teachers are internationally recognised experts in their respective fields. All this taken together guarantees a high-quality standard of training.

KfW has been promoting the Southern African Wildlife College on behalf of the German Federal Government since 1995, providing a total of EUR 9.0 million. In the initial phases, it helped with construction of the college itself. Later on, KfW financed the further expansion of the campus and the field ranger camp using environmentally friendly materials and technologies. Further investments in regional training are in the pipeline. These include, for example, mobile training units that make it possible to teach outside the main campus in the respective protected areas of the region. KfW also finances scholarships for talented but poor students, including seven scholarships each year just for young women.

The graduates take their knowledge about biodiversity and environmental protection and about the interaction between humans and nature not only back to their communities, but also to other countries. They now work across the entire region. They are all there to help bring an end to the depletion of natural resources in a part of the world where nature is particularly rich and bountiful. And they will also ensure that the many parks in Southern Africa fulfil their promise to protect biodiversity in a sustainable manner while providing local people with a sustainable livelihood.

#### Conservation in Africa

Southern Africa is home to the world's largest network of conservation areas, covering an area around the size of Spain.



Trainee rangers in Southern Africa at a briefing. Photo: WWF/SAWC

Conservation has long been a traditional part of German development cooperation. KfW has over 20 years of experience with projects in this field and understands how to intelligently combine conservation and sustainable economic growth. It is a global leader when it comes to developing and implementing innovative financing solutions for areas including conservation.

On behalf of the German Federal Government, KfW currently contributes to the financing of nearly 600 conservation areas in over 60 countries around the world, covering a total area of around 1.6 million km<sup>2</sup>. That is more than the area of Germany, France, Poland and Italy put together. Its promotional activities focus on Latin America and Africa. This focus includes 22 areas that have been declared as UNESCO World Heritage Sites. This means that one seventh of all World Heritage Sites in developing countries are supported by KfW on behalf of the Federal Government. KfW also supports 36 Ramsar sites with the aim of preserving wetlands.

#### World leader

KfW is a world leader in innovative financing solutions for conservation. It has more than 20 years of experience in this area.

Over half of the ecosystems protected are tropical forests. In addition to its goal of expanding the area under protection, KfW is also involved in ensuring that these regions are managed effectively and fairly. For instance, it invests in the administration structures and buildings in protected areas, as well as contributing to equipment, staff training, checkpoints, markings and vehicles, plus measures to promote sustainable use of resources by local communities.

Conservation zones that are efficiently managed with the involvement of local communities also help to reduce illegal wildlife trading worldwide. Elephants in Eastern and Central Africa and rhinos in Southern Africa are under particular threat. This is why KfW promotes the introduction of internationally recognised management standards (like the IUCN Green List) and improved monitoring systems (such as the Advanced Management Effectiveness Tracking Tool (METT)) in conservation areas.

When financing conservation areas that are hit hard by poaching, KfW therefore concentrates primarily on the following aspects: better training and working conditions for rangers, comprehensive application of innovative technology for monitoring animal numbers, and involving local people in managing the forests, wild animals and fishing grounds and sharing the profits.

Another focal point of promotional programmes is improving income and living conditions for the communities that neighbour conservation areas, for example through tourism, forest management, fishing or handicrafts. Local people should actually benefit from conservation and the sustainable use of natural resources. This makes them more accepting of conservation areas and more likely to protect their boundary zones and biological corridors.

## Madagascar: protecting ecosystems, combating poverty

Madagascar is a biodiversity hotspot: its variety ranges from lemurs and geckos to tropical rainforests and mountain cloud forests. Nearly three quarters of animal and plant species are only found there, making them endemic. However, a range of exploitation interests threaten this natural paradise: since the turn of the millennium, the country's forest has been shrinking at an average rate of 1% per year – primarily due to clearance for agriculture, to produce charcoal and also through illegal logging of valuable woods. It is now difficult to find pristine landscapes and primary forests outside of protected areas, meaning that these play a particularly important role in preserving biodiversity in this island nation.

Madagascar has 147 conservation areas covering a total of area of six million hectares. One third of this is managed by the organisation Madagascar National Parks (MNP) which, however, faces numerous challenges: the conservation areas, some of which are small, are spread throughout the country. The park authority lacks the staff and the funding to protect nature effectively. To enable efficient management, MNP therefore needs international funds as well: on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ), KfW is providing MNP with EUR 12 million by 2022, making it the organisation's main bilateral donor.

Of the funds, EUR 2 million are earmarked for local communities. Madagascar is particularly rich in species but is among the world's poorest countries. This is why it is important to preserve biodiversity here, both as a global public good and as the basis for the population's livelihood. MNP also takes the local population's concerns into account in a highly targeted manner.

The example of the Ankarafantsika National Park in the north east of the country illustrates what this means in practice. It has the highest level of protected status, meaning that hunting and logging are prohibited. Nonetheless, its existence is beneficial to local people because it acts as an important reservoir, providing water for the neighbouring rice fields. KfW and MNP have also undertaken – and not just at Ankarafantsika – to comply with World Bank standards setting out the procedure to be followed if protective measures do impose certain restrictions. Local people can also have their say in park management, they carry out the majority of patrols and are responsible for other work in the conservation area. In 2017, EUR 125,000 went to neighbouring communities, including salary costs. That equates to half of the total costs of the conservation area. Tourist guides turned over an additional EUR 32,000. Communities profit directly.

On top of this come supplementary measures like the construction of schools, health units and a better water supply, which are financed using a share of the admission fees. MNP operates similarly in the other parks. This is all due to a belief that conservation can only be effective in the long term if it does not disadvantage local people. Finding a good balance in this area is KfW Development Bank's stated aim.

### A biodiversity hotspot

Madagascar is particularly rich in species. Nearly three quarters of plant and animal species are only found there, making them endemic. KfW helps to preserve this "paradise".

For poorer countries or countries with limited income from tourism resulting from conservation areas, the task of keeping things running and covering costs for things like fuel, spare parts, renovations and PR work, can be a huge challenge. So, it is all the more important to make sure partner countries receive support in setting up permanent financing mechanisms for their conservation systems.

For this reason, KfW has spent the past few years helping to set up a number of environmental funds, known as Conservation Trust Funds (CTFs), usually in the form of non-profit charitable trusts. These trust funds normally receive public and private funds and — using recurring revenues and interest income — permanently contribute to the financing of conservation areas. KfW currently promotes 19 CTFs with a total volume of almost EUR 630 million. These help with the long-term safeguarding of 183 conservation areas, covering an area of over 690,000km<sup>2</sup> (see Annex 1).



## Caucasus: protection for the legends of nature

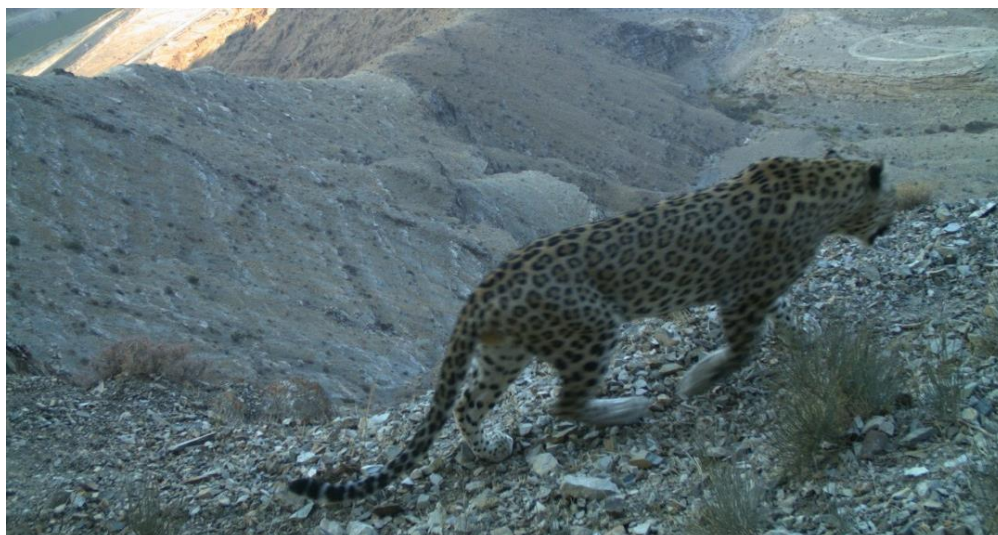
With the Caspian Sea on one side and the Black Sea on the other, the Caucasus is a biological crossroads. Plant and animal species from Europe, Central Asia, North Africa and the Middle East come together. No fewer than 6,400 species of vascular plants alone, such as mosses and ferns, grow here. There are also many species that can only be found in the Caucasus, such as the Caucasian black grouse and the Caucasian leopard. The region's natural diversity is so great that the World Wide Fund for Nature (WWF) and Conservation International (CI) have declared the region to be one of the world's 36 most important "biodiversity hotspots".

Ecosystems are at great risk in the Caucasus, too. Dozens of the region's species are on the red list for being at the brink of extinction due to deforestation or the construction of large roads and bridges. In order to counteract this trend, a few years ago the three Caucasian countries of Armenia, Azerbaijan and Georgia declared roughly 10% of their territory as a conservation area. However, they lacked the funds to sustainably manage the reserves and forests and to use agricultural and animal husbandry practices that are in tune with nature in the surrounding area.

That is why the Caucasus Nature Fund (CNF) was set up in 2008 as a conservation foundation that was intended to permanently close the financial gap and help to preserve biodiversity. It is now recognised as a stable and constant financing partner and it co-finances protected areas in Armenia, Azerbaijan and Georgia. It is steadily expanding its programme and is now contributing financially to 15 conservation areas, covering more than 660,000 hectares of land. CNF not only assists with operating, salary and procurement costs, for example for rangers and park employees, fire engines and jeeps, but also with the implementation of management plans in accordance with international standards.

The German Government has played an active role in the establishment and development of the CNF and it has contributed EUR 55.7 million to date through KfW. The fund also receives substantial support from the WWF as well as other private and institutional conservation organisations. Since 2018, KfW has also been financing eco-corridors on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ). These connect multiple conservation areas with one another. This turns individual patches of unspoiled nature into a species-rich mosaic of protected habitats, piece by piece. To enable the process, agreements are concluded with communities and participatory plans are developed for biodiversity-friendly land use. The conservation agreements include compensation for initial loss of income and assist with the transition to sustainable and more productive land use.

In this way, the eco-corridors preserve biodiversity on two fronts: they increase species diversity just by ensuring that people interact more carefully with nature. Through the connections that they build between the conservation areas, they also enlarge the habitats and migration routes for wild animals – especially those at risk of extinction. And above all, they create a more harmonious relationship between humans and nature because they allow enough room for both to live and go about their business. The combination of conservation through the CNF, eco-corridors and the local population has proven particularly effective.



The Caucasian leopard is alive, not least thanks to a proactive conservation policy. Photo: WWF Caucasus/wildlife camera

## A nature fund

A fund for sustainable conservation financing in the Caucasus was set up back in 2008. It blazed a trail for numerous other funds that subsequently followed.

### 3.2 Forest conservation and management

Forests fulfil a number of important ecological functions and provide essential ecosystem services. As the “lungs of the planet”, they supply oxygen, regulate the climate and water cycles, protect against erosion (and thus stop siltation at hydropower stations), store drinking water, produce valuable natural resources, food and medicinal products, cushion the effects of storms, and enable endangered species to survive. Especially in rural parts of many poorer countries, forests are also an important economic factor that offers long-term development prospects.

People have been transforming areas of forest for millennia, mainly so they can be used for agriculture. According to estimates, over two billion hectares of land around the world have already been deforested or lost their original function to a great extent. Between 2015 and 2020, deforestation was estimated to be occurring at a rate of 10 million hectares per year.

(Re)forestation therefore generally plays an important role in the three Rio Conventions and international environmental processes. For example, the strategic plan for the Convention on Biological Diversity includes the goal of restoring at least 15% of degraded ecosystems.

#### Home to flora and fauna

Forests are the habitat of more than 75% of all land-dwelling animal and plant species.

#### Indonesia: using forests sustainably

Indonesia emits around 1.8 billion tonnes of CO<sub>2</sub> annually. Many of these emissions stem from the deforestation and slash-and-burn clearance of virgin and peat forests, which serve as important carbon sinks and make a valuable contribution to the country's biodiversity. The rapid spread of palm oil plantations due to the growing demand for raw materials is one of the reasons for the large-scale deforestation of Indonesian forest areas. The Indonesian-German forest programmes were developed to address the problem of deforestation and slash-and-burn clearance. These programmes aim to develop and implement sustainable forest management methods and to protect natural habitats. Forest protection reduces greenhouse gas emissions, thereby positively impacting the achievement of national climate targets.

The first programme (Forest Programme I) was launched in 2008 and will invest around EUR 20 million by 2022 in activities to establish sustainable forest management in Kalimantan. Implementing forest conservation measures and highlighting the resulting climate impacts creates incentives for public and private investment within the REDD+ mechanism (Reducing Emissions from Deforestation and Forest Degradation). These contributions help to implement strategies for sustainable forest protection.

Forest Programme II is being implemented in Jambi, Sumatra, with EUR 23 million. The focus of the programme is the rehabilitation of water catchment areas, improved forest and land use management, the promotion of biodiversity and community-based activities that contribute to the success of the project. Forest Programme III (EUR 13 million) is being implemented in the buffer zone of the Lore Lindu National Park in Central Sulawesi. In this programme, as well as measures to protect key species and maintain forests, communities adjoining the park will receive support to establish sustainable land use methods. Participatory patrols prevent illegal logging and at the same time involve the local population in the project activities.

The Indonesian Government's efforts are showing signs of success: the annual deforestation rate decreased from over one million hectares to half a million hectares. The forest programmes funded by KfW also support these impacts. Successful forest rehabilitation measures improved water management in the project areas. In many locations, the local population was helped not only to protect habitats through sustainable forest management, but also to generate additional income. Each forest programme relies on participatory planning processes with all stakeholders. Another example is the development of a concept to survey carbon stocks of forest areas using satellite data and field studies with the participation of the relevant municipalities.

#### Forest conservation in Indonesia

Various forest programmes in Indonesia are showing signs of success: the rate of deforestation has roughly halved.



Rich forests, a plethora of species. Madagascar's fabulous nature is also at risk. Photo: Alice Elfert.

As the originator of the concept of sustainability over 300 years ago (the term originally came from the German forestry industry), Germany has developed extensive expertise in this field and thus provides its partner countries with a high standard of support in forest conservation. In particular, it has strong knowledge in the field of near-natural forest cultivation that preserves biodiversity and ecosystem functions — knowledge that is important for financial cooperation. Near-natural forest cultivation has since become something of a German export, which KfW has been promoting across the globe for over 25 years. German universities are internationally regarded as an elite training ground for this form of forestry. Germany is also home to the Forest Stewardship Council (FSC), a respected international institution that certifies wood produced in sustainably managed forests.

Working on behalf of the German Federal Government, KfW finances reforestation and the replanting of trees. As the economies of developing countries have grown — as was previously the case in Germany — there have been enormous amounts of logging, with the associated consequences for water supply, air quality and agriculture. Restored and varied forest landscapes help to provide ecosystem services to the population. The bank also promotes the sustainable management of existing forests, especially in Asia and Latin America. However, the sustainable use of forests still has to win over local populations, who often depend on the forest as a resource. For instance, wood is used to generate energy, while large areas of forests are cleared to plant soybeans or rear cattle. Depending on the region in question, KfW programmes for forest management are often a combination of the following elements:

- **Investment in control and management infrastructure for state authorities:** in order to improve local legal and investment security, for instance through decentralised administration and checkpoints, vehicles, control technology, and in order to meet social and ecological criteria — including training
- **Investment in productive infrastructure:** in order to improve local infrastructure, for example, with investments in rural roads and in areas of afforestation and forest management
- **Promotional funds and programmes for local and indigenous forest owners:** in order to create incentives and change individuals' behaviour, for example, by promoting individual investments for reforestation.

In addition to reducing CO<sub>2</sub> emissions by avoiding deforestation (Reducing Emissions from Deforestation and Degradation (REDD+)) and promoting something known as deforestation-free supply chains, forest and landscape restoration (FLR) is one of the three pillars that form the basis of the Federal Ministry for Economic Cooperation and Development's international forestry policy. KfW finances relevant projects in all three areas.

### Forest, forest, forest

An estimated 1.6 billion people, or 25% of the world's population, rely on forests for their survival, their livelihood, their employment and their income.



## Restoring forest landscapes

An important target of the international community is to restore deforested and degraded forest landscapes and to reforest areas having suffered from deforestation, not least for climate protection and rural development reasons. One concept in this area is FLR. It incorporates both ecological and social improvements. This means that it combines a forest's ecological functions with its productive use, from which the local population can benefit in turn, for example through increased income. The FLR approach also incorporates agroforestry systems<sup>5</sup>, which have both ecological and economic advantages; they increase biodiversity and protect fields from the effects of climate change. Furthermore, they help to keep soil fertile and reduce erosion, which in turn makes plants more resistant to pests and reduces the use of pesticides.

FLR contributes to the achievement of the SDGs set out in the 2030 Agenda by, among other things, securing the supply of food and power, fighting poverty, preserving biological diversity, and protecting the climate. In the 2014 "New York Declaration on Forests", the international community decided to restore 350 million hectares of degraded forest landscape by 2030. This new target corresponds to an area the size of India. The German Federal Government also signed the declaration. Participants in New York also agreed to end global deforestation entirely by 2030. FLR can play an important role in this process.

Together with Norway and the United Kingdom, Germany signed up to the GNU Initiative, which aims to extend the commitment under the New York Declaration using joint programmes and improved coordination. In 2015, the New Partnership for Africa's Development (NEPAD<sup>6</sup>), the German Federal Ministry for Economic Cooperation and Development, the World Bank (BMZ) and the World Resources Institute (WRI) set up the African Forest Landscape Restoration Initiative (AFR100) with the aim of restoring 100 million hectares of forest by 2030. Since then, 30 African countries have agreed to contribute around 126 million hectares to this initiative – so even more than was originally planned. KfW has already allocated commitments for Ethiopia, Cameroon and Madagascar for AFR100.

## Deforestation-free supply chains

A key driver of global deforestation is the conversion of forests into agricultural land to enable the production of palm oil and soya, for instance. In order to reduce deforestation rates, the Federal Ministry for Economic Cooperation and Development (BMZ) is promoting deforestation-free supply chains which use sustainable agricultural crop cultivation methods and land use systems. Deforestation-free supply chains bring forest conservation and sustainable agriculture into harmony with each other.

Through the eco.business Fund, KfW supports deforestation-free, resource-conserving and biodiversity-friendly production methods in Latin America and, going forward, in Sub-Saharan Africa. The innovative fund structure uses public funds to break down barriers in the market and mobilises additional private capital for small and mid-sized enterprises that produce to voluntary sustainability standards. This enables the fund to not only establish alternative production methods and corresponding sustainability standards, but it also simultaneously acts as an instrument for redesigning the financial system and the economy to make them more ecologically friendly (see the box on the eco.business Fund in the "Trends" section).

## Restore

One concept that describes the restoration and afforestation of forests where logging has taken place or which have been degraded is known as FLR: Forest Landscape Restoration. It combines environmental protection with productive use of the forest.

<sup>5</sup> Agroforestry combines elements of agriculture with forestry

<sup>6</sup> Now the African Union Development Agency (AUDA)



Sustainable coffee production in Nicaragua. Photo: Thomas Buhl.

## Latin America and Africa: eco.business Fund

In Africa in particular, despite significant progress, hunger and malnutrition remain a serious problem. The situation is exacerbated by a population growth rate that is among the highest in the world. As a result, Africa needs not only more agriculture, but also more intensive agriculture. However, farming cannot be expanded at the expense of the environment and the climate if it is to become a sustainable long-term model. This means that Africa must reconcile its economic growth and its increasing demand for food with environmental principles. This applies above all to the preservation of forests and biodiversity – the continent is particularly rich in both, but both are also exposed to considerable pressure.

This is why the economy must transition to a “green economy”, which requires incentives and capital. The eco.business Fund works towards this goal and promotes economic activity that contributes to the sustainable use of raw materials and the preservation of biodiversity. In the process, it also helps to mitigate climate change and adapt to its negative impacts. The fund was established in 2014 by KfW Development Bank on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ) together with Conservation International and Finance in Motion. It concentrates on four areas: agriculture and forestry, tourism, fishery and aquaculture.

The eco.business Fund exclusively promotes companies that replace conventional production processes with sustainable methods. To this end, it brings together private and public investors who assume different levels of risk. The involvement of public institutions creates a risk buffer for other investors – this makes the fund more appealing and attracts more private capital. The fund generally grants “green credit lines” to local banks, which in turn extend loans to local companies. They must have sustainability certificates from the Rainforest Alliance or FSC, for example, or be striving to acquire them or implement a sustainable measure that meets the green fund principles.

Its work began in Latin America and the Caribbean where it has disbursed loans of more than EUR 570 million to ultimate borrowers since its formation. It has already achieved a lot in this area, such as promoting sustainable cocoa farming in Ecuador and environmentally friendly coffee in El Salvador. Overall, in a short period of time, it has helped to protect more than 90,000 hectares of land from deforestation, which is equivalent to nearly 130,000 football pitches. Furthermore, around 5 million tonnes of CO<sub>2</sub> were stored through agroforestry, equivalent to the per capita emissions of around 600,000 Germans.

Given its success in Latin America, an offshoot was also set up in Sub-Saharan Africa in late 2019. Based on the innovative and successful concept from Latin America and the Caribbean, it provides banks in these countries with green credit lines, but also directly supports companies and cooperatives if they commit to environmentally friendly economic practices. The focus is on production practices that preserve forests, not least because of climate change mitigation.

## Green economy

Restructuring the economy to improve sustainability is an important mission for our age, and one that KfW is committed to.

## Providing compensation when deforestation is prevented

In order to reduce greenhouse gas emissions owing to deforestation, the countries that are party to the UN Framework Convention on Climate Change (UNFCCC) have agreed the REDD+ approach. The basic concept consists of rewarding governments and local people for preventing and reducing deforestation. The conditions and the methodological rules and regulations for results-based payments were defined in what is known as the “Warsaw Framework” in 2013. In order to prevent displacement of deforestation within a country, evidence must be provided of forest conservation and CO<sub>2</sub> savings at national or regional level.

KfW is implementing the REDD Early Movers Programme (REM) on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ). It aims to reward pioneers in the protection of forests and the climate for their services to forest conservation. So far, five components of the programme have been implemented in three countries: in the Brazilian states of Acre (one phase completed, one ongoing) and Mato Grosso, in Colombia and in Ecuador. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Norway and the United Kingdom co-finance the individual components. By 2020, EUR 160 million were disbursed for deforestation that had been prevented. Remuneration was provided for emission reductions totalling nearly 37 million tonnes of CO<sub>2</sub> equivalent (tCO<sub>2e</sub>) that had been discontinued; this means that they cannot be compensated for again. This corresponds to the annual CO<sub>2</sub> emissions of around 20 million cars in Germany. In addition, the REM partner countries have discontinued a further 35 million tCO<sub>2e</sub> as their own contribution and as risk provisions, meaning that the programme has already achieved an overall contribution of 71 million tCO<sub>2e</sub> towards climate protection.

### A reward

With REDD+, local people are rewarded for preventing and reducing deforestation. The funds are only disbursed when evidence of CO<sub>2</sub> savings is provided.

### Ecuador: REDD for Early Movers

Ecuador is home to 5–10% of the world's species. The majority of these are in the Amazon Rainforest, the Andes and on the coast. Together, these habitats cover 58% of the country. Various groups of people live there, including indigenous people, Afro-Ecuadorians, the Montubio (Mestizo) and local communities.

The country is implementing a series of effective forest conservation mechanisms, such as the Socio Bosque programme. With its assistance, in an eleven year period Ecuador has placed 1.6 billion hectares of forest under the protection of local groups and indigenous peoples. The country concluded a REDD+ action plan covering this, in order to drive forward climate and environmental protection and strengthen community development. The comparatively low (and, in recent years, decreasing) levels of deforestation form the basis for the partnership with Ecuador under the REM programme. For this partnership, the Federal Ministry for Economic Cooperation and Development (BMZ) has provided EUR 11 million in funding and Norway has provided around EUR 30 million.

This compensates for the reduction in deforestation between 2015 and 2019. The partner on the Ecuadorian side is its Ministry of Environment (MAE). Through benefit sharing, 70% of the funds go towards local implementation. This includes forest conservation by rural and indigenous communities, restoration and afforestation activity, direct promotion of sustainable products (non-wood forest products), commercialisation of deforestation-free products and the financing of initiatives by indigenous communities. 30% of the funds contribute to improving forest governance.

## 3.3 Coastal and marine conservation

The planet's oceans cover a good 70% of its surface and play a central role in sustaining life on Earth. They fulfil important climate-regulating functions, produce half of the world's oxygen and make a key contribution to food security thanks to their high level of biodiversity. Fish is a crucial source of nutrition for nearly three billion people. More than 500 million people around the world are directly or indirectly dependent on fishing. For these people, coastal regions are both a place to live and a place to work. The majority of fishing takes place in developing countries, where increasing numbers of people are gathering in coastal regions. Today half of the world's population already lives in these areas.

Overfishing of the world's oceans has now become a serious problem: around 90% of fish populations are deemed to be fully exploited or already overfished. Aquacultures are playing an increasingly important role, supplying around half of the fish consumed by humans. For decades, aquacultures have been the fastest growing sector in global food production, rising by around 8% each year.

### Marine ecosystem

The oceans produce half of the world's oxygen, trap CO<sub>2</sub>, provide food for much of humanity and boast high levels of biodiversity.



Intact underwater world. Photo: coral reef image bank / photographer: Jayne Jenkins

### Global: a “blue fund” for marine conservation

Off the coast of Ecuador, Colombia, Panama and Costa Rica, the Pacific is particularly rich in different species. It is also home to the legendary Galapagos Islands with their unique flora and fauna. Many naturalists, including Charles Darwin, were always fascinated by the islands’ beauty, even temporarily earning them the name “Islas Encantadas” (“enchanted islands”). The Galapagos Islands are now a UNESCO World Heritage Site, and parts of the eastern Pacific Ocean surrounding them are also protected.

However, the area’s biodiversity makes it economically attractive as well and it is therefore at risk of being heavily exploited and overfished. In order to bring ecology and the economy into harmony with one another, Conservation International (CI) helps local communities to practice sustainable fishing methods. This includes better equipment, warehousing and fish processing, as well as management and control plans to protect stocks.

The programme in this sensitive marine area is one of nine ongoing projects that the Blue Action Fund (BAF) is currently promoting in Latin America, Africa and Asia. It aims to preserve marine biodiversity for future generations and it invests in coastal and marine conservation around the world in order to achieve this. The Federal Ministry for Economic Cooperation and Development (BMZ), in collaboration with KfW, founded the BAF in 2016 in the legal form of a non-profit charitable trust. It finances projects of non-governmental organisations (NGOs), which can enhance and expand their work through access to public funding.

Support is available for projects that establish new conservation areas, expand or better manage existing ones and improve the living conditions of local communities through sustainable management of marine resources. Interested NGOs can submit project proposals. When selecting projects, the BAF observes any national and regional protection strategies and makes sure projects are consistent with the UN Convention on Biological Diversity, the 2030 Agenda and the Federal Ministry for Economic Cooperation and Development’s 10-point action plan for marine conservation. The International Union for Conservation of Nature and Natural Resources (IUCN) works with the BAF to select projects.

The fund is now also financed by Sweden and France, which joined in 2017 and 2018. This means that the BAF has an endowment fund of EUR 93 million. The fund is open to further donors as it looks to expand its reach, step by step. In 2020, four additional projects are expected to join the nine ongoing projects, with a further seven to ten programmes due to be added in 2021. And with each additional financier, the commitment to the oceans and coasts can be further increased – around the Galapagos Islands and elsewhere.

### Blue Action Fund

The fund now supports nine marine conservation projects worldwide, with another ten due to come on board in the next two years.

Nevertheless, this growth also goes hand-in-hand with growing demand for fish meal and oil from the catching sector for feed. Moreover, non-sustainable production methods used in



aquacultures can be just as dangerous as destructive catching methods. This makes private certification initiatives such as the Marine Stewardship Council (MSC) and the Aquaculture Stewardship Council (ASC) all the more important; their market share in western industrial countries is growing. These measures enable consumers to promote sustainable aquacultures and fishing methods by making conscious purchasing decisions.

Climate change will continue to increase the temperature of the oceans and cause sea levels to rise, with the result that coral reefs around the world die off, making thousands of kilometres of coastline more vulnerable to storm tides. It also means the loss of refuges for many species of fish and could push millions of people even deeper into poverty. Marine and coastal protection is correspondingly important and its significance in KfW's portfolio – in accordance with the Federal Ministry for Economic Cooperation and Development's 10-point action plan<sup>7</sup> for marine protection and sustainable fishing – has risen steeply in recent years.

For example, KfW promotes investment in the conservation of marine biodiversity and a sustainable fishing industry to the same extent. The number of KfW projects in the marine and coastal sector has been rising since 2014.

### **Coral at risk**

Around a quarter of all marine species live in coral reefs; however, in 2030, 90% of these were put at risk through human activities and climate change.



Sustainable fishery is a decisive step towards preserving the oceans as intact ecosystems.  
Photo: KfW Group/Eric Madeja, Connect Ocean

<sup>7</sup> German Federal Ministry for Economic Cooperation and Development (BMZ) (2016): Meeresschutz und nachhaltige Fischerei. 10-point action plan.

## 4. Outlook and trends

International conservation is largely determined by the UN Convention on Biological Diversity (CBD). The CBD's new 10-year strategy, which the group of countries is currently in the process of negotiating, will once again contain 20 goals. It will build on the previous goals but will increase the level of ambition. According to IPBES, this will require a reversal of social and, above all, economic trends.

Despite some success, it will only be possible to preserve nature and its outputs in the long term if – in addition to protective and conservation measures – policies are put in place to more strictly regulate use of land and resources and divert production and consumption towards sustainable channels. Integrating biodiversity concerns into other aspects of human development (“mainstreaming”) is also likely to become more significant, as the main causes of species loss are found in other sectors. This is reflected in the following trends which will also play a larger role for KfW going forward:

### **Trend 1: “30-by-30”**

According to IPBES's global situation report, up to one million species of animals and plants are facing extinction, and for many this will occur in the next few decades. This means that today, the rate at which species are dying out is up to one hundred times higher than the average rate of the last ten million years. The ability of ecosystems around the world to provide outputs that are essential for survival also decreased. This is despite the global commitment to conservation, without which the environment would be in an even worse situation.

### **Protected areas work**

Investments in conservation have reduced the risk of extinction for mammals and birds by a median value of 29% per country.

According to figures in Global Biodiversity Outlook 5, investments in conservation between 1996 and 2008 reduced the risk of extinction for mammals and birds by a median value of 29% per country. It is also important to maintain and increase investment in preserving ecosystems that are still largely intact. Around the world, between USD 87 and 91 billion go towards preserving biodiversity each year. However, the amount needed is between USD 150 and 400 billion.<sup>8</sup> As such, there is a chronic shortfall that is likely to increase further.

Effectively and fairly managed conservation areas are still a key way to preserve nature's riches. This is why the new draft of the CBD strategy still provides that at least 30% of land, marine and freshwater ecosystems should be protected by 2030, with at least 10% heavily protected. To avoid the risk of conservation areas only existing on paper, however, it is necessary to address questions of fairness and management effectiveness.

### **KfW Development Bank's contribution**

KfW Development Bank's aim is to fully preserve natural habitats. It invests just over EUR 1.5 billion in marine, land and hybrid protected areas. The promoted area has grown in the past two years by an area roughly equivalent to the size of Italy and covers 1.62 million km<sup>2</sup>. As well as designating new areas, KfW is committed to ensuring that conservation areas are managed more effectively, that local communities are more involved and that they have alternative income generation methods.

Furthermore, KfW is supporting partner countries in developing long-term financing mechanisms, such as through Conservation Trust Funds (CTF) or eco and green funds. These funds support private companies which have a positive effect on conservation, typically in the sustainable agriculture, fishing, agroforestry, ecotourism and green infrastructure sectors. On the other hand, CTFs using a regular stream of income and interest help to secure the financing of protected areas for the long term. In this way, they also raise awareness of biodiversity in the country and mobilise additional public and private funds. They hold the private sector to account and act as a platform to coordinate donors and enable coordination between donors.

<sup>8</sup> Report of the High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011–2020” (CBD (2014): <https://www.cbd.int/financial/hlp/doc/hlp-02-report-en.pdf>)

KfW Development Bank is working closely with conservation organisations in an effort to make the most of their specific strengths. From KfW's perspective, these include:

- **Political strength:** helps to facilitate political decisions critical to success;
- **Specialist expertise:** ensures the quality of projects;
- **Local presence:** makes sure that funding actually reaches people;
- **Integration into civil society in partner countries:** creates a broader social basis for conservation;
- **Long-term involvement:** improves the sustainability of the projects' impact.

### Good cooperation

KfW has particularly close partnerships with the WWF and Frankfurt Zoological Society.

KfW works with many environmental organisations, though the Worldwide Fund for Nature (WWF), Frankfurt Zoological Society (ZGF) and the International Union for Conservation of Nature (IUCN) are particularly important partners. KfW Development Bank signed a cooperation agreement with ZGF in 2012. Joint projects are underway in Tanzania, Ethiopia, Vietnam, Zambia and Ukraine.



National park in Cameroon. Photo: KfW Photo archive/Fred Hoogevorst

KfW Development Bank and the WWF have enjoyed a partnership lasting over 25 years. They first worked together in 1992/93, cooperating on a project in Côte d'Ivoire to protect Tai National Park, a UNESCO World Heritage Site. KfW is currently working with the WWF in several countries, including Madagascar, Cameroon and Laos, as well as on a tiger programme in Asia and the Blue Action Fund. The regional focus of their work is Africa, while the focus in terms of content is on conservation areas and their sustainable financing, like the project in the Caucasus, for example.

KfW developed the new promotional concepts for marine conservation (Blue Action Fund) and tiger protection in cooperation with the IUCN. The IUCN is also an important implementation partner, including in Central America and in the Kavango-Zambezi protected area (KaZa) in Southern Africa.



## Trend 2: Biodiversity and climate

Biodiversity and global warming are closely linked, as climate change is among the main drivers of extinction. The overall risk of species dying out increases as the temperature of the Earth rises. Endangered ecosystems such as coral reefs could shrink to less than 1% of their former size if temperatures rise by 2°C. It is therefore crucial for nature and ecosystem outputs that global warming is limited to well below 2°C. On the other hand, intact ecosystems are essential to climate protection and adaptation because, among other things, they store more carbon than degraded systems and are better able to cope with the effects of climate change.

Nonetheless, some climate protection and adaptation measures are implemented even though they harm biodiversity, such as afforestation with monocultures that offer little as a habitat for flora and fauna. More work should be undertaken to effectively identify and make use of synergies between the areas, so that conservation, climate protection and climate adaptation become mutually reinforcing. Today, the overwhelming majority of measures which have biodiversity as their primary aim or as a secondary aim already contribute to climate change reduction or mitigation as well (279 of 312 ongoing measures).

Nature-based solutions (NbS) can be particularly valuable here. Instead of relying exclusively on technical solutions, NbS use ecosystems and their outputs to counter societal challenges like climate change, while also ensuring human well-being and biodiversity.<sup>9</sup> Coral reefs and mangrove forests, for example, are nature-based alternatives to coastal protection using walls. They usually cost nowhere near as much and produce additional benefits: mangrove forests act as important spawning grounds for fish, meaning that in many developing countries they also contribute to food security and are a source of income for people living on the coast. What is more, they store up to three to five times as much CO<sub>2</sub> as forests on land.

## KfW Development Bank's contribution

KfW Development Bank is among the largest financiers of climate protection and biodiversity. Going forward, the whole group will be even more rigorous than before in ensuring sustainability. As part of a group-wide "Roadmap Sustainable Finance", solutions were developed to manage business strictly in line with sustainability criteria and to systematically evaluate climate risks. This helps KfW to progress itself, but as a financial institution it also has the capacity to form and shape opinion. As a promotional bank, KfW sees its role as being to drive forward the world's transformation towards taking a more responsible attitude towards climate change and to continuously develop its own promotional products, standards and processes.

NbS approaches will be used extensively in KfW Development Bank projects. They include the restoration of ecosystems (for instance, through FLR), ecosystem-based adaptation and reduction (such as through REDD+), ecosystem-based management approaches (e.g. integrated coastal zone management) and ecosystem protection. In the Caribbean, small island states are affected particularly heavily by climate change, including by rising sea levels. Sustainable use and restoration of selected ecosystems (especially coral reefs, mangroves and seagrass beds) helps to secure the services that ecosystems provide, such as protection against flooding, and preserve income for local people, including from tourism, fishing and agriculture.

## Trend 3: Biodiversity and health

The global spread of SARS CoV-2 is a significant factor in changing our perspective on the relationship between humans and the environment. 60% of human illnesses overall and 73% of all new human illnesses have zoonotic origins, meaning that they have jumped from animals to humans.<sup>10</sup>

If humans encroach on nature, degrade it and drive wildlife out, using the animals or associated animal products for commerce, this increases contact between humans and animals and paves the way for pathogens to spread. Numerous studies have shown that there is a connection between deforestation and the spread of various diseases like Lyme disease and malaria.

## A major topic

Species conservation and climate change belong together. Climate change is among the main drivers of extinction. In turn, species dying out increases the risk of higher temperatures on Earth.

<sup>9</sup> Cohen-Shacham et al. (eds.) (2016). Nature-based Solutions to address global societal challenges. Gland, Switzerland: IUCN. <https://portals.iucn.org/library/sites/library/files/documents/2016-036.pdf>

<sup>10</sup> Woolhouse M & Gowtage-Sequeria S (2005) Host range and emerging pathogens. *Emerging Infectious Diseases* 11(12); Jones KE et al. (2008) Global trends in emerging infectious diseases. *Nature* 451:990-994

However, these are far from being the only interdependencies between biodiversity and human health. Using large amounts of chemicals in agriculture also impacts negatively on biodiversity and on human health. In developing countries, 25 million people per year suffer acute pesticide poisoning.<sup>11</sup> Pharmaceutical products can also release active ingredients that damage flora, fauna and ecosystems. Improper use of antibiotics in agriculture also increases the risk that disease-causing bacteria develop resistance. All of these examples show that human, animal and environmental health ("one health") is connected. That means that protecting the environment is ultimately beneficial for human health.

Conservation and protected areas not only offer a refuge for wildlife; they also provide people with ecosystem services that are essential to survival. These include the oxygen that we breathe, the water we drink, and – through pollination – the food we eat. Preserving species ensures that humans can access them in future, to cultivate crops or develop medicines. Green spaces are also proven to benefit human well-being, both physical and mental. In turn, agriculture that is ecological and conserves resources offers food security without fundamentally depleting resources.

### **KfW Development Bank's contribution**

KfW's wide-ranging commitment to protect biodiversity, especially in conservation areas, is also immensely important to human health. Protecting and restoring ecosystems and designating conservation areas and protected corridors help to preserve natural habitats. Managing these areas effectively and fairly is a good way to combat poaching and offers neighbouring populations alternative sources of income. And it is important to finance conservation areas right now, during the coronavirus pandemic; transport is restricted and income from tourism has dried up, while healthcare systems and economic recovery have taken priority. As such, many conservation areas run the risk of being underfinanced. Their continued existence is in danger.

KfW Development Bank also promotes the sustainable use of natural resources, through ecological agriculture (for instance, through the eco.business Fund) or sustainable fishery (such as in Madagascar). In the future, cross-sector cooperation will become even more important, especially closer partnership between the management teams in conservation areas and veterinary surgeons. As previous outbreaks of illnesses like Ebola were preceded by waves of disease among animals, better observation of wildlife can help to identify and prevent infections in a timely manner.

### **Conclusion**

Biodiversity is not yet as important a topic in the public consciousness as it needs to be. That is all the more the case during the coronavirus era. Health concerns appear more important, and economic and social issues are also a priority. If ecological topics play a role at all, then climate change tends to be the key theme, even though global warming has been pushed down the priority list during the coronavirus pandemic. It is easy to overlook the fact that both our health and our continued economic and social progress have no prospect of success if we do not protect the climate and preserve biodiversity. We must not bite the hand that feeds us. This is why a commitment to biodiversity may currently be more important than ever.

### **Nature as a pharmacy**

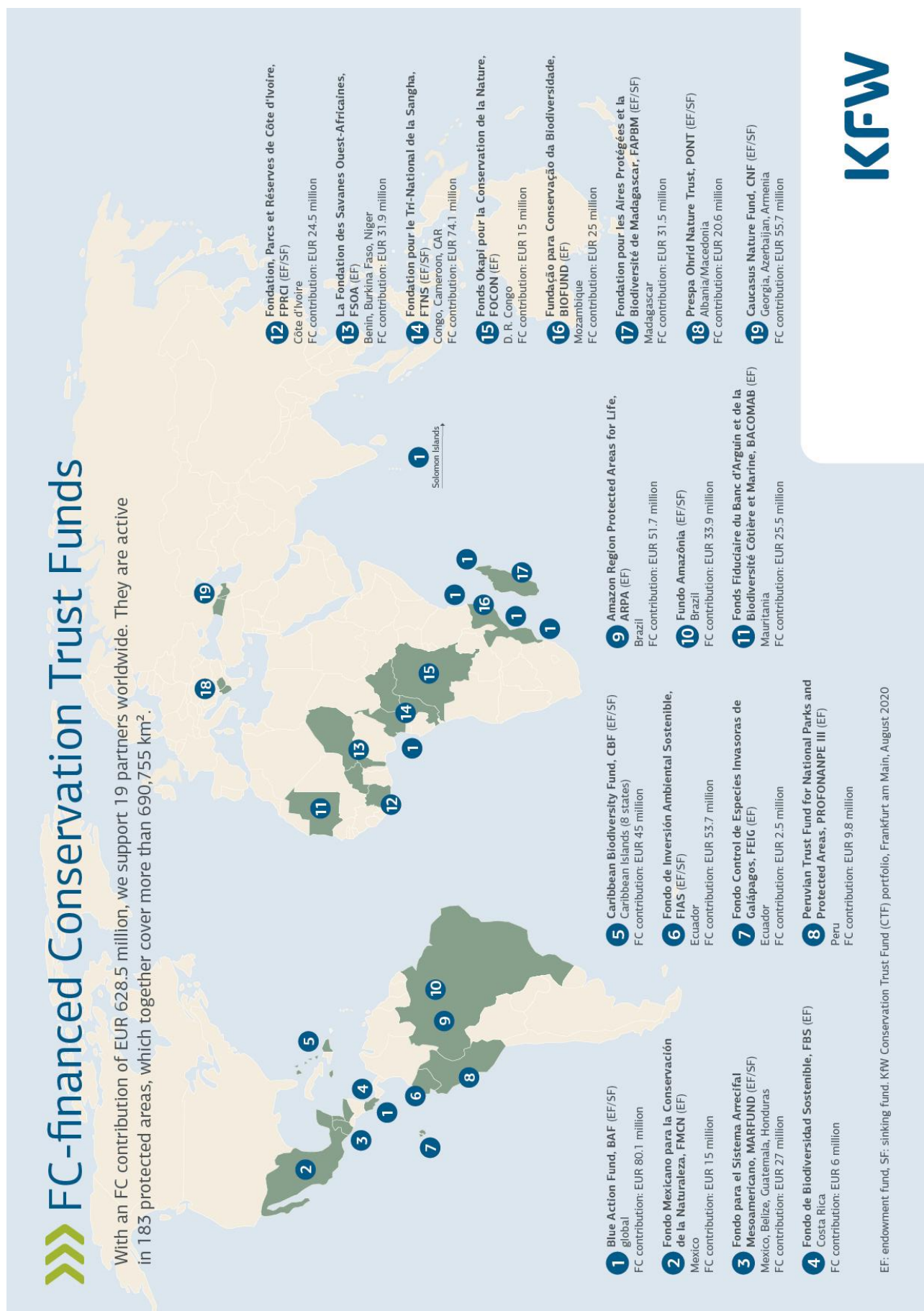
Penicillins and nine out of the thirteen main classes of antibiotics come from natural microorganisms. Around three quarters of antiviral and anti-parasite medicines that were newly approved in the USA between 1981 and 2010 were also manufactured using natural products.

### **Greater awareness**

Biodiversity loss and climate change are among the greatest ecological risks of our time. However, in contrast to climate change, there is a lack of public awareness of biodiversity loss.

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<sup>11</sup> WHO and SCBD (op. cit.)



<sup>12</sup> KfW Conservation Trust Fund (CTF) portfolio, Frankfurt am Main, August 2020

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