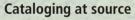


FUNBIO

PROTECTED
AREAS

2014



Fundo Brasileiro para a Biodiversidade – Funbio

M775f Monteiro, Camila.

Funbio + Protected Areas / Camila Monteiro, Renata Zambianchi, coordination Rosa Lemos de Sá. - Rio de Janeiro: Funbio, 2014.

179 p. : il. color. ; 22 x 16 cm ISBN: 978-85-89368-05-6

1.Biodiversity conservation. 2. Protected areas. 3. Environmental management. I. Camila Monteiro. II. Renata Zambianchi. III. Rosa Lemos de Sá. IV. Title.

CDD 333.72

Coordination

Rosa Lemos de Sá

Writing

Camila Monteiro and Renata Zambianchi

Data and review

Alexandre Ferrazoli, Ângelo dos Santos, Anna Beatriz Gomes, Daniela Leite, Danielle Calandino, Erika Polverari, Fábio Leite, Fernanda Marques, Flávia Neviani, Laura Petroni, Maria Bernadette Lameira, Marilene Viero, Mateus Almeida, Mônica Ferreira, Natalia Paz, Nathalia Dreyer

Trends

Adapted from the article "O futuro do ambiente financeiro das áreas protegidas", written by Leonardo Geluda and Manoel Serrão

Maps

Alexandre Ferrazoli

Portuguese text revision

Rachel Valença

Translation

Rebecca Atkinson

Graphic designer

Guilherme Almeida



The fourth edition of the Global Biodiversity Outlook (GBO-4) was launched at the 12th Meeting of the Conference of the Parties to the Convention on Biological Diversity in October 2014 in Pyeongchang, South Korea. The report contains a broad-ranging evaluation of the progress made so far in meeting the 20 Aichi Biodiversity Targets agreed in Nagoya in 2010 as part of the Strategic Plan for Biodiversity 2011-2020. The main conclusions of the GBO-4 are twofold: that there has been a significant increase in efforts to meet most of the Aichi Biodiversity Targets, but that current endeavors will not be enough to attain all 20 of the targets by 2020.

Substantial progress has already been made towards two targets: Target 16, with the entry into force of the Nagoya Protocol on October 12, 2014, and Target 11, thanks to the significant expansion of protected area networks around the world. The most recent data submitted by the countries in response to a notification of mine at the beginning of this year indicate that 15.4% of land ecosystems and 8.4% of marine and coastal ecosystems (territorial seas and exclusive economic zones) are now covered by protected areas. The latest data in the IUCN's Protected Planet Report 2014 are most promising, but this does not mean that the other aspects of Target 11 are on track.

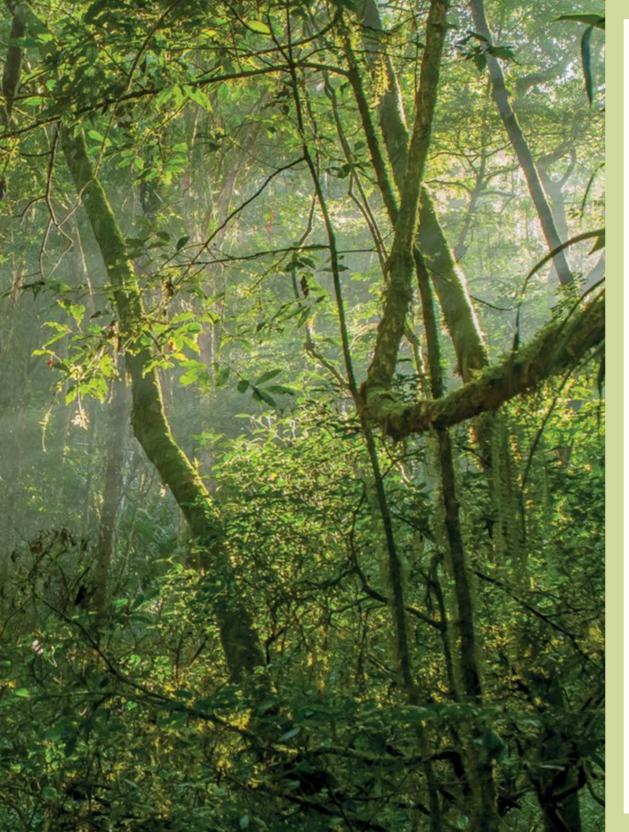
The expansion and consolidation of Brazil's system of protected areas has been one of the main drivers of this global progress, especially in the Amazon. The great progress in protected areas in Brazil is being driven by the determination of the Brazilian Ministry of the Environment and respective state departments of the environment, the effective work of ICMBio and its state peers, decisive support from the Global Environment Facility, the financial mechanism for the Convention on Biological Diversity, strong support from the governments of different countries, especially Germany and Norway, the work of numerous NGOs, especially WWF, and last but not least the efficient support of Funbio.

Funbio has certainly been a key player in driving this progress, delivering direct benefits for biodiversity while also assisting countless local communities and making a significant contribution to the reduction in deforestation rates seen in the Brazilian Amazon since 2005.

As one of the founders of Funbio, I am delighted to see what outstanding results Funbio has achieved in the almost twenty years described in this book. I would like to congratulate everyone who has served on the Funbio governing council and everyone who works there for their outstanding achievements, and especially Rosa Lemos de Sá, who is currently serving as General Secretary. I wish you all every success in your future work, even in other biomes of Brazil.

.....

Bráulio Ferreira de Souza Dias Executive secretary of the Convention on Biological Diversity



Created 18 years ago with the mission to invest financial resources in the conservation of biodiversity, Funbio is coming of age with a sense of mission accomplished. Building up from individual projects for communities neighboring protected areas to its current capacity to develop mechanisms to harness environmental compensation funds, conduct adjustment agreements, environmental safeguards and license conditions, it is now a major player in the Brazilian environmental conservation scene.

As a natural evolution of this story, Funbio could take an increasingly central role in garnering more private sector support for protected areas, not just by capitalizing further on the mechanisms already used, but also by branching out to mobilize other resources specifically for protected areas. A recent development of this kind is Funbio's work to assure financial feasibility for the Arpa for Life program, guaranteeing a significant volume of funds from the private sector over the long time horizon (25 years) the program requires.

Credibility, transparency and quality are all attributes that have marked Funbio's work from the outset. To face the future, with society imposing increasingly complex and unpredictable demands on biodiversity conservation, it will be forced to supplement these attributes with a good measure of adaptability and foresight as it responds to these new requirements. I truly believe the DNA of our institution is ready for this.

Álvaro de Souza Chairman, Funbio Governing Council

maps and graphics

Maps and graphics

Map 1 - Protected areas and indigenous lands that have received direct and indirect support from prog	jram:
nanaged by Funbio	23
Graphic 1 - Protected areas that have received direct support from Funbio since 1996, per biome	24
Graphic 2 - Number of strictly protected areas vs. number of sustainable use protected areas	25
Graphic 3 - Area (hectares) of protected areas, per biome	26
Graphic 4 - Area of strictly protected areas vs. sustainable use protected areas (in hectares)	
Graphic 5 - Amounts contracted to fund protected areas, per biome (in dollars)	28
Graphic 6 - Average investment per protected area per biome (in dollars)	29
Graphic 7 - Average investment in each biome, per hectare (in dollars)	30
Graphic 8 - Amount of funding provided for indigenous lands, per ethnic group (in dollars)	
Graphic 9 - Number of protected areas created in the Amazon using Funbio funding, and total area (in hectares)	33
Graphic 10 - Investments in management plans (in reais)	34
Graphic 11 - Investments in infrastructure in protected areas, per biome (in reais)	35
Graphic 12 - Amounts and number of payments made to resolve land tenure issues in the Atlantic Forest	40
Graphic 13 - Protected areas in the Amazon and reduction of deforestation	42
Map 2 - Kayapó land surrounded by deforested areas	
Map 3 - Sete de Setembro (Suruí) land surrounded by deforested areas	44
Graphic 14 - Number of protected areas that have received indirect support from the TFCA	46
Graphic 15 - Area of the protected areas that have received indirect support from the TFCA	46
Graphic 16 - Funds raised for protected areas (in dollars) per mechanism	

photos and credits

Photos and credits

Photo: © Pale Zuppani	02 and 03
Photo: © Palê Zuppani	06
Photo: © pt.forwallpaper.com	
Photo: © Du Zuppani	
Photo: © Du ZuppaniPhoto: © Palê Zuppani	16
Photo: © Renata Zambianchi	20
Photos 1 and 2: © Acervo INEA	36
Photo 3: © Felipe Queiroz	36
Photo 4: © Lourenço Eduardo – GECOM	36
Photos 1, 2, 3 and 4: © Acervo Funbio	37
Photo: © Acervo Funbio	38
Photo: © Acervo Funbio	39
Photo: © Du ZuppaniPhoto: © Du Zuppani	47
Photo: © Du Zuppani	48
Photo: © Renata Zambianchi	64
Photo: © Publius Vergilius	



12

1. Introduction

16

2. Trajectory



20

3. Results



48

4. Solutions



64

5. Trends





44

1. Introduction

The Brazilian Biodiversity Fund - Funbio, like other environmental funds in Latin America, was created in the 1990s as a financial mechanism with the objective of contributing to the implementation of the Convention on Biological Diversity (CBD) established at the Earth Summit in 1992 and signed by Brazil that same year. The CBD is one of the most important international instruments for the environment. It involves 194 countries and covers everything directly or indirectly related to biodiversity.

The decision to create Funbio was taken by the Brazilian Ministry of the Environment, which received a 20 million dollar grant from the Global Environment Facility (GEF), the financial mechanism for the CBD. The government formally set up a Biodiversity Working Group¹, whose members included representatives from the federal government, organized civil society, academia and the business sector, and this group recommended the creation of a private financial mechanism to act in grant making, fundraising, asset management, and to catalyze public-private cooperation.

Since Funbio began its work in 1996, its mission has been to provide strategic resources for biodiversity conservation. This involves searching for ways to ensure the financial sustainability of initiatives, and especially serving as a bridge between funders and executors

1 Ministry of the Environment Directive no. 115 of 1995.

We understand that the conservation of biodiversity in Brazil is profoundly linked to support for protected areas. Millions of hectares have been set aside to conserve the biological assets and environmental services of the country, one of the richest in the world in this respect. The consolidation of these areas is one way to conserve the nation's heritage and to keep different ecosystem services rendered in the surrounding areas, towns and cities and throughout the planet.

Today, Brazil has 1,828 federal, state and municipal protected areas, which together cover almost 150 million hectares, discounting overlaps. Funbio has provided direct or indirect support for 344 of these protected areas, representing around 66 million hectares, or 43% of the country's total protected area.

Protected areas are on the public agenda, and can be created by federal, state or municipal authorities. Funbio supports this agenda as a private financial mechanism, with responsibility for assisting protected areas under the National System of Protected Areas law.² Focusing on the provision of key services for their creation and consolidation, our activities include: raising funds to supplement the public budget, especially from the private sector and bilateral and multilateral agencies; studies into funding needs and strategies for protected areas; the procurement of goods and services; the strengthening of transparency and accountability; the management of assets to provide sufficient resources for the areas in the long run; and support for the management of protected areas and the agencies responsible for them.

We make every effort to improve the efficiency of our services, designing resource mobilization and investment mechanisms and processes capable of providing the goods, services and projects the protected areas need to continue to exist and function into the future for the benefit of society.

This publication describes our trajectory. It sets forth the mechanisms Funbio has created and operates and their aggregate results. We want to communicate our story to different audiences, demonstrating what drives us in our quest for innovation in order to remain at the cutting edge of conservation for Brazilian biodiversity.

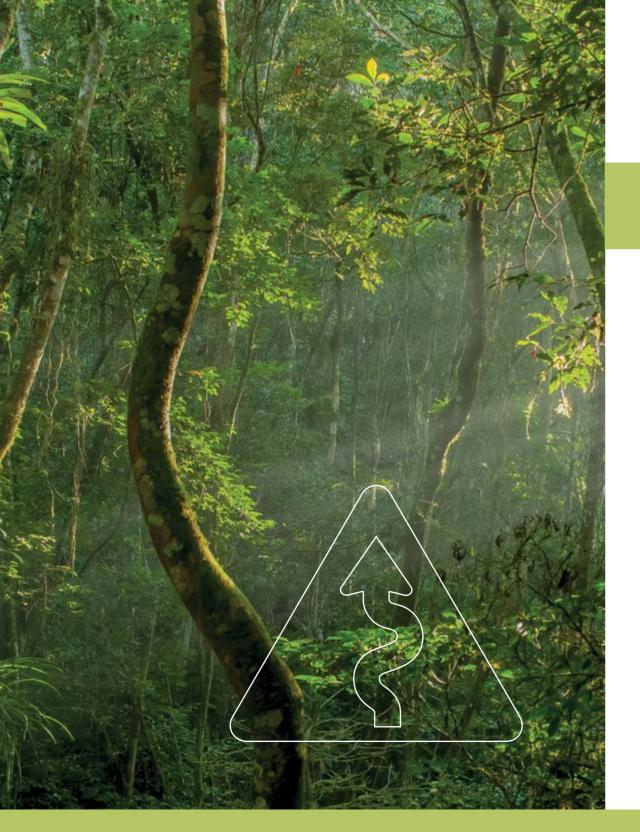
2 Law no. 9985 of July 18, 2000.

The first point worth stressing is that we never operate in isolation. Like all environmental funds, Funbio is just one cog in the much larger scheme that is the funding and execution of conservation projects. Our position in this complex web of partnerships is central, in that we galvanize different sources of funding and work with the people doing the conservation work in the field, bringing us into contact with NGOs, community associations, government agencies and researchers.

This publication focuses on Brazil's protected areas, and also describes some recent experiences involving indigenous lands, where Funbio has applied its expertise to ensure they have the support they need for their continued survival. While the lessons learnt from the past are important, we are also aware how crucial it is for the conservation community to look forward. That is why we have given over a chapter to trends in environmental funding and how we engage with them.

We are proud of all we have achieved so far. Taken in isolation, each initiative may seem negligible in comparison with the sheer size of Brazilian biodiversity, but taken as a whole they are not insignificant, and demonstrate how much conservation projects can benefit from financial and managerial mechanisms like environmental funds, which is Funbio's function in Brazil. As we take stock of what a difference we have made so far and what remains for us to do, we must set our sights on harnessing innovations and new ways of expanding this impact into the future. This is our goal for today.

Funbio Team





2. Trajectory

1996 2003 2007 2013

of goods and

Diversified portfolio

FMA/RJ

Other services

Studies into funding needs and sources

PA bank accounts

responsabilities

New

Replicate compensation funds

Conduct adjustment agreements

PA debit card

Licence conditions

Safeguards

Support for protected areas has always been part of Funbio's work. Even in the 1990s, under Pedro Leitão (general secretary, 1995-2009), calls for projects³ were held to provide funding for protected areas and the areas surrounding them.

³ These are public calls for projects in which Funbio invites other institutions to submit proposals, which it then analyzes and selects for funding.

However, it was only in 2000 that the institution took a more structured position as a financial mechanism for Brazilian protected areas when it launched the Arpa program (Amazon Region Protected Areas). It was in order to meet the requirements necessary to operate as the program's financial manager that Funbio underwent its first restructuring process.

In 2003, Funbio took on new employees, created a procurement department, reinforced its finance department, developed IT systems, hired an IT team, and, most importantly, drew up procedures for working in the Amazon and observing the rules set by the Arpa program's donors and trained its team in these procedures. These new accountability, financial control, planning and investment requirements drove a new period of growth for the institution, which dedicated years to implementing this new strategy and improving the quality of its new services.

Some of the solutions Funbio developed then are still used today to support protected areas and projects in general. The Cerebro system, for instance, is an online system that controls the financial transactions for each project, enabling the partners to interact and keep track of the budget. Another instrument developed to facilitate funding for protected areas is the PA bank account, by which managers of protected areas can themselves make small expenditures locally.

.....

Funbio's focus on restructuring to meet the needs of the Arpa program meant that it had to reduce its support for calls for projects. At the time, the governing council and executive secretariat were aware that the organization's impact on conservation projects could be greater if it expanded its financing scale, as this would have a greater impact on biodiversity. Accordingly, Funbio developed a territorial perspective for its projects, using its own resources to leverage other funds from different sources for the development of specific regions, including funding for protected areas in this strategy. It was as part of this strategic shift that in 2007 Funbio underwent its second restructuring process.

In this process, the governing council and team identified which of the services Funbio had developed and perfected since its creation it could offer on the market in order to diversify its organizational scope beyond the Arpa program.

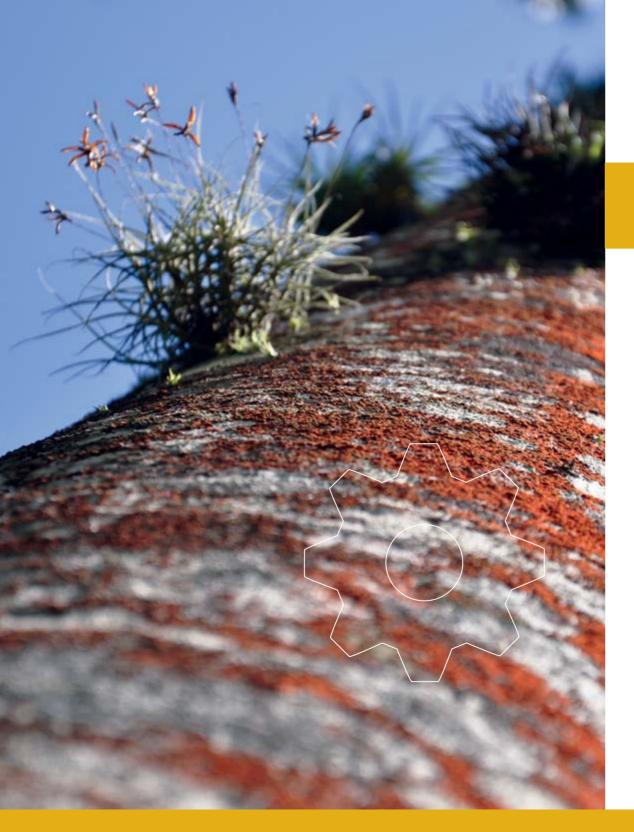
It turned its sights back to the private sector, and started offering services that might attract other funders, thereby planting the seeds for new large-scale programs like Arpa. New areas were created – Applied Knowledge, Financial Mechanisms, and Climate Change – but the programs area remained the heart of our operations, with the challenge to create greater project diversity, find new funding sources, and branch out to include new biomes and new topics in our actions.

The team again grew and new work formats were tested. In the Applied Knowledge area, new capabilities were developed in forming and working in networks, leading projects based on shared knowledge and the exchange of experience. The Climate Change area added forest carbon initiatives to the project portfolio. In Financial Mechanisms, studies were carried out into potential sources of funding for conservation, and to find out what mechanisms would be needed to tap them. It was while this process of change was underway that a new opportunity arose in the form of environmental compensation funds in the state of Rio de Janeiro. The resulting mechanism, named FMA/RJ⁴, has already raised over 280 million reais for the state's protected areas. In 2010, Rosa Lemos de Sá took over as the general secretary of Funbio, bringing a wealth of professional experience that has reinforced the priority given to protected areas.

Today, a new cycle of institutional development is under way. It has become clear that we can achieve a greater impact with more significant results if we focus on the legal requirements of the private sector, offering a diverse array of services for project funders and executors, and if we tap resources from large international funding agencies to support protected areas and fund other kinds of projects. In 2014 we started applying our expertise to marine protected areas, something that had been in Funbio's plans for a long time.

We have learnt that when funding is scaled up this does not necessarily mean the team or the institution's fixed costs have to grow. Rather, it can serve as a driver for improved efficiency, tighter control systems, more professional procedures, and the adoption of policies and safeguards to assure quality to every area.

⁴ FMA/RJ – Mechanism for the Conservation of Biodiversity in the State of Rio de Janeiro.





3. Results

The results presented here were compiled by Funbio's teams working in different programs and projects that provide support for protected areas. The data were gathered from project reports sent to funders and reports issued by control systems.

Funbio provides direct and indirect support for protected areas. Direct support means supporting the creation and consolidation of protected areas, including studies for their creation, hiring experts to draw up protection and management plans, contracting infrastructure works, forming and running management councils, boundary demarcation and signage, land tenure studies, and paying compensation in order to resolve land tenure issues. In most of these cases, we work in partnership with the federal, state or municipal authorities, which are responsible for the activities in the protected areas. To do this, the respective responsibilities have to be clearly delineated, with Funbio taking charge of the financial, administrative and operational management of the aforementioned activities, and the government setting the priorities for each area.

Indirect support comes in the form of projects designed to help protected areas fulfill the objectives envisaged in their creation. These may be research projects, monitoring and conserving endangered species, training managers and park rangers, and providing environmental education and community projects inside and around the protected areas. For these, Funbio provides financial resources through calls for projects, which are then implemented by civil society organizations operating locally, or for the procurement of goods and services.

Direct support

Creation and consolidation of protected areas

- Studies for the creation of protected areas
- Protection and management plans
- Formation and strengthening of management councils
- Procurement of goods and equipment
- Infrastructure works and renovation
- Boundary demarcation and signage
- Resolution of land tenure issues

Indirect support

Projects that contribute to the purpose of the protected areas

- Research
- Species monitoring and management
- Capacity building for managers
- Environmental education
- Community projects

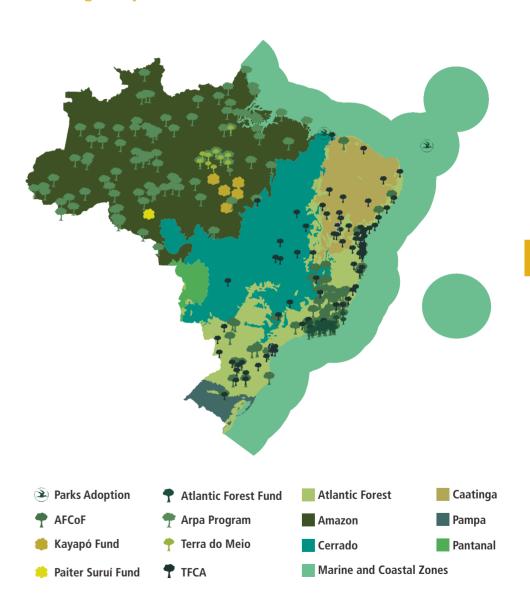
Results of direct support for protected areas

Since it started operating, Funbio has provided direct support for 275 protected areas covering a combined area of 58.5 million hectares, representing 39% of the entire protected area in Brazil, as well as six indigenous lands covering 10.8 million hectares in total.

See Annex 1 for a complete list of the protected areas and indigenous lands supported

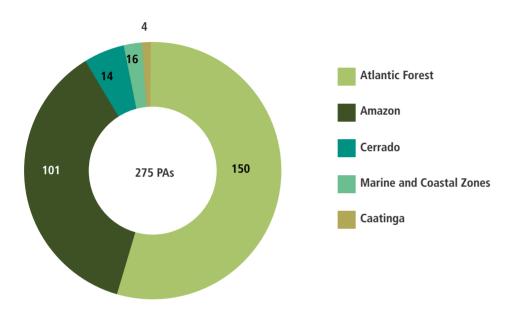
Map 1

Protected areas and indigenous lands that have received direct and indirect support from programs managed by Funbio



3.1 Direct support outcomes

Graphic 1
Protected areas that have received direct support from Funbio since 1996, per biome



N.B. When the areas occupy more than one biome, they are classified under the biome with the largest area

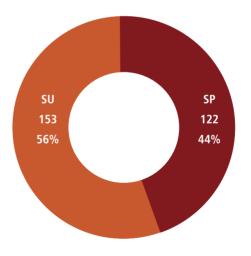
The different types of protected area included in the National System of Protected Areas are split into two broad groups: strict protected areas, and sustainable use areas. Strict protected areas are mainly created for wildlife conservation purposes, and the natural resources in them can only be used indirectly. There are five subcategories of strict protected areas: ecological stations, biological reserves, national parks, natural monuments, and wildlife refuges. The sustainable use protected areas are designed to conciliate wildlife conservation with the sustainable use of resources, conciliating human presence with the protection of the target areas.

There are seven sub-categories: areas of significant ecological interest, private natural heritage reserves, areas of environmental protection, national forests, sustainable development reserves, wildlife reserves, and extractivist reserves.

.....

Of the 275 protected areas that have received direct funding from Funbio, 122 are stricly protected and 153 are for sustainable use, as shown in Graphic 2.

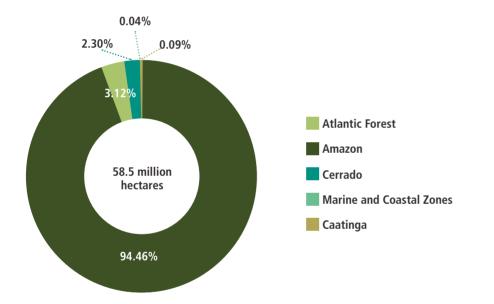
Graphic 2 Number of strictly protected areas vs. number of sustainable use protected areas



Of the 58.5 million hectares that have received direct funding from Funbio, 95% is in the Amazon, as are 100% of the indigenous lands, totaling 10.8 million hectares.

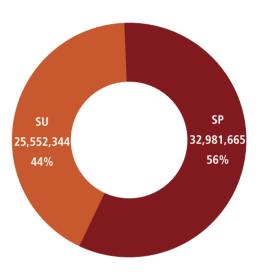
.....

Graphic 3 Area (hectares) of protected areas, per biome



The combined areas that receive strict protection form the majority of the protected areas (see Graphic 4).

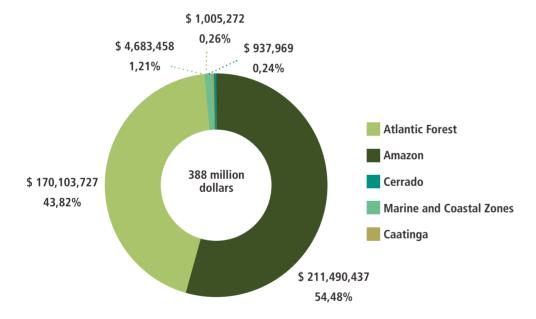
Graphic 4
Area of strictly protected areas vs. sustainable use protected areas (in hectares)



.....

Of the 477.6 million dollars⁵ Funbio has mobilized since its creation, over 388 million dollars (81%) have been used to provide direct funding for protected areas. This shows the relative importance of funding for protected areas in the institution's overall work.

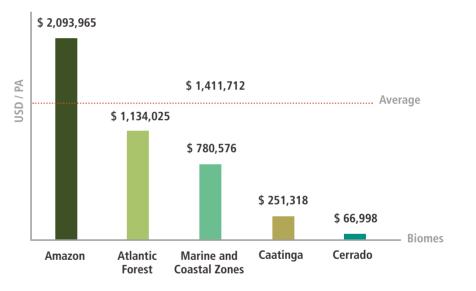
Graphic 5 Amounts contracted to fund protected areas, per biome (in dollars)



5 This amount is the sum of all the contracts signed by Funbio since it started operating, converted into dollars by the exchange rate on the last working day of the month in which they were signed. Contacts in dollars have been included at their face value.

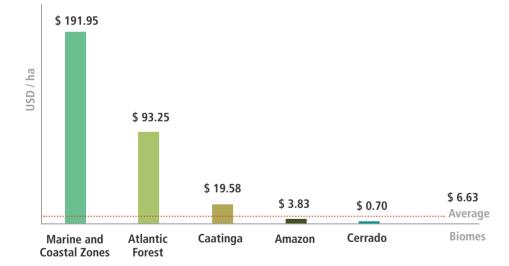
The average funding invested in each protected area is almost 1.4 million dollars. This average was calculated by dividing the total amount invested in protected areas by the total number of areas supported. Graphic 6 shows the average investments per protected area, per biome.

Graphic 6 Average investment per protected area, per biome (in dollars)



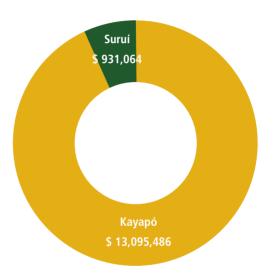
Although the investment in the Amazon is considerably higher than the average investment per biome (Graphic 6), the areas in this biome are far larger than the areas in the other biomes. Considering the totals administered in dollars and the areas funded, the average is 6.63 dollars per hectare. Graph 7 shows the average invested in each biome. In the Amazon, the investment per hectare is 3.83 dollars, while the average investment in coastal and marine areas is 191.95 dollars per hectare, and the Atlantic Forest receives an average of 93.25 dollars per hectare. The average investment made by Funbio per hectare in protected areas in the Cerrado is considerably lower than in the other biomes – just 70 cents per hectare – demonstrating the dearth of funding for this biome.

Graphic 7 Average investment in each biome, per hectare (in dollars)



Alongside these investments in protected areas, some very significant initiatives have been taken in recent years to support indigenous lands, already summing 14 million dollars, benefitting two ethnic groups, as shown in Graphic 8.

Graphic 8 Amount of funding provided for indigenous lands, per ethnic group (in dollars)



In the case of the Kayapó, the financial resources come from an endowment fund, which provides support for an area covering over 10 million hectares. Meanwhile, the Sete de Setembro land, protected by the Suruí, has a sinking fund, providing support for almost 250,000 hectares.

The amounts raised for protected areas and indigenous lands are stated in dollars, since the funding comes from a number of international contracts denominated in dollars and euros. The amounts executed are aggregated in reais, because they are invested in Brazil in the local currency.⁶ When compiling these figures, we did not just look at the financial indicators, which are important considering Funbio's role as a financial mechanism, but also some of the results accumulated in our field work, drawing a closer correlation between investments made and conservation impacts achieved.

The primary result of importance, however hard it is to quantify, is the number of people positively impacted by investments in sustainable use protected areas. Supporting this kind of protected area has always been on Funbio's agenda, not just to maintain the biodiversity in these areas, but also to bring economic and social benefits for the communities that live in them.

At the creation stage, we invest in the studies needed to create protected areas, such as surveys of flora and fauna, registration of local community residents, and identification of priority areas for the creation of protected areas (analyzing threats and the biological importance of the region).

.....

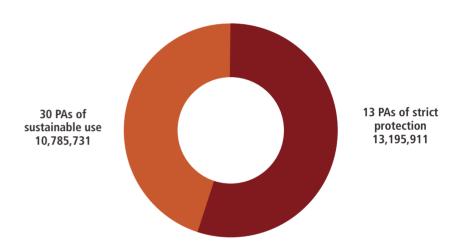
Funbio has invested around 7 million reais in studies for the creation of 46 protected areas and the expansion of two protected areas, summing over 24 million hectares of new protected areas. Through partnerships, Funbio has helped finance studies for the creation of 110 private natural heritage reserves in the Atlantic Forest.

.....

During the first phase of the Arpa program (2003-2010), 43 new protected areas were created in the Amazon summing 23.9 million hectares of protected areas, of which 13 are strict protected areas (13.2 million hectares) and 30 are for sustainable use (10.7 million hectares), as shown in Graphic 9. In the second phase of the program (2010-2015), 20 creation processes have been supported,

corresponding to over 6.9 million hectares of new areas. Three new protected areas have been created and two have been expanded in the Atlantic Forest with the support of Funbio through the Atlantic Forest Conservation Fund (AFCoF I and II)⁷ and the FMA/RJ mechanism, summing 30,000 hectares.

Graphic 9 Number of protected areas created in the Amazon using Funbio funding, and total area (in hectares)



Once a protected area has been created, funds have to be raised so that each area effectively has what it needs to fulfil its objective of maintaining ecosystem services, conserving biodiversity, and fostering opportunities for scientific research, environmental education, and income creation with a lower environmental impact. This is when a protected area must be consolidated and have management mechanisms introduced, including management and protection plans, management councils, a structure for the protected area that is suitable for its category, the allocation of a minimum staff, resolution of land tenure issues, etc.

⁶ To give an idea of the amounts executed, an approximate exchange rate for 2014 would be 1 dollar = 2.3 reais.

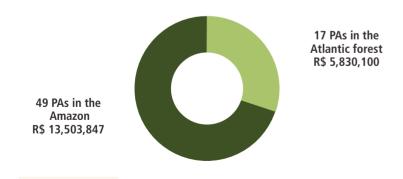
⁷ Atlantic Forest Conservation Fund I and II (AFCoF I and II).

One tool that is recognized globally for its importance for the management of protected areas is the management plan, which sets down what actions need to be taken for a protected area to fulfil its stated goals. It is a dynamic tool that determines how the unit should be zoned, setting rules for its use and the management of its natural resources, and guiding its development according to its purposes.⁸

A total of 19.3 million reais has been invested in preparing and reviewing management plans for 66 protected areas.

By 2013, through the Arpa program, Funbio had invested 13.5 million reais in 49 protected areas in the Amazon, all of which have full management plans. The management plans for three other protected areas in the same biome have also had the work for their plans contracted through the Terra do Meio program. Meanwhile, in the Atlantic Forest, 5.8 million reais has been invested in plans for 17 protected areas. The cost of management plans includes paying for participative workshops for preparing the plans, logistics for researchers, hiring consultancy services, and printing and divulging the final document.

Graphic 10 Investments in management plans (in reais)



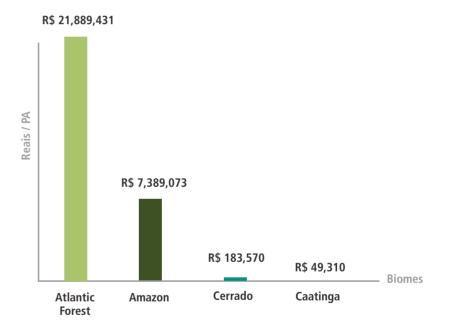
8 Source: IBAMA.

Another crucial type of investment for the consolidation of protected areas is infrastructure.

.....

Through different programs, Funbio has invested over 29.5 million reais in infrastructure for 38 protected areas.

Graphic 11 Investments in infrastructure in protected areas, per biome (in reais)



These investments included buildings (entrance gateways, guardhouses, office buildings, floating offices, lodgings for park rangers and researchers, housing for the park manager), urban development and landscaping projects, topographic surveys for road building, building of regional boats, parking lots and cycleways, and nature trails to enhance the visitor experience.

Infrastructure delivered to protected areas in the Atlantic Forest.

Infrastructure delivered to protected areas in the Amazon.



Photo 1: Guardhouse of Desengano state park

Photo 2: Chief's house at Desengano state park headquarters

Photo 3: Visitors center at Desengano state park

Photo 4: Sustainable headquarters of Guaxindiba ecological station

Photo 1: Headquarters of biological reserve Piratuba Lake, built following bioconstruction principles

Photos 2 and 3: Headquarters of biological reserve - Piratuba Lake
Photo 4: Inside view of the headquarters floating house of Juami Japurá
ecological station

As well as infrastructure developments, protected areas need different types of equipment for them to run effectively. This can be everything from vehicles for inspection purposes (including trucks, boats, motorbikes, etc.) to IT equipment, communication systems, firefighting equipment, etc.

In different programs, Funbio has invested over 21.3 million reais in the purchase and maintenance of goods and equipment for protected areas.

This support has covered the costs of awareness-raising and community



Truck bought to fuel helicopters used for inspections, fighting environmental crime and fire fighting in protected areas in Rio de Janeiro state

Funbio supports the training, functioning and strengthening of management councils for protected areas with the objective of enabling them to operate in harmony with their surroundings and engage different stakeholders in their management.

It has invested a total of 13 million reais in supporting the councils of 103 protected areas, fostering the participation of different stakeholders in their management.

engagement meetings to form the councils, the ordinary meetings of the councils once they are formed, the logistics for holding these meetings (lodging, board and transport, including fuel, rental of boats, etc.), and other activities.

> Other important ways consolidation of protected areas is supported is through boundary demarcation and signage, land tenure surveys, the drafting and signing of declarations of responsibility (signed by traditional communities to establish the terms under which they are granted access to strict protection areas) and payments to resolve land tenure issues. Around 2 million reais of Arpa funds have been invested in signage for 82 protected areas in the Amazon.

Signaling the Guariba Roosevelt extractive reserve

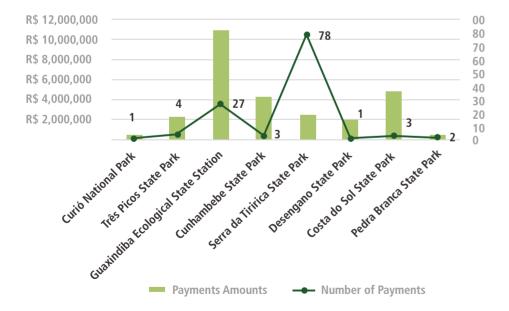
The same funding source has also covered the boundary demarcation of 33 protected areas and land tenure studies for 32 protected areas. Declarations of responsibility for 30 protected areas have been drafted and signed.

.....

Using the FMA/RJ mechanism, Funbio has invested 2.8 million reais in signage and boundary demarcation for four protected areas and over 27 million reais in 119 payments to legalize land tenure for eight protected areas in the Atlantic Forest. Graphic 12 shows the number of payments and amount in reais per protected area that has received support to resolve any land tenure issues. In some cases, the amount is not significant, but multiple payments are required.

.....

Graphic 12 Amounts and number of payments made to resolve land tenure issues in the Atlantic Forest



Although Funbio has provided funding for protected areas since it was created, the data on direct funding presented here refer mainly to the period since 2003, when the Arpa program began. This program was effectively responsible for a step change in Funbio's biodiversity conservation in Brazil, while it also spurred the development of unique capabilities in the provision of targeted solutions for protected areas.

3.2 Contributions to Climate Control

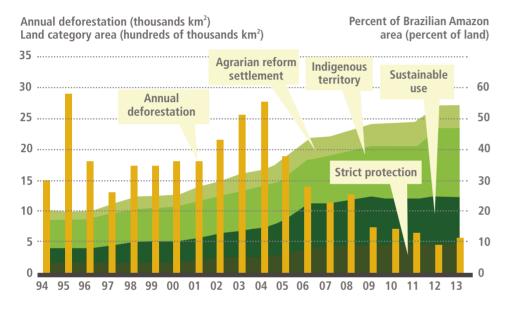
By contributing to the consolidation of protected areas in Brazil, Funbio is adding to the global effort to reduce CO2 emissions by curbing deforestation. The number of protected areas has grown rapidly in the last ten years, and today they cover 27.1% of all tropical forests around the world. They serve as "green belts" against the spread of illegal logging, because they deter unregulated land occupation and other destructive actions by man, inhibiting the progress of fire, trespassing by illegal loggers, the unplanned advance of the agricultural frontier, and land speculation, amongst other things.

In Brazil, the creation and introduction of protected areas is seen as an effective public policy for controlling deforestation and supporting the global effort to stabilize the temperature of the planet, as set forth in the Brazilian policy for the control of deforestation in the Amazon. From 2004 to 2006, the growth of protected areas was responsible for 37% of the reduction in the rate of deforestation.⁹

⁹ IPEA, CEPAL, GIZ 2011. Avaliação do Plano de Prevenção e Controle do Desmatamento na Amazônia Legal: PPCDAM: 2007-2010. H.Maia, J. Hargrave, J.Gomez, J.J. Ropper. Brasília.

Graphic 13 shows the increase in the protected areas in the Brazilian Amazon, which now cover 54% of remaining forests, and the direct relationship with the drop in deforestation.

Graphic 13 Protected areas in the Amazon and reduction of deforestation



Source: Nepstad D., D. McGrath, C. Stickler, A. Alencar, A. Azevedo et al. 2014. Science 344, 1118

These protected areas stock 25 billion tons of carbon, or 54% of the total carbon in the Brazilian Amazon, estimated in different studies to be between 47 and 54 billion tons.

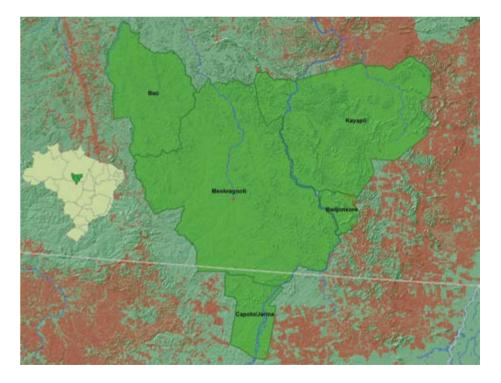
Funbio's support for the Arpa program is its greatest contribution to global climate control. The protected areas supported by Arpa alone have combined stocks of 5 billion tons of carbon.

.....

By 2050 all the strictly protected areas and sustainable use protected areas in the Brazilian Amazon will be responsible for a 15 billion ton reduction of CO2, the equivalent of five times the emission reduction obtained from the drop in deforestation in the region between 2005 and 2012, when deforestation rates were at their lowest since 1997.¹⁰

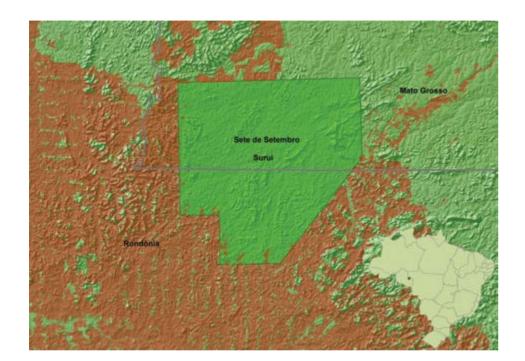
Funbio also supports REDD+ (Reducing Emissions from Deforestation and forest Degradation) initiatives and funds for indigenous lands, which have also proved an effective barrier against deforestation, since they keep vast areas of native forests preserved in areas where everything surrounding them has already been destroyed, as is the case of the two projects involving indigenous peoples supported by Funbio: the Suruí Fund and the Kayapó Fund.

Map 2 Kayapó land surrounded by deforested areas



10 Soares-filho, B., P. Moutinho, et al, 2010. Role of Brazilian Amazon Protected Areas in climate change mitigation. PNAS 107 (24): 10821-10826.

Map 3 Sete de Setembro (Suruí) land surrounded by deforested areas



3.3 Results of indirect support for protected areas

Alongside its direct support for the creation and consolidation of protected areas, Funbio also provides support for projects that help protected areas attain their goals. Selected in calls for projects or in procurement processes for goods or services, these projects are submitted and run by civil society organizations working in conservation using funding from Funbio and other sources. Funbio therefore calculates the results of shared conservation work done in the field by key partners as part of its own results.

The support it provides is for community projects inside and adjacent to protected areas with a view to creating alternative sources of income, and initiatives to raise the awareness and engagement of communities in conservation activities, reducing pressure on natural resources.

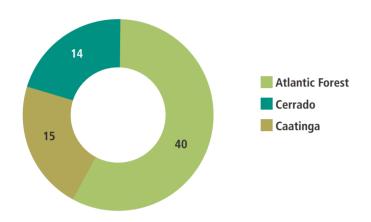
Funbio has already supported 38 community projects affecting protected areas, with summed investments of around 4.8 million reais.

Other forms of indirect support are research projects, monitoring, management and conservation of endangered species, capacity building for managers and park rangers, and the development and introduction of agroforestry systems.

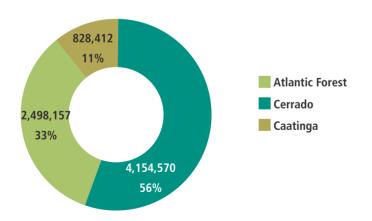
Projects of this kind have been supported particularly in calls for projects as part of the Tropical Forest Conservation Act (TFCA) program, which is funded by a debt swap between the Brazilian and U.S. governments for the protection of remaining forest patches in the Atlantic Forest, Cerrado and Caatinga. Funbio has channeled 9.4 million reais from the TFCA into these projects, providing indirect support for 69 protected areas¹¹ covering a total of 7.4 million hectares. In surface area, the higher proportion of these indirectly supported protected areas are for sustainable use (38 protected areas covering 5.7 million hectares). The remaining 1.7 million hectares is divided amongst 31 strictly protected areas. Graphics 14 and 15 show the number of protected areas receiving indirect support per biome and the respective areas per biome.

¹¹ See Annex 1 for a full list of the 69 protected areas that have received indirect support.

Graphic 14 Number of protected areas that have received indirect support from the TFCA



Graphic 15
Area (hectares) of the protected areas that have received indirect support from the TFCA



N.B. When the areas occupy more than one biome, they are classified under the biome with the largest area.







4. Solutions

MOBILIZATION MECHANISMS

Bi and multilaterais agreements

Donations and sponsorships

Conduct Adjustment Agreements

Environmental compensation

Debt for nature swap

Sanctions and licensing conditions

arbon credits

EXECUTION MECHANISMS

Disbursements to projects

Procurement

rust Funds

PAs bank accounts

Studies

FUNBIO

The results presented in the third chapter were obtained from a variety of resource mobilization and execution mechanisms. The solutions were adopted, adapted or created to serve the different requirements of funders and governments and the complex management needs of the protected areas themselves. A variety of resource mobilization mechanisms are used to access funds from multiple sources. These different tools enable contracts to be signed with funders whose needs and requirements may be quite diverse. Meanwhile, the execution mechanisms are designed to make sure that the funds raised reach protected areas in the form of the goods and services they need to function effectively. Funbio's work in accessing and executing funds yields concrete data that it then applies to studies into the costs of the consolidation of protected areas and the sources of funding available. The results of these studies subsequently inform the design of its medium- and long-term financing strategies.

4.1 Resource Mobilization Mechanisms

Bilateral and Multilateral Agreements

Funbio was created as a result of a multilateral agreement, with funds from the GEF through the World Bank. This type of resource mobilization for conservation is therefore the oldest method used by Funbio. Bilateral and multilateral agreements between countries are important instruments in international diplomacy and conflict resolution. They enable countries to join forces to face common challenges in observance of legal principles. ¹² As environmental and climate change concerns are global in nature, some of these agreements have set aside funds for environmental projects to tackle more alarming cases of degradation or preserve unique biodiversity.

Funbio is the financial manager and executor of several bilateral and multilateral agreements signed by the Brazilian government for biodiversity conservation by supporting protected areas. The funds are channeled into projects and programs where the government defines and negotiates with the funders what the conservation priorities and actions should be and Funbio invests the funds according to the terms of the agreements.

12 Organization of American States.

The Arpa program is a good example of a conservation program of global interest that receives funding from bilateral and multilateral agreements. Funbio administrates funds from the GEF, a multilateral entity, for the Arpa program, which has already allocated 45.8 million dollars for protected areas. The program has also received around 57.6 million euros from the German government through the KfW Development Bank, 20 million reais from the Amazon Fund, created through a bilateral agreement with the government of Norway and managed by the Brazilian Development Bank (BNDES), and 4.5 million dollars from the Inter-American Development Bank.

Donations and Sponsorships

Donations and sponsorships are not a significant source of funding if we analyze the total Funbio invests in protected areas in Brazil. The absence of tax incentives and a culture of environmental philanthropy in the country could explain the modest figures in this area.

Nonetheless, donations and sponsorships are still important sources of funds from private companies which decide to exercise their environmental responsibility by funding conservation projects in protected areas. Funbio receives corporate donations and sponsorships, invests them, and provides the accountability the companies need to communicate and publish their environmental investments.

International donations have proved a more significant source of funding than Brazilian donations and sponsorships. They mostly come from international NGOs and foundations, mostly from the United States. Funbio has received several international donations, and this form of resource mobilization has proved important for environmental funds in general.

The Park Adoption program was created to receive funds from private companies keen to adopt a given protected area. OGX and Eneva have adopted the Fernando de Noronha and Lençóis Maranhenses national parks, respectively, providing funds for their infrastructure and facilities. Meanwhile, Natura, O Boticário and Anglo American have donated funds to the Arpa program.

Conduct Adjustment Agreements

Conduct adjustment agreements are instruments public entities can use to curb illicit acts. In the environment, they have proved efficient in conflict resolution, because they offer mitigatory or reparatory alternatives for the enforcement of environmental legislation.

Conduct adjustment agreements are administrative contracts signed by the perpetrators or potential perpetrators of environmental damage and the authorities. The parties that sign them undertake to take certain measures to resolve the issues they are causing or could potentially cause, or else to compensate for damage and harm already caused. They can be used at an administrative level directly between the perpetrator of the harm and the authorities, and also as the part of legal proceedings with a view to bringing the suit to a speedier conclusion and accelerating the introduction of corrective actions. One of their advantages is that in view of their conciliatory nature, they unclog the judicial system, while also providing quicker environmental reparations.

Something else that makes conduct adjustment agreements so advantageous for the enforcement of environmental legislation when they are signed out of court is that they spare companies the public embarrassment of appearing as defendants in civil suits or criminal proceedings. They can therefore be very helpful in resolving conflicts within the ambit of environmental law.

Funbio now receives funds raised from conduct adjustment agreements from the private sector and invests them in conservation projects, helping companies make amends for any environmental harm they have caused.

Fauna Brazil Portfolio is a financial mechanism created by Funbio in partnership with Ibama¹³, ICMBio¹⁴ and the Federal Public Prosecution Service. Its aim is to fund programs and projects for the conservation of Brazilian fauna. It receives funds from criminal sanctions, environmental fines, donations, sponsorship and other sources, including payments from conduct adjustment agreements. Through the Fauna Brazil Portfolio, Funbio has received and invested almost 3 million reais from conduct adjustment agreements companies that provide seismic services have signed with the Federal Public Prosecution Service. These funds have been invested in conservation projects for Brazilian marine fauna. Funbio has replicated the Fauna Brazil Portfolio model to create other portfolios of protected areas to receive funds from conduct adjustment agreements.

¹³ Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (Brazilian environmental protection agency).

¹⁴ Instituto Chico Mendes de Conservação da Biodiversidade (Chico Mendes Institute for Biodiversity Conservation).

Environmental Compensation

Environmental compensation is a public policy instrument linked to industrial licensing processes, and aims to harmonize environmental dynamics with social and economic development processes. Environmental compensation allows the social and environmental costs of degradation brought about by business ventures to be incorporated into their overall costs. Article 36 of the National System of Protected Areas law, for requires businesses to provide funds for the creation and maintenance of strictly protected areas when the environmental licensing process for a venture of theirs finds that it will cause major environmental harm. Environmental compensation therefore has an important function in enforcing and strengthening this law.

Once the licensing entity sets the amount of environmental compensation payable for a given venture and what form it should take, the company signs a declaration of responsibility. According to the National System of Protected Areas law, compensation must always be executed in the form of funding for protected areas, in line with the priorities established by the law.

The mechanisms Funbio has developed for compensation funds have enabled it to harness a significant source of private sector funding for protected areas.

In Rio de Janeiro, Funbio administrates FMA/RJ, a mechanism designed to receive funds, especially from environmental compensation, for the consolidation of state-run protected areas. The mechanism started working in 2009, and since then it has raised over 280 million reais for the state's protected areas. A total of 40 federal, state and municipal protected areas have benefitted.

15 Passed in 1981 by federal law 6938/91 - National Environmental Policy.

16 Law 9985/2000, which introduced the National System of Protected Areas.

Debt-for-Nature Swap Agreements

Debt for nature swap agreements were first adopted successfully in the 1990s, especially in Latin America. They constitute a procedure whereby a creditor country, normally a developed nation, agrees to negotiate with a debtor country, normally a developing country, to reduce their debt by converting it into environmental projects in the debtor country. This decision depends on each country's specific circumstances, the costs involved, and the willingness of the respective countries (especially the creditor) to adopt this mechanism.

Converting debt into environmental projects has generated funds for a broad range of projects, including the strengthening of protected areas in Costa Rica, the development of ecotourism in Ghana, and the conservation of tropical forests in Bangladesh. Peru, Colombia, El Salvador, Jamaica and Bolivia have all managed to transform significant portions of debts into funding for environmental projects.

One of the debt-for-nature swap models that the U.S.A. uses is the Tropical Forest Conservation Act (TFCA), approved by the Senate in 1998, and geared towards tropical forest conservation. By December 2010, 14 Central and South American, Asian and African countries had signed 17 TFCA agreements with the U.S. government worth over 266 million dollars.

Brazil signed a TFCA agreement in August 2010, making it the 16th country to take advantage of the mechanism. The 20.8 million dollars in debt reduction awarded under the agreement has been used to support conservation in the Atlantic Forest, Caatinga and Cerrado over a five-year period. Funbio is the executive secretariat of TFCA Brazil, and has so far provided grants worth 32.6 million reais for 82 projects through five separate calls for projects.

Conversion of fines, criminal sanctions and license conditions

Just as Funbio invests payments private sector companies are required to make by law, such as environmental compensation or conduct adjustment agreements, other sources of funding can also be tapped for the consolidation of protected areas. Environmental fines and other sanctions can both be converted into support for protected areas.

License conditions are another source of resources that can be used for environmental conservation projects. If a licensing authority finds that a business must make investments in the environment as a prerequisite for being awarded a license for a particular venture, this investment may be included in a contract for given projects.

Funbio has received funds from fines, sanctions and license conditions through the Fauna Brazil Portfolio. The Sea Cow Monitoring Project in the Potiguar river basin is funded by monies Petrobras was required to pay in a licensing process. Just as Funbio administrates these resources for fauna preservation projects, the portfolio of protected areas also enables Funbio to receive and invest this kind of funding to support protected areas.

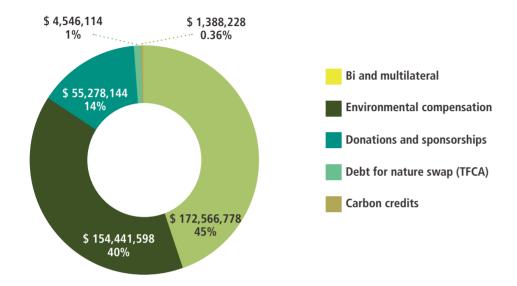
Sale of carbon credits

The sale of carbon credits is another way financial resources can be raised for socioenvironmental projects. Credits can be obtained by certifying avoided carbon emissions. In the case of forest carbon projects, proof must be provided that preserving a given area will avoid the emission of the carbon stored in the forest, and that this area would likely be deforested if the carbon project did not exist.

Funbio only works with REDD+ (Reducing Emissions from Deforestation and forest Degradation) carbon credit projects, which are designed precisely to preserve native forests. By preserving these forests, Funbio preserves the habitat of countless species from Brazil's great biological diversity, as well as helping maintain the culture and way of life of traditional communities, since these areas are generally occupied by indigenous or river-dependent communities.

Funbio is responsible for designing and providing the financial management for the Paiter Suruí Fund, used to introduce a management plan for the Sete de Setembro indigenous land. The financial resources obtained from the sale of carbon credits are an integral part of the fund, whose main beneficiaries are the Suruí people. The funds obtained from the sale of carbon credits, worth around 1.3 million dollars, will be invested in projects for sustainable production, craftwork and cultural projects proposed by local associations and villages.

Graphic 16
Funds raised for protected areas (in dollars) per mechanism



Graphic 16 demonstrates the relative importance private resources, especially from environmental compensation, now have in the support Funbio provides for protected areas. Though bilateral and multilateral agreements are still the main funding source, environmental compensation has great as yet untapped potential. The compensation funds illustrated here are only from the state of Rio de Janeiro.

4.2 Execution Mechanisms

Funds Management

Funds management is one of the most important mechanisms Funbio uses. The existence of funds enables financial resources to be raised, and through their management they can earn interest and yield conservation results in the long term.

Once again, the Arpa program was a great learning opportunity for Funbio in this respect. Since the outset it has had an endowment fund¹⁷, where only the earnings are used while the capital remains untouched. Funbio has acquired considerable expertise in asset management from managing this fund and its own reserve fund (the financial resources left over from the initial GEF grant).

Funbio manages its assets with the assistance of an external manager supervised and guided by an asset management committee made up of members of the governing council and invited experts. This committee devises the investment policies and reports on the performance of the portfolios to the governing council.

Arpa for Life has marked the beginning of the third phase of the Arpa program and a long-term commitment on the part of donors and the Brazilian government. A 215-million-dollar transition fund will finance the consolidation processes for the Arpa protected areas over 25 years, over which time the federal and state governments will gradually take over the cost of maintaining this subsystem of protected areas. The transition fund includes funds from bilateral and multilateral agencies, donations from NGOs and foundations, and donations from Brazilian and foreign companies.

¹⁷ In endowment funds, only the earnings are spent, while the principal remains untouched in perpetuity.

Disbursements

Disbursements are transfers of financial resources to other organizations in charge of running projects selected in calls for projects. This is Funbio's most traditional method for getting resources into the field and converting them into conservation results. It has used this mechanism since it published its first call for projects in 1996.

In order for disbursements to be effective, the projects must present workable plans of action with schedules for their execution and budgets, all of which must be annexed to the contracts signed with Funbio. Once the execution of the first disbursement is confirmed, a new disbursement is made, until the project receives all the funds agreed on in the contract. Good reporting practices by the projects and good monitoring practices on the part of Funbio are essential for the success of the disbursement process.

The Atlantic Forest Conservation Fund (AFCoF) has supported both phases of the Atlantic Forest Protection Project, with the aims of protecting, sustainably managing and recuperating the biome. More than half the funds, donated by the German government, have been invested through disbursements to other institutions that do work in the biome. Some of the projects that have received AFCoF funding have invested in protected areas.

Procurement of goods and services

In 2003, Funbio started to provide logistical support, financial management services and management support for the Arpa program. To ensure its success in this new undertaking, it made a series of internal adjustments and introduced new operational mechanisms. A procurement team was formed to make acquisitions of goods and hire services, observing the World Bank's guidelines.

The Arpa program gave the procurement team experience in planning and procuring goods and services in response to the particular needs of protected areas in the Amazon, which involve complex logistics. This experience was subsequently adapted to meet the needs of other projects and different donors.

The procurement team is constantly engaged in hiring services for protected areas: national and international events, lengthy expeditions to hard-to-reach places, building of administrative HQs on land and on water, and preparing management plans. It also acquires all manner of equipment for activities inside protected areas, including boats, engines, vehicles, hydrological stations, firefighting equipment, etc., administrates numerous contracts for consultancy and other services, and acquires a large volume of air tickets.

Today, the procurement team is involved in all Funbio's projects and business areas, and has developed its own guidelines for the procurement of goods and services based on its experience and on the rules stipulated by the main donors, like the World Bank. The area also helps develop special projects, like green procurement, and improves related processes and tools.

The headquarters of the Lago Piratuba Biological Reserve in the state of Amapá was built in line with the principles of green construction. Using funds from the Arpa program, the Funbio procurement team contracted and oversaw the building services, which involved novel technologies to reduce the environmental impact and the need for the transportation of materials. Earthbag construction ("superadobe") is a green building technique that uses bags of compacted earth to build walls and shelters. Most of the building material consists of earth from the site itself, which, thanks to its naturally excellent insulation qualities, has also reduced cooling and heating costs.

PAs bank account and debit card

The PAs bank account is a special current account for each protected area. Funbio created this mechanism in 2005 especially for the Arpa program to facilitate the work of the managers of protected areas, so they could make the small purchases they needed for their daily running. Using the PA bank account, certain supplies and services (e.g. fuel, office supplies, services for events, etc.) can be purchased locally. This improves the efficiency and cost-effectiveness of many of the activities included in the annual plans of operations prepared by their teams.

Each protected area from the Arpa program manages its own account, which receives funds designated exclusively for expenses approved in the plan of operations and authorized by the program donors. Funbio manages the cash flow of the accounts. It sets the maximum amount they can contain, and only tops them up after checking and approving the expenditure at the end of the month or when 80% of the total has been spent. Original proofs of purchase (receipt, invoice, etc.) must be submitted for every acquisition, which are conferred and signed by the respective responsible persons.

Funbio has also created a PA debit card with the same purpose as the PA bank account. It is pre-paid, personalized, and can be topped up, and also serves as an alternative payment mechanism for small local expenses. This mechanism was created for the FMA/RJ.

The PA bank account and debit card do not only facilitate the daily running of the protected areas, but they also empower managers to contract locally, forging stronger bonds with the local communities and providing local income.

FMA/RJ has introduced PA debit cards for local expenditures for the benefit of the protected areas in the state of Rio de Janeiro. The cards are provided for managers of units, inspection teams, and the park warden services of the protected areas that are beneficiaries of FMA/RJ funding. The cards are linked to current accounts in the name of the manager of the FMA/RJ financial mechanism, which is currently Funbio.

4.3 Studies

Thanks to the experience it has built up in resource mobilization and investment mechanisms for protected areas, Funbio has acquired a considerable body of knowledge in this area that it uses in studies to find new solutions for the future actions.

The primary focus of these studies is the financial aspects of protected areas, investigating how to measure their financial requirements and how to identify and quantify current and potential sources of funding. By analyzing these two aspects, financing strategies for individual protected areas or regional or national groups of protected areas can be designed.

Funbio's financial mechanisms team has conducted studies of this nature for the protected areas included in the Arpa program, in the Cerrado, in the states of Acre, Rio de Janeiro, Paraná, Pará, Rondônia, Amapá and Amazonas, as well as a study for the national protected areas of Guinea Bissau.

Other studies have been done with the aim of integrating the issue of climate change with the maintenance of protected areas, either through forest carbon projects generating financial resources for them, or through the analysis of economic incentives for low-carbon activities or the reduction of deforestation.

"Economic instruments for reducing deforestation in the Amazon" is a study that analyzes the basic political, spatial and economic dynamics that lead to deforestation. The proposed approach allies inspection with positive incentives for forest preservation. The article concludes with proposals for ways federal and state governments could work together to take full advantage of each other's strengths.





5. Trends

One of the studies conducted by the financial mechanisms team resulted in an article that presented an overview of the funding environment for protected areas in Brazil, projecting its future behavior into the mid and long term. Called "The future of the funding environment for protected areas" it investigates the funding environment for the National System of Protected Areas and what factors could transform it. The existing challenges were identified, as well as what opportunities could lead to a brighter future and what Funbio's role could be in these future developments.

Basically, the findings showed that the National System of Protected Areas in Brazil faces two major challenges: how to manage and consolidate existing protected areas more effectively, and how to expand the number of areas, ensuring full and representative protection for all the country's biomes. These challenges are reflected directly in the need to obtain a reliable, adequate supply of funds. This is a big challenge, since many of the protected areas are at an incipient stage of consolidation and face multiple obstacles in their most basic of tasks, including nature conservation itself.

Although not all the challenges protected areas face are of a financial nature, the shortage of funds is one of their main difficulties, limiting their capacity to acquire the infrastructure and facilities they need, hire enough human resources with the right skill sets, or even cover their maintenance costs.

Brazil has 1,828 federal, state and municipal protected areas. The total area covered, discounting overlaps, is almost 150 million hectares, representing 16.9% of the country's land mass and 1.5% of its marine area. Of this total, 34.2% is strictly protected areas and 65.8% is sustainable use protected areas.¹⁹

Financial difficulties are often directly related to other obstacles, such as rigid bureaucracy, underequipped public entities, inefficient management models, and an imbalance in the values perceived by society. If the financial shortfall was overcome, at least some of the other repressed demands could be tackled, such as the shortage of equipment and personnel. Simultaneously, improving the management models, infrastructure and capabilities of the personnel could itself make it easier for new funds to be raised and better employed, as the existing financial and human resources would be used more efficiently.

Another key point for consolidating protected areas is the resolution of land tenure issues, a longstanding problem that often represents a major financial liability. Estimates published by ICMBio, which manages federal protected areas, suggest that there is around 54,000 km2 of private land that has not been expropriated or indemnified inside federal protected areas where no people should be allowed.²⁰

For financial sustainability to be attained, the actual costs of all the protected areas must be analyzed, as well as their capacity to absorb resources over time, their annual revenues, and the resulting funding gap. Based on this, a strategy has to be drawn up for supplying and managing new resources. The quest for financial sustainability is one of the biggest challenges the National System of Protected Areas has to face.

19 Source: National Registry of Protected Areas, Ministry of the Environment (CNUC/MMA) – www.mma.gov.br/cadastro_uc.

20 Report by the Federal Court of Accounts – TC 034.496/2012-2.

For protected areas to be created, introduced, consolidated and managed, a stable flow of funds must be provided from a variety of sources that can cover the necessary expenses and investments. The first step in the quest for financial sustainability is to harness more resources from existing sources, which are mostly from government budgets, environmental compensation payments and donations, and simultaneously to broaden the search for new sources.

At the present time, the government budget is the main source of funding for the National System of Protected Areas. This is especially true for personnel and maintenance expenses. Competition for public funds is fierce, and for many reasons the environment has consistently been overlooked in favor of countless other demands. Only 0.33% of a recent federal budget was earmarked for environmental management, and only 18.15% of the Ministry of the Environment budget goes to ICMBio.²¹ The environmental agenda, especially for protected areas, is often perceived as a barrier to economic development, which is why it fails to attract political support.

The public budget can also be supported by different tools, including: public use; forest concessions; environmental fines and sanctions; payment for environmental services as set forth in the National System of Protected Areas law; Reducing Emissions from Deforestation and forest Degradation (REDD+); national and international donations; loans with attractive terms; the Amazon Fund; and legal requirements (e.g. environmental compensation payments, legally protected private set-aside areas and reforestation).²² Each of these sources of funding requires a different level of effort to be accessed. Some of them are already used by Funbio and were described in the section on resource mobilization mechanisms.

22 All these are explained in the full version of the article that this chapter is based on.

²¹ Data from the National Department of the Treasury website.

Aside from the existing sources of funding, there are also other potential sources that are still being developed or are currently no more than potential opportunities, and may or may not materialize in the future. The current dearth of financial resources coupled with the rising cost of conservation makes these potential new sources increasingly important, even if they often take a long time to mature. Some examples are: environmental fines paid by rural smallholders, green lotteries, utility bill round-up programs, fundraising products, entrance fees for foreigners, and green bonds.

.....

Conservation funding is also directly linked to some of the main vectors of socioeconomic, environmental and climate change, because they could influence the future supply and demand of resources, and thereby the way alternative financial mechanisms are operated and developed by Funbio.

.....

ICMBio's budget has stagnated at critical levels in recent years, and has actually fallen in real terms (taking inflation into account) since 2010. Its scant resources are designated for the basic maintenance of protected areas, which means the shortfall must be filled by fully optimizing existing sources of funding, accessing new sources, and adopting alternative management models. Innovation is the key to bridging the existing budget gap.

There are several sources of funds that could be used by the system of protected areas, with different financial potential and fundraising strategies. Taking a more upbeat view, we could also mention some sources of funding that could have a key role in expanding and consolidating the National System of Protected Areas. The public budget could be supplemented by a larger proportion of the environmental compensation payments made by mining companies, the new law on access to genetic resources, and environmental fines. Visitor fees and forest concessions could also supplement their revenues. The sources of funding outside the public budget that could help fund protected areas in the short run are: environment compensation, compensation in the form of legally protected private set-aside areas, reforestation, international cooperation (despite the downward trend), carbon markets, the Amazon Fund, and some incipient initiatives.

A second dimension of this discussion has to do with the pressing need to develop funding strategies to meet the goals of protected areas as a whole, in order to prioritize and monitor the allocation of resources. Target-based planning must be introduced to focus on the areas capable of earning their own income and the ones that are under the most pressure.

The future of institutions like Funbio must be reconsidered in view of this funding reality and the projected socioeconomic and environmental scenarios. Funbio must ready itself for the challenges and opportunities ahead if it wants to continue to play a significant role in assisting protected areas, channeling financial resources, and fostering efficient institutional arrangements. Change must be anticipated and appropriate adaptations made. The efforts required to mitigate and adapt to the effects of climate change will put pressure on the costs of protected areas, as will population growth, increased consumption, and the expansion of industry and fishing. Their budgets have not risen in line with inflation, so finding and managing new sources of funding is now an absolute necessity. Funbio aims to play an important role in the financial security of protected areas into the future.

.....

One of Funbio's goals is to continue to be a preferred partner for international cooperation. Despite the downturn in this form of funding, its importance for the consolidation of protected areas is not set to change in the short term. Costs must be kept low, managerial performance must stay consistently high, and good relations with the authorities must be maintained.

.....

In parallel, it is important to look to the Brazilian private sector. As the economy grows and society puts increasing pressure on businesses to demonstrate socioenvironmental responsibility, the scant involvement of the private sector in protected areas could see a turnaround. But this also depends on the supply of government incentives. So far, Funbio has managed to obtain some significant results with the Brazilian private sector, but they are still limited. Dialog must be maintained and extended in a bid to align needs and requirements.

Another key to the sustainability of protected areas is the design and management of financial mechanisms that facilitate the influx of funds to these areas. The demand for such tools is on the rise, and Funbio has been active in this area, especially but not exclusively for funds from environmental compensation payments. It is likely that new environmental funds will be required, and Funbio should be ready to develop and manage them.

New instruments also need to be devised. With its vocation for innovation, Funbio has the capacity to design and propose new funding sources. It could also suggest new arrangements or even ways to get round existing bottlenecks. Alongside the design of financial mechanisms, it could also develop new sources of funding, such as green bonds for the resolution of land tenure issues, and systems for the payment of environmental services or other economic instruments.

Another trend could come in the form of sustainable businesses in protected areas, which could provide funds for private partners as well as the protected areas themselves. This could involve public use, forest management, and the harvesting of non-timber products. One of Funbio's tasks could be to make funds available for these businesses, while also furthering the consolidation of these areas.

While continuing to value its key assets – credibility, transparency and efficiency in the investment of funds – Funbio's future lies in remaining a key partner for governments in projects to consolidate and maintain protected areas. As it studies the financial environment, designs economic instruments and tools and private arrangements for the investment and efficient management of financial resources, Funbio faces a future of multiple challenges and opportunities. This is why it must look forward, think ahead of the game, and constantly adapt to the changes on the horizon. Society and society's demands are dynamic, and so must be the institutions that represent it.

