



Mata Atlântica
Biodiversidade e Mudanças Climáticas

BIODIVERSITY AND CLIMATE CHANGE IN THE ATLANTIC FOREST PROJECT



PART 1: EXPERIENCES AND LESSONS LEARNED

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PART 1: EXPERIENCES AND LESSONS LEARNED

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**BIODIVERSITY AND CLIMATE CHANGE
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List of Acronyms

EbA	Ecosystem-based adaptation
ANA	National Water Agency
APA	Environmental Protection Area
APA CIP	Environmental Protection Area of Cananéia-Iguape-Peruíbe
APP	Area of Permanent Preservation
BMU	German Ministry of Environment, Nature Protection and Nuclear Safety
CAR	Rural Environmental Registry
CBD	Convention on Biological Diversity
CEPAN	Northeast Centre of Environmental Research
CI	Conservation International
Conaveg	National Commission for Restoring Native Vegetation
DAP	Department of Protected Areas/SBio/MMA
DECO	Department of Ecosystem Conservation/SBio/MMA
DIMAN	Directorate for Creation and Management of Protected Areas/ICMBio
DISAT	Directorate for Social and Environmental Actions and Territorial Consolidation of Protected Areas /ICMBio
EPANB	National Biodiversity Strategy and Action Plan – NBSAP
Funbio	Brazilian Biodiversity Fund
GAMBA	Environmental Group of Bahia
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (German Technical Cooperation)
IBAMA	Brazilian Institute of Environment and Renewable Natural Resources
ICMBio	Chico Mendes Institute of Biodiversity Conservation
IKI	International Climate Initiative – BMU
IN	Normative Instruction
IPEA	Institute of Applied Research in Economics
IUCN	International Union for the Conservation of Nature
KfW	German Development Bank
Lagamar	Mosaic of Protected Areas of the southern coast of São Paulo state and the coast of Parana state
MAPA	Ministry of Agriculture, Livestock and Food Supply
MAPES	Mosaic of Protected Areas in the Extreme South of Bahia
MARISCO	Adaptive Management of Risk and Vulnerability in Conservation Sites
MCF	Mosaic of Protected Areas of the Central Atlantic Forest in Rio de Janeiro
MMA	Ministry of Environment
NDC	Nationally Determined Contribution under the UNFCCC
OEMA	State Environmental Agency
Pacto	Pact for the Restoration of the Atlantic Forest
Planaveg	National Plan for the Restoration of Native Vegetation
PMABB	Program for Environmental Monitoring of Brazilian Biomes
PMMA	Municipal Plan for Conservation and Restoration of the Atlantic Forest
NAP	National Plan for Adaptation to Climate Change

List of Acronyms

PNAP	National Plan of Protected Areas
POA	Annual Operational Plan
PRA	Program for Environmental Compliance
Proveg	National Policy for Restoration of Native Vegetation
PES	Payment for Environmental Services
REDD+	Reduction of Emissions originating from Deforestation and Forest Degradation
RL	Legal Reserve
RMA	Atlantic Forest NGO Network
RPPN	Private Reserve of Natural Heritage
SBio	Secretariat of Biodiversity/MMA
SECEX	Executive Secretariat/MMA
SEDR	Secretariat of Sustainable Forest Management and Rural Development/MMA
SiCAR	System of Rural Environmental Registry
SFB	Brazilian Forest Service
SMCF	Secretariat of Climate Change and Forests/MMA
SNUC	National System of Conservation Units
TEEB	The Economy of Ecosystems and Biodiversity
TNC	The Nature Conservancy of Brazil
UC	Conservation Unit
UCP	Project Coordination Unit
UFPR	Federal University of Parana
UNESP	State University of Sao Paulo
UNFCCC	United Nations Framework Convention on Climate Change
WRI	World Resources Institute



Presentation	13
1. Background and context of the Atlantic Forest project	15
2. Project objectives and approach	17
2.1. Ecosystem-based adaptation – EbA – to climate change	18
2.2. Project components	19
2.3. Regions of project implementation	20
2.4. The Project and Brazilian environmental policy	22
<i>Reflections and lessons learned about the project approach</i>	23
<i>Complexity due to the innovation of the climate change and adaptation themes</i>	23
<i>Importance of a strategy for strengthening capacity building in EbA</i>	24
<i>Thematic concurrence between various projects</i>	24
<i>Multi-level strategy</i>	25
<i>Seizing opportunities</i>	25
<i>Synchrony between Modules of Technical and Financial Cooperation</i>	26
<i>The regions of protected área mosaics as areas of implementation</i>	27
3. Priority thematic lines of the project	29
3.1. Ecosystem-based Adaptation: development of concepts and capacities	29
3.1.1. Strategy for Developing Capacities in EbA	29
<i>Reflections and Lessons Learned about the Strategy for Developing Capacities in EbA</i>	31
3.1.2. Study on impacts of climate change in the Atlantic Forest	31
<i>Reflections and lessons learned about the study</i>	33
3.2. Climate change and EbA in instruments for land use planning	34
3.2.1. Municipal Plans for Conservation and Restoration of the Atlantic Forest (PMMA)	35
<i>Reflections and lessons learned about PMMA</i>	37

3.2.2. Management Plans of Conservation Units	37
<i>Reflections and lessons learned about Management Plans</i>	38
3.3. Restoration of Native Vegetation	39
3.3.1. National Plan for Restoration of Native Vegetation	40
<i>Reflections and lessons learned about Planaveg</i>	43
3.3.2. Strengthening the Pact for the Restoration of the Atlantic Forest – Pacto	43
<i>Reflections and lessons learned about strengthening the Pact</i>	46
4. Project Impacts	49
4.1. Innovation, learning and capacity building	49
4.2. Generation of knowledge for decision making	50
4.3. Support of public policies	50
4.4. Gains in biodiversity conservation	51
5. Management mechanisms	53
5.1. Achieving indicators	53
<i>Reflections and lessons learned about indicators</i>	57
5.2. Partnerships and cooperation	57
<i>Reflections and lessons learned about partnerships and cooperation</i>	58
5.3. Governance structure	59
Reflections and lessons learned about governance structure	62
5.4. Strategic and operational planning	63
<i>Reflections and lessons learned about strategic and operational planning</i>	64
<i>Planning routines</i>	64
<i>Performance of the MMA / GIZ team</i>	65
5.5 Communication and information management	66
<i>Reflections and lessons learned about communication and information management</i>	66
6. Final Considerations	69

Figures

Figure 1. Cycle for the integration of ecosystem-based adaptation – EbA in planning	18
Figure 2. Regions of Atlantic Forest project activities	21
Figure 3. Reach of the indicators of the Technical Cooperation Module of the Atlantic Forest project	55
Figure 4. Governance structure of the Atlantic Forest project	60

Tables

Tabela 1. Main results of the Atlantic Forest project related to ecosystem-based adaptation: development of concepts and capacities	33
Tabela 2. Main results of the Atlantic Forest project related to climate change and EbA in instruments of land use planning	39
Tabela 3. Main results of the Atlantic Forest project related to the theme Restoration of Native Vegetation	47



The Biodiversity and Climate Change in the Atlantic Forest project (Atlantic Forest project) is coordinated by the Ministry of Environment (MMA), in the context to the Brazil-Germany Cooperation for Sustainable Development, under the auspices of the International Climate Initiative (IKI) of the German Ministry of Environment, Nature Protection, and Nuclear Construction and Security (BMUB).

The project's objective is to promote biodiversity conservation and restoration of native vegetation in three regions with mosaics of conservation units in the Atlantic Forest, as a way to contribute to the mitigation of and adaptation to climate change.

The project has a Technical Cooperation Module, provided by the German Technical Cooperation (GIZ GmbH), and a Financial Cooperation Module, provided by the German Development Bank (KfW Entwicklungsbank), which operates through the Brazilian Biodiversity Fund (Funbio). These modules share the same objectives, carry out complementary activities and together comprise the Atlantic Forest project.

The project's Technical Cooperation Module was carried out between April 2013 and March 2018, and its primary focus was to provide advice and provision of services for the project's conceptual and methodological development, as well as support for partnerships and capacity building in the themes addressed by the project. The Financial Cooperation Module was initiated in November 2016 and seeks to capture larger-scale investments for implementing the proposed conservation and restoration activities.

This document seeks to present the main experiences and lessons learned from carrying out the Technical Cooperation Module. To do this, the MMA and GIZ teams joined forces to record the history of the project since its conception, and to reflect on its management and implementation, including the perspectives of several partners involved in the project, which were obtained through interviews carried out by a consultant. The case studies on the project's main activities are available in Part II of this publication.

It is hoped that the reflections presented in this document will help improve the implementation of the Financial Cooperation Module and assist in preparing and initiating new international cooperation projects under the auspices of the Ministry of Environment, as well as other initiatives related to the themes and objectives of this project.

The results already obtained by the Atlantic Forest project, as well as those still to be obtained through the continuation of the Financial Cooperation Module, have great potential to promote positive impacts in the conservation and restoration of the regions where the project operated and in the Atlantic Forest as a whole, becoming part of a strategy for adaptation to climate change based on the conservation of biodiversity and ecosystem services.



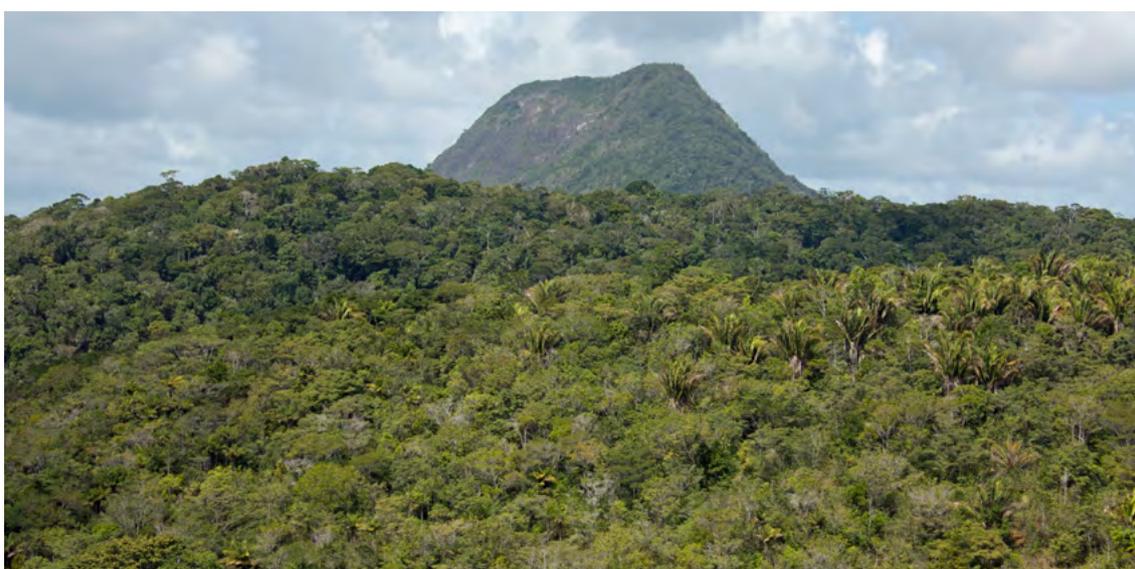
1. Background and context of the Atlantic Forest project

The Atlantic Forest is formed by a set of forest formations and other associated ecosystems, such as swamps, mangroves and highland meadows, which in sum originally covered approximately 1.3 million km² in 17 states of Brazil. The historic settlement of the Atlantic Forest caused large-scale environmental degradation, mainly due to the exploitation of natural resources and disorderly urbanization. The remnant native vegetation covers only 29% of the original area and is highly fragmented, which represents a threat to biodiversity conservation and the supply of environmental services such as water availability and climate regulation.

Due to the combination of anthropic pressures and exceptionally high richness of endemic biodiversity, the Atlantic Forest is recognized as one of the five most important biodiversity worldwide (Myers *et al.* 2000)¹. The Atlantic Forest also plays an important role as a carbon sink of global significance and furnishes an enormous range of ecosystem services for Brazilian society as a whole.

In this context of high degree of fragmentation and isolation of the remnants of vegetation, climate change poses an additional threat. Extreme climatic events have caused considerable socioeconomic damage in recent years, due to disorderly settlement and the advanced degradation of areas of the Atlantic Forest. Furthermore, the vulnerability of the region's highly fragmented ecosystems to climate change is poorly understood.

As a result, integrated management for conserving and restoring the native vegetation of the Atlantic Forest, with an ecosystem approach and incorporating factors related to climate change, represent an enormous challenge for the region.



¹ MYERS, N.; MITTERMEIER, R. A.; MITTERMEIER, C. G.; DA FONSECA, G. A. B.; KENT, J. Biodiversity hotspots for conservation priorities. *Nature*, v. 403, p. 853-857, 2000.



2. Project objectives and approach

Considering the growing occurrence of climate change impacts, the project sought to strengthen mechanisms of mitigation of and adaptation to climate change in the Atlantic Forest, based on conserving and restoring biodiversity and ecosystem services. Consequently, the following challenges and gaps, identified during the preparation of the project proposal, should be addressed:

- ☑ The level of knowledge on ecosystem vulnerability and resiliency to climate change was considered insufficient to support decision making on how to confront climate change in the Atlantic Forest. By the same token, the actors involved in territorial and environmental planning, as well as the implementation of actions to conserve and restore the Atlantic Forest, were unprepared to incorporate in their activities the effects of climate change.
- ☑ The restoration of the biome's natural vegetation cover and degraded areas constitutes a fundamental challenge to overcoming the fragmentation of the Atlantic Forest. However, the methodologies for addressing this challenge were not yet consolidated or disseminated.
- ☑ The economic mechanisms to promote the conservation and restoration of the Atlantic Forest were not at a desirable level of development and dissemination.
- ☑ The relations between climate and biodiversity had not been incorporated into public policies and institutional decisions regarding conservation and restoration of the Atlantic Forest.

Overcoming these obstacles should lead to fulfilling the project's highest objective, which was to promote biodiversity conservation and restoration of the native vegetation in selected regions of the Atlantic Forest (mosaics of conservation units), as a contribution to climate change mitigation and adaptation.

2.1. Ecosystem-based adaptation – EbA to climate change

To guide project activities in the interface between biodiversity conservation and climate change, the Ecosystem-based Adaptation (EbA) was adopted. This approach, developed under the auspices of the Convention on Biological Diversity (CBD) and afterwards also adopted by the United Nations Framework Convention on Climate Change (UNFCCC), proposes using biodiversity and ecosystem services as part of a overall adaptation strategy to help people to adapt to the adverse effects of climate change.

Consequently, the project’s general structure was based on the implementation cycle proposed by this approach, as shown in Figure 1. The overall focus of the Technical Cooperation Module was the development of capacities for identifying, prioritizing and implementing ecosystem-based adaptation to climate change measures in regions of the Atlantic Forest selected for project field activities.

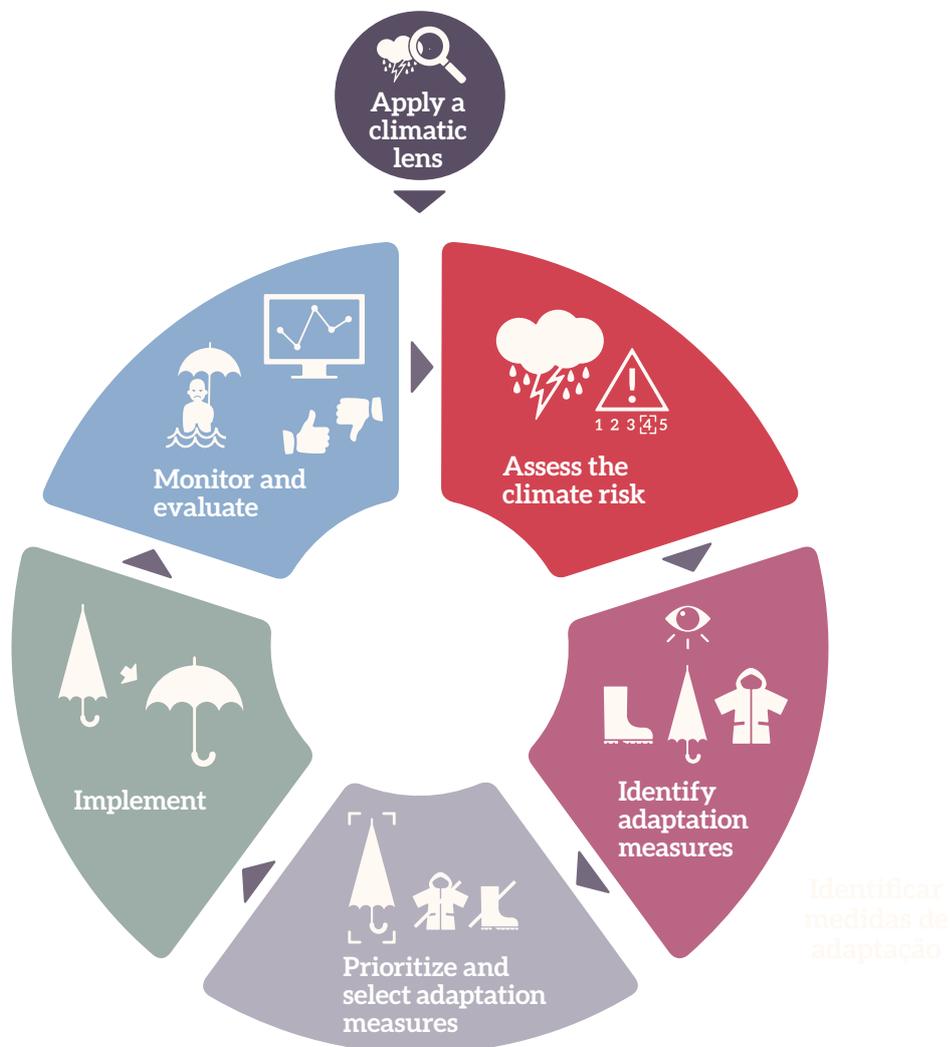


Figure 1. Cycle for the integration of the ecosystem-based adaptation – EbA - approach in planning processes.

2.2. Project components

The Atlantic Forest project was implemented through four components:

Analyses of vulnerability and land use planning

This component encompasses activities related to preparing models and scenarios involving land use, connectivity, climate risk and potential adaptation measures; and to integrating lessons learned on land use planning instruments at local, state and national levels.

Economic instruments

This component encompasses activities related to analysing economic instruments that address biodiversity conservation and restoration of native vegetation; improving and divulging these instruments; and to supporting capacity building for their implementation.

Ecosystem-based strategies and measures for mitigation of and adaption to climate change

This component encompasses activities related to the identification and participatory selection of measures for the conservation of biodiversity and restoration of native vegetation aiming at climate change mitigation and adaptation in the regions targeted by the project; and to capacity building for implementing these measures.

Public policies for conserving biodiversity, restoring native vegetation and addressing climate change

This component carried out the integration of lessons learned from EbA in the formulation and implementation of public policies and programs at national, regional and local levels; and measures for capacity building of key actors.



2.3. Regions of project implementation

The activities carried out by the Atlantic Forest project were concentrated in three regions where mosaics of conservation units are concentrated.

The main objective of Mosaics of Conservation Units, according to the National System of Conservation Units (SNUC), is to promote the integrated and participatory management of conservation units and other protected areas, seeking to reconcile, in a regional context, the biodiversity, the socio-diversity and the sustainable development (Law no. 9,985/2000).

The integrated management of conservation units and their buffer zones permits the implementation of integrated land use planning instruments and the incorporation of aspects related to climate change, improving the conditions for restoring the Atlantic Forest and the connectivity of its ecosystems. Furthermore, it encourages the maintenance and valuation of ecosystem services. Consequently, the mosaics were understood as priority regions for achieving project activities.

Implementing the project in three defined regions was expected to optimize efforts, increase the impact and effectiveness of accomplished actions and obtain good results over the long term, with a view to build models that could be replicated in other regions of the Atlantic Forest.

To guide the selection of areas for regional project implementation, the existing conservation unit mosaics in the Atlantic Forest were prioritized according to the following criteria:

- I. Representativeness at the biome level, considering the major regions of the Atlantic Forest (South, Southeast and Northeast); and
- II. Organizational aspects, such as institutional density, possibility for consolidating existing initiatives, potential for co-financing, etc.

Based on these criteria, the following conservation unit mosaics were selected (Figure 2)²:

- I. Mosaic of Protected Areas in the Extreme South of Bahia – MAPES;II.
- II. Mosaic of the Central Atlantic Forest in Rio de Janeiro – MCF;
- III. Mosaic of the southern coast of Sao Paulo and the coast of Parana –Lagamar Mosaic.

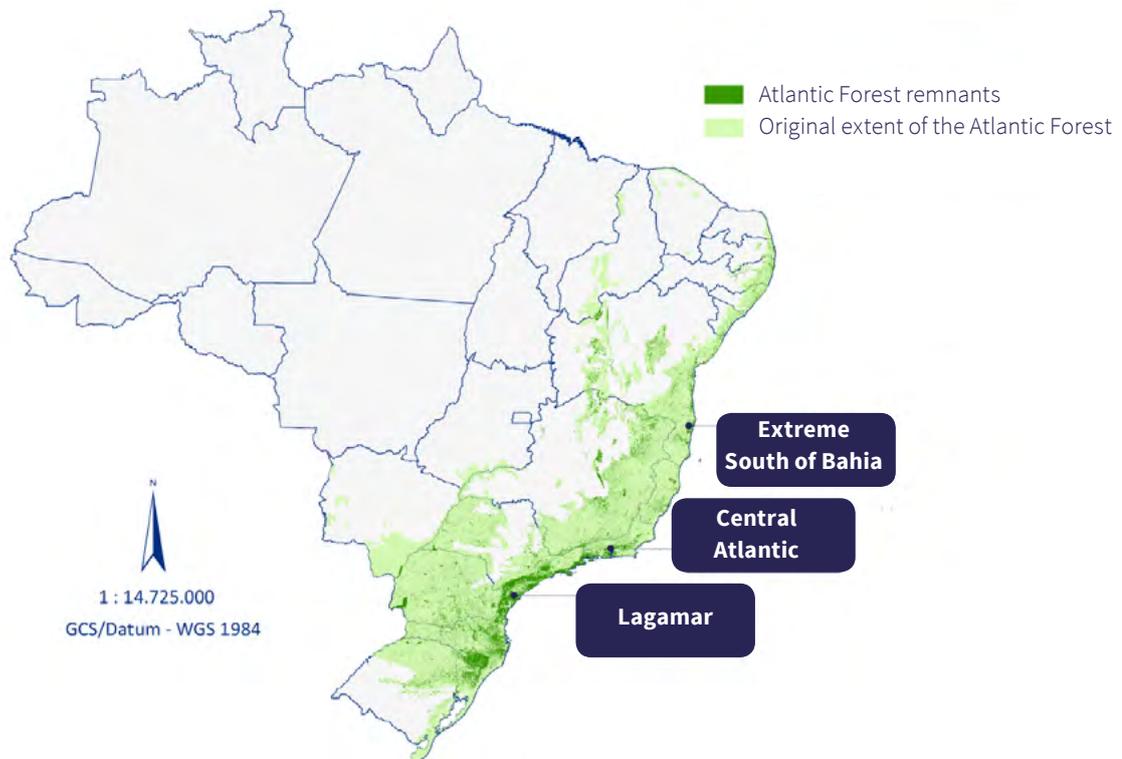


Figure 2. Regions of Atlantic Forest project activities.

² The ordinances of the MMA that officially recognize the Mosaics, including their names and maps of their component Conservation Units, are available at the link: <http://www.icmbio.gov.br/portal/mosaicosecorredoresecolgicos/mosaicos-reconhecidos-oficialmente>

Additionally, the project included current actors involved in the Northeast region of the Atlantic Forest, located in the states of Sergipe, Alagoas, Pernambuco, Paraíba, Rio Grande do Norte, Piauí and Ceará, focusing specifically on capacity building and institutional strengthening.

2.4. The project and the Brazilian environmental policy

The set of issues addressed by the Atlantic Forest project is related, directly and indirectly, to the following strategies and public policies relevant to the themes of climate and biodiversity:

- ☑ Preparation and implementation of the National Strategy and Action Plan for Biodiversity (EPANB), linking the National Biodiversity Targets for 2020 within the reach of the Brazilian commitments to the Convention on Biological Diversity – CBD.
- ☑ Implementation of the instruments of the Law for Protecting Native Vegetation (Law no. 12,651/2012), which substitutes the Forest Code and emphasizes the protection of areas of native vegetation in rural properties, the implementation of the Rural Environmental Registry (CAR) and Environmental Compliance Programs (PRAs); and preparation and implementation of the National Policy for the Restoration of Native Vegetation (Proveg) and the National Plan for the Restoration of Native Vegetation (Planaveg).
- ☑ Implementation of the instruments envisioned in the Atlantic Forest Law (Law no. 11,428/2006) and its regulations, with emphasis on the planning and implementation of Municipal Plans for the Conservation and Restoration of the Atlantic Forest PMMA).
- ☑ Expansion and consolidation of the National System of Conservation Units (SNUC) and implementation of the National Plan of Protected Areas (PNAP), emphasizing the inter-relations between protected areas and climate change.
- ☑ Preparation and implementation of the National Plan for Adaptation to Climate Change (PNA), designed to fulfill the Brazilian commitments under the United Nations Framework Convention on Climate Change (UNFCCC).

Reflections and lessons learned about the project approach

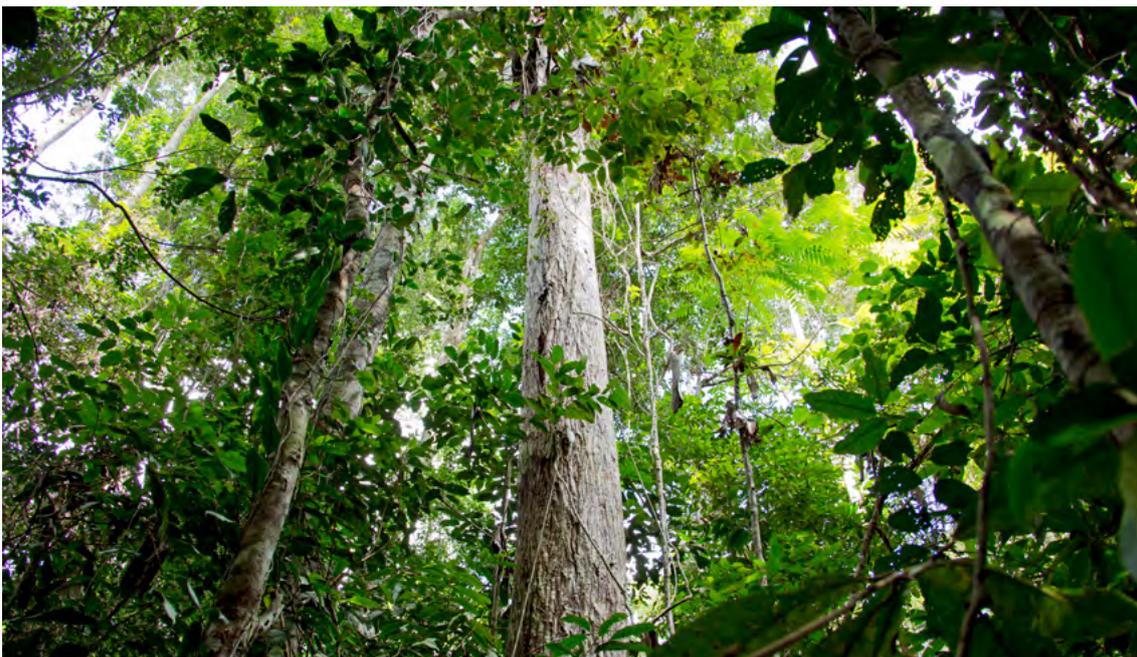


Complexity due to the innovation of the climate change and adaptation themes

The Atlantic Forest project was carried out under the auspices of the Brazil-Germany Cooperation, which has been implementing projects in the Atlantic Forest for at least four decades. The project was prepared based on lessons learned from the Protection of the Atlantic Forest projects, phase I (2009-2010) and phase II (2010-2013).

Although the project is part of this historic tradition of partnership between Brazil and Germany for protecting the Atlantic Forest, its implementation did not occur in direct continuity to the prior project supported by the IKI Initiative. The Protection of the Atlantic Forest II project already implemented actions at the interface of biodiversity and climate change, but its contribution took place primarily through efforts to conserve remnants of Atlantic Forest. In contrast, the design of the Biodiversity and Climate Change in the Atlantic Forest project proposed a tighter and more effective linkage between biodiversity and climate change. Furthermore, the implementation period of the project was characterized by the gradual strengthening of initiatives to restore native vegetation as a priority issue for the Atlantic Forest. As a result, the project's approaches and methodologies involved a high number of innovative elements.

The project's conception was prepared at a time of new awareness in Brazil and worldwide about the theme of adaptation to climate change. The partners recognized the high relevance of this theme and considered timely and appropriate the strategy of linking biodiversity and climate change through an Ecosystem-based Adaptation (EbA) approach.

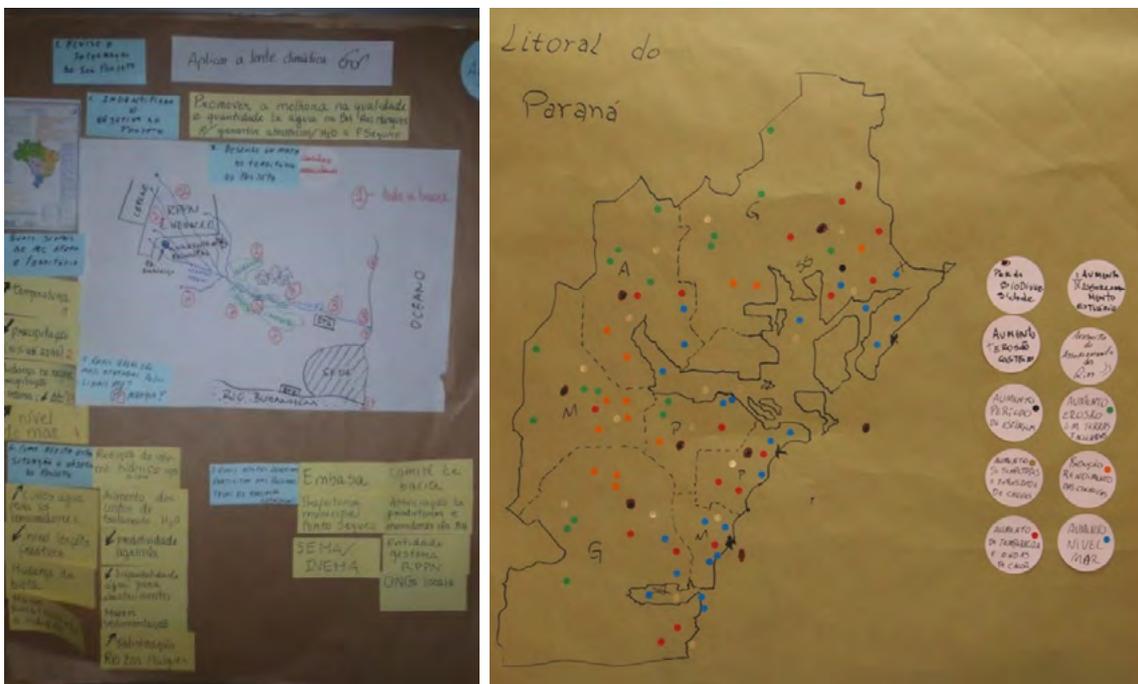




Importance of a strategy for strengthening capacity building in EbA

The need to familiarize actors with concepts and methodologies that permit working at the interface between biodiversity and climate change resulted in the project dedicating almost two years to a structuring phase, during which it invested in capacity building. The expectation of advancing rapidly toward implementing climate change mitigation and adaptation measures in the Atlantic Forest had to be adjusted.

The adaptation to climate change had few experiences of implementation when the project was conceived and planned. In addition to conceptual maturation, the structuring phase was dedicated to conceiving and implementing a comprehensive process of capacity building in EbA, which was understood as a critical concept for attaining the project objectives. Several partners emphasized this process as one of the project's most relevant contributions.



Thematic concurrence between various projects

The project acted in various thematic areas that were also addressed in other initiatives, including those supported by the German Cooperation. While on the one hand these arrangements favor synergies and complementarities, on the other hand institutions have difficulty in the articulated and strategic management of a set of programs and projects. For future initiatives, it is worthwhile evaluating the aggregate value and operability of allocating similar themes in several projects.



Multi-level strategy

The project strategy envisioned both local and regional implementation and the generation of contributions to national public policies as well as on global targets. Linkages between locally implemented experiences, public policies and global targets were seen as positive by the project partners, but, at the same time, it is necessary to consider that initiatives that seek to connect these different levels of action demand enormous efforts of articulation among diverse administrative spheres (national, regional and local) and are generally subject to operational bottlenecks, which must be considered when formulating the project risks.

Perceptions about the duties and capacities of governmental agencies operating at these various scales vary between the partners. On the one hand, it was considered that the Ministry of Environment should concentrate its efforts in conducting initiatives of a national or federal nature, especially considering its operational limitations of maintaining presence at a local or regional level. On the other hand, it was also argued that national public policies must be nurtured and developed on the basis of local and regional implementation experiences. However, several partners pointed out that local and regional implementation should take place through more effective delegation and utilization of local capacities. MMA should maintain a catalyzing role and act in the monitoring of actions, strengthening the internalization of local experiences in national initiatives.



Seizing opportunities

Throughout its implementation, the project benefited from circumstances that led to unforeseen but important impacts in the context of its objectives. One of several examples was the opportunity to provide substantial inputs to the formulation of the National Policy for Restoration of Native Vegetation (Proveg). The process for the elaboration of this policy could not be anticipated during the period of project design. It is recommended that this type of impact be emphasized in the reporting of the project.





Synchrony between Modules of Technical and Financial Cooperation

The initial perspective of implementing simultaneously the Modules of Technical and Financial Cooperation did not materialize, and instead the two modules were carried out sequentially. This had different effects on the project's lines of action. In some cases, there occurred discontinuities that undermined the expected advances, such as in implementing activities related to land use planning instruments, because it was planned to finance the elaboration and the revision of the PMMA and UC management plans with the resources of the Financial Cooperation. In other cases, the possibility of maturing concepts and developing methodologies through the Technical Cooperation will enable the Financial Cooperation to be implemented with more consolidated inputs and conceptual foundations. As a recommendation for future joint initiatives involving the two cooperation modules, a project should be implemented in phases, with one phase dedicated to preparation of instruments and a second phase to implementation with more robust financial support.

In addition, some of the project indicators depended on contributions from both modules and, as a result, were only partially achieved at the end of implementing the Technical Cooperation Module. If the sequential implementation had been clear from the beginning, the articulation between the modules could have been more consistent. It is recommended that future joint initiatives involving Technical and Financial Cooperation do not opt for interdependent indicators.





The regions of conservation unit mosaics as areas for implementation

In general, the selection of conservation unit mosaics as the territorial focus for implementing actions was considered the right choice by the project executors and partners. Despite the difficulty of prioritizing regions across such a large and heterogeneous biome, distributing limited resources throughout the entire Atlantic Forest region was not considered to be a better alternative. Conservation unit mosaics are recognized as relevant instruments within the framework of integrated territorial strategies for conservation and restoration.

However, the degree of institutionalization and operational ability that the governance bodies of mosaics should have is the subject of continuous debate and there is no consensus on this issue. These controversies became increasingly evident during the project implementation and the concept of mosaics was subject to diverging interpretations in such a way that their aggregating function was weakened. As a result, the project's focus on mosaics, with the expectation of achieving aggregated local impacts by integrating the project's thematic lines, faced difficulties. As a result, the implementation focused on specific themes in priority regions.

During its implementation, the project succeeded in developing alternative strategies for dialogue at the regional and local level in order to achieve its objectives. Thus, for example, regional and local implementation was carried out in conjunction with the states where the three mosaics were located. The dialogue with the federal conservation units was undertaken by the Chico Mendes Institute for Biodiversity Conservation (ICMBio), through its regional representatives. These arrangements enabled the implementation of various planned actions but were not favourable to achieving the more ambitious progress that was initially planned in relation to the integrated land management strategies within the mosaics.





3. Priority thematic lines of the project

3.1. Ecosystem-based Adaptation: development of concepts and capacities

Ecosystem-based Adaptation (EbA) seeks to use biodiversity and ecosystem services as a strategy to help people adapt to the impacts of climate change. As mentioned previously, due to its history of deforestation, disorderly settlement and urbanization, the Atlantic Forest has undergone extreme fragmentation of its vegetational remnants, to which are added the threats of climate change. It is therefore essential to work with EbA in the Atlantic Forest, since these measures address the needs of conserving and restoring biodiversity, generating multiple benefits for society, in addition to adapting to climate change.

When the Atlantic Forest project began, adaptation to climate change and, in particular, EbA were receiving increasing attention in Brazil and worldwide. Even though its concepts and approaches were still poorly known in the country, EbA showed potential to be used in the context of the project. In addition, a new methodology for capacity building recently developed by the German Cooperation at the international level was carried out by the project, training its team and partners.

Taking all the above issues into consideration, the Atlantic Forest project elected EbA as its main approach, pervading all its objectives, components and activities. The overall project objective, to conserve and restore the native vegetation as a way to contribute to the mitigation of and adaptation to climate change, reflects this approach. With EbA as its essence, the project operated in a broad context, beginning with knowledge generation on climate change and EbA, and including capacity building of people and institutions, as well as planning and strengthening tools for implementing EbA measures, and culminating in the mainstreaming of EbA in public policies.

3.1.1. Strategy for Developing Capacities in EbA

The Atlantic Forest project developed a Strategy for Capacity Building in EbA after carrying out the first trainings for the project team and partners, during which the need for more courses and for content development about EbA for Brazil was perceived (see Case Study I).

Different formats for training were developed according to the target audience: specific courses for trainers with technical and pedagogical content; methodological courses focused on the application of technical content; and awareness raising and communication courses about EbA.

To the whole, four training courses for trainers were offered, benefitting 69 trainers. Eleven methodological courses were organized in seven cities, covering all the project regions, with



267 participants. In addition, events for raising awareness on climate change and EbA were carried out in different contexts, such as the Atlantic Forest Week (every last week of May).

Throughout the life of the project, awareness raising initiatives proved to be relevant, both for regional audiences or those involved with the different land use planning instruments prioritized by the project, or for other sectors, such as those involved in the National Plan for Adaptation to Climate Change (PNA).

In addition, the project identified and took advantage of several opportunities for the consolidation and diffusion of the EbA approach, scaling up its scope and the sustainability of its adoption. For example, the opportunity for integrating the EbA approach in several other capacity building programs, such as an online course on preparing Municipal Plans for Conservation and Restoration of Atlantic Forest (PMMAs) and an initiative of conceiving a course on Distance Learning on EbA, under construction at the MMA.

Reflections and Lessons Learned about the Strategy for Developing Capacities in EbA

The Strategy for Capacity Building in EbA is considered a great success of the project, due to its consistency and the comprehensive way in which it was implemented. The initial focus on carrying out training in EbA resulted from the high demand for expertise in this field by the project's technical staff and the partners for effective action at the interface between climate change and biodiversity.

However, after the first two years, demand for training had to be contained because it was far greater than initially expected and was overloading the project. The capacity building shifted to emphasize the feasibility of project actions, especially in the integration and application of EbA in land use planning instruments.

The general introduction to the EbA approach, delivered in the initial trainings, provided the necessary knowledge and was considered valuable by the participants. Nevertheless, the participants had difficulty in conceiving practical applications of the methodologies. For this reason, it was necessary to develop methodological adaptations for the courses, including coaching activities for the trainees, to assist in the first steps of implementing the EbA cycle in their work contexts. These courses were in preparation for the initiatives to incorporate EbA into public policies and land use planning instruments.

Several partners pointed out the need to advance even further in applying EbA proposals, especially in relation to developing approaches that permit the involvement of non-technical audiences and the design and implementation of specific adaptation measures.

The EbA trainers were key actors in the process of institutionalizing this approach, to the degree that they provide continuity to address this theme within their own institutions. The institutionalization with partners involved in the implementation of the project, yielded practical and immediate results, due to their greater proximity and motivation.

The voluntary nature of EbA insertion in public policies and territorial planning instruments favors different applications of the approach and emphasizes the importance of building awareness.

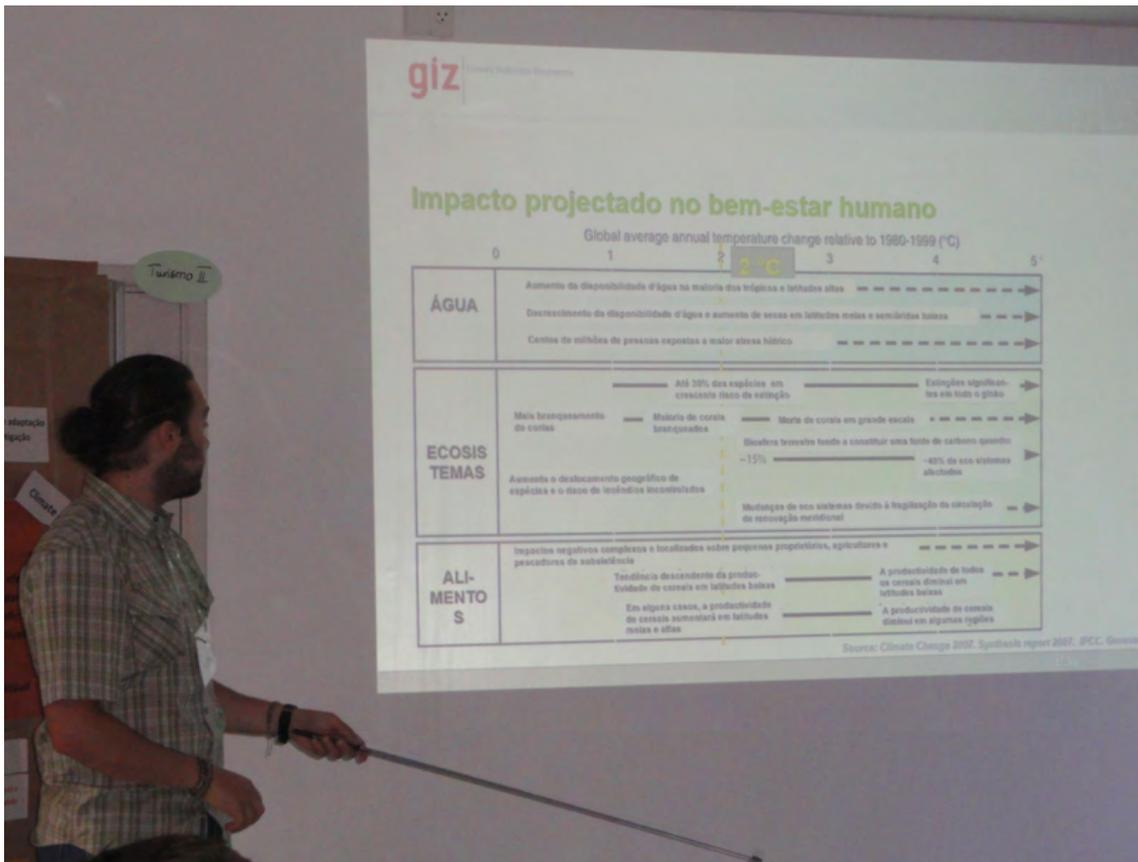
3.1.2. Study on impacts of climate change in the Atlantic Forest

The main objective of this study was to fill a gap in scientific information identified by the project partners about regional data and information on the effects of climate change in the Atlantic Forest. Such information enables the consideration of climate change in the planning processes and in the definition of necessary adaptation measures.

The study analyzed seven biophysical impacts of climate change on the Atlantic Forest: (i) flooding, (ii) hydric erosion, (iii) landslides; (iv) soil water availability; (v) distribution of

disease vectors (vi) impacts on agroclimatic zoning; and (vii) impacts on the distribution of vegetation types.

The lack of clear and spatialized information on the impacts of climate change currently represents one of the main obstacles to the definition of strategies and actions for adaptation. The study analyzing these impacts thus represents an advance in filling this gap and inserting the planning of EbA measures into public policies and land use planning instruments. Consequently, the Atlantic Forest project made available the complete study and all the maps on the MMA's website.



Reflections and lessons learned about the study

The adequate definition of the methods for preparing the study was complex and time-consuming. Due to the complexity and time necessary for developing such a study, it was important to register all the decisions about its methodology to avoid conflicts and clarify the responsibilities of everyone involved.

Currently, the results of the study are available for use at national level and in the regions where the project was implemented. However, their use to base the project actions was less comprehensive than initially anticipated, because the final results of the analyses were only finished at the end of the project and were presented in a technical language that did not permit access by a broad public. This problem is now being resolved through the production of a set of publications that seek to communicate the results to a broader public.

When developing a complex and innovative study, a strategy should be planned from the beginning for disseminating the data and results obtained, including the definition of its format, the platforms that will be used for divulgation and the actors involved. In this way, it is possible to anticipate the amount of time and effort required for dissemination, and not just only to carry out the study.

Table 1. Main results of the Atlantic Forest project related to ecosystem-based adaptation: development of concepts and capacities.

RESULTS

- ☑ Four courses for training of trainers carried out, training 69 trainers, of whom 25 have already replicated their knowledge.
- ☑ Eleven methodological courses on EbA carried out in seven cities, including all of the project regions, training 267 participants.
- ☑ Awareness raising on EbA in technical, academic and scientific events, such as the Seminar on Protected Areas and Social Inclusion; the Brazilian Congress on Reduction of Disaster Risks; and the Atlantic Forest Week.
- ☑ On-line course on preparing and implementing PMMA, with over 600 participants.
- ☑ Course on Distance Education on EbA under development.
- ☑ Study on impacts of climate change in the Atlantic Forest, with 748 maps, of which 260 are of climatic variables, 104 are of climatic extremes and 384 are of biophysical impacts of climate change on the Atlantic Forest.

3.2. Climate change and EbA in instruments for land use planning

Instruments of land use planning, such as City Master Plans, Municipal Plans for Conservation and Restoration of the Atlantic Forest, Management Plans of Conservation Units and Watershed Plans, seek to organize the land settlement and land use, as well as orienting the management of their corresponding areas. They should consider multiple factors that are part of or have influence on these areas to define the actions required to reach their planning objectives and to attain sound territorial management. Climate change is a critical factor that should be considered in the preparation, revision and implementation of these plans, since it generates impacts on the territory and influences its planning goals and the populations within them. In this sense, EbA measures should be considered to address these impacts.

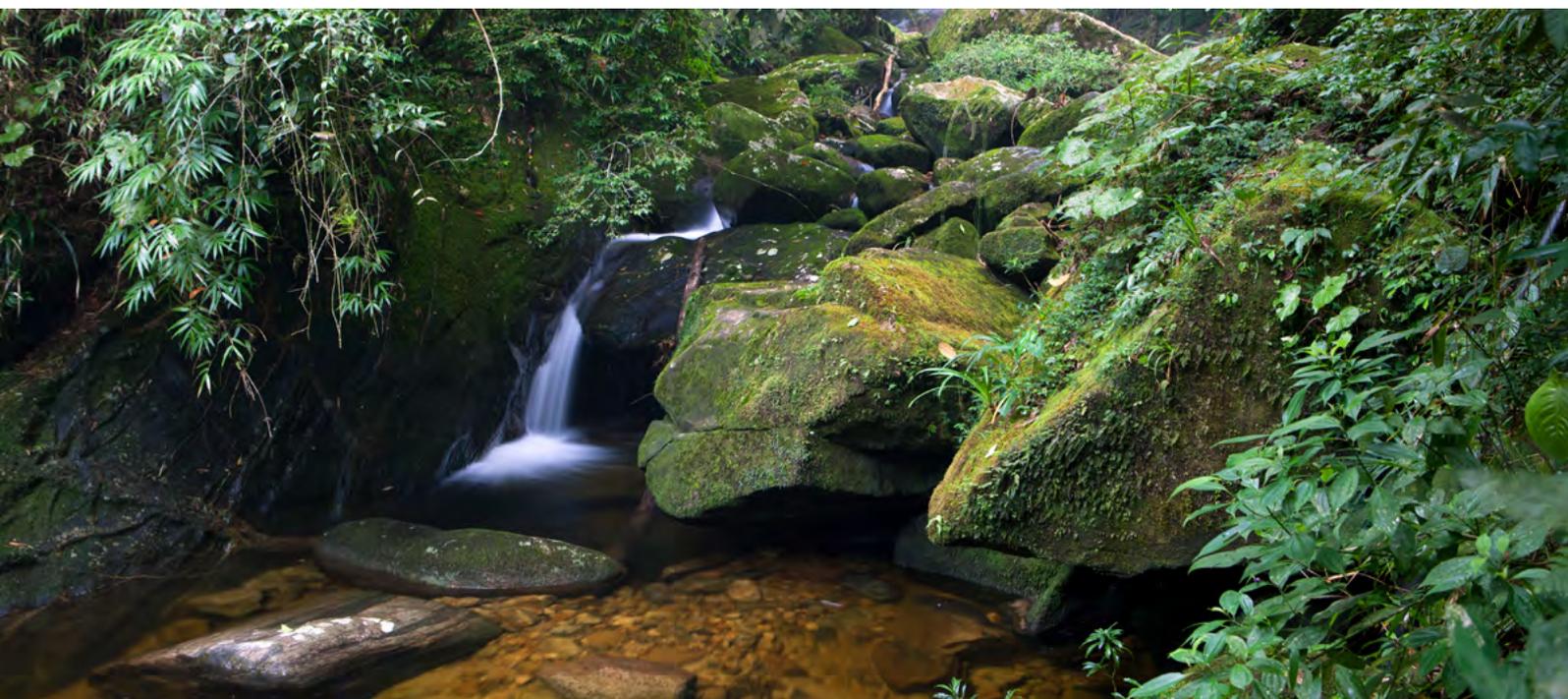
Among the most significant actions of the Atlantic Forest project is the support for the preparation and implementation of Municipal Plans for the Conservation and Restoration of the Atlantic Forest (PMMA)³, an important instrument for conserving and restoring the biome envisioned in Law no. 11,428/2006, the Atlantic Forest Law. This support was carried out in continuity with earlier projects, such as the Atlantic Forest component of the Demonstration Projects Sub-Program (PDA) and the Protection of the Atlantic Forest project II (MMA/GIZ). In this way, the project supported: the development of content on the insertion of EbA in the on-line course about PMMA; the revision of the guidelines for preparing and implementing plans (described in Case Study V); and the insertion of climate change and EbA and the regional integration of several PMMA from the South of Bahia and the Extreme South of Bahia (described in Case Study VI).

Also in a municipal context, the Atlantic Forest project sought institutional articulation to support the insertion of climate change and EbA into City Master Plans, obtaining success with the Municipal Secretariat of Planning, Habitation and Urbanization in Duque de Caxias, Rio de Janeiro. In addition to these themes, the municipal government carried out a mapping of ecosystem services, through a Regional-Local TEEB project, to provide a basis for revising its Law for Land Use and Occupation and its City Master Plan, as described in Case Study IV.

The consideration of climate change and the integration of EbA in instruments of land use planning are strictly aligned with the project objectives, which include building capacities of local and national actors to implement priority actions for mitigation of and adaptation to climate change based on ecosystems. During the implementation of this component, the project worked together with a wide range of actors, ranging from municipal governments responsible for the plans, to civil society involved with their preparation, revision and implementation, offering courses on climate change and EbA, and supporting the consideration of climate change and the insertion of EbA measures during the preparation or revision of different land use planning instruments, through consultancies, workshops, production and dissemination of support content and general technical advice.

The main project results, reflections and lessons learned in relation to PMMA and other land use planning instruments are described below.

³ Available at: <http://pmma.etc.br>



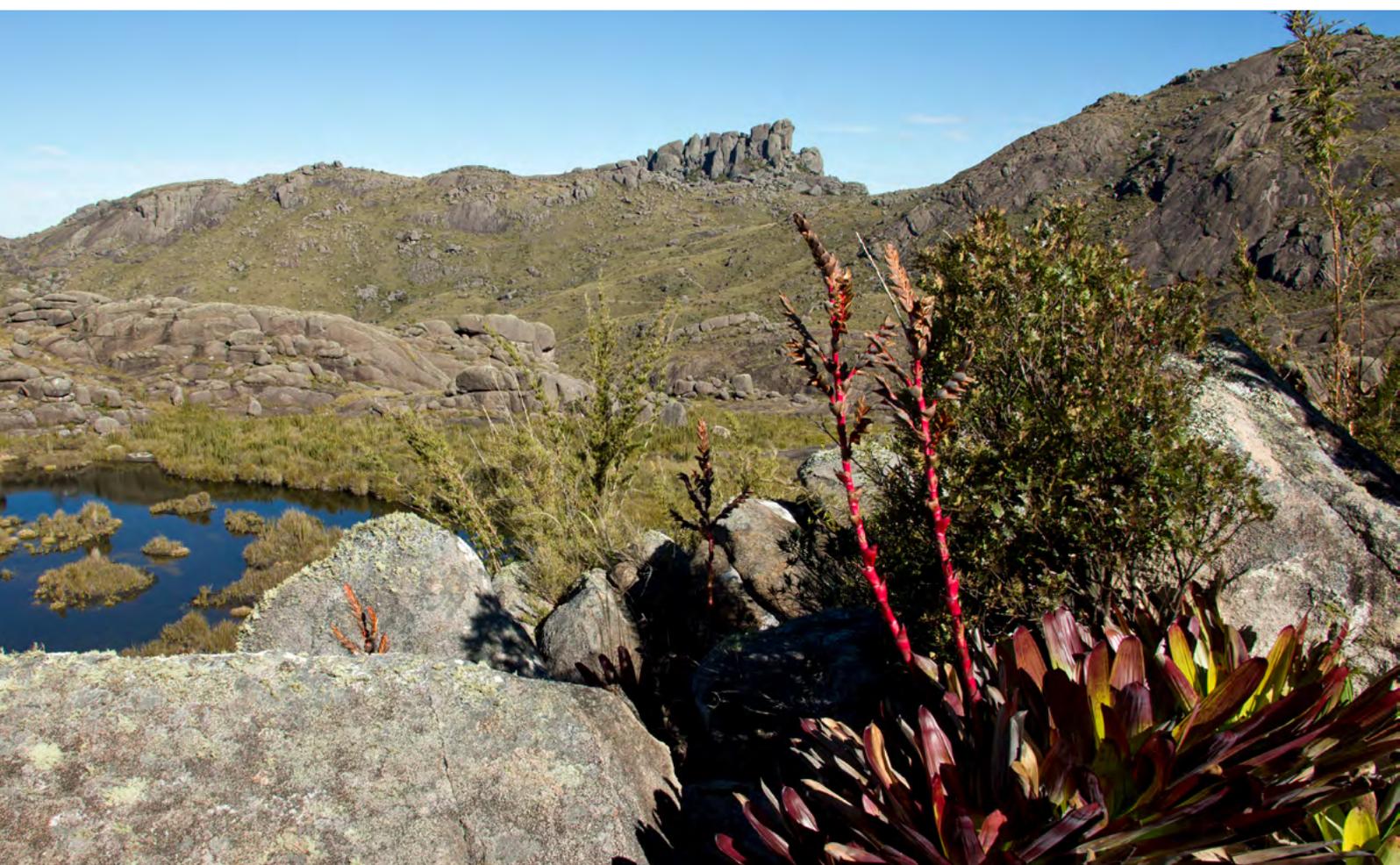
3.2.1. Municipal Plans for Conservation and Restoration of the Atlantic Forest (PMMA)

At the outset of the Atlantic Forest project, several municipalities and institutions worked on the preparation and implementation of PMMAs. Even though these corresponded to less than 1% of the existing municipalities in the Atlantic Forest, these experiences already offered interesting results, reflections and lessons learned to carry out the first revision of the guidelines for preparing and implementing PMMAs published by the Ministry of Environment in 2013.

A broad and participatory process for revising the guidelines involved the main actors who supported the preparation and implementation of PMMAs in the Atlantic Forest, and also sought to insert guidance on how to consider climate change and EbA measures in planning. Consultants were contracted to carry out diagnoses of the PMMAs in preparation, prepared or under implementation, and further support was provided for presentations, workshops, and on-line consultations, culminating in a new set of guidelines (described in Case Study V).

To provide support for the institutions involved in the PMMAs, mainly in the insertion of climate change and EbA, the project provided technical guidance to integrate these themes in the on-line course on preparation and implementation of PMMAs. Through such support, the project sought to aggregate content to capacity building on EbA in planning, together with specific training on climate change and EbA, referred to in the preceding chapter and in Case Study I. By the same token, the project offered two courses on climate change and EbA, especially for the Northeast region, and several participants expressed their interest in developing PMMA in municipalities inserted in the Atlantic Forest.

Specifically, in the South and Extreme South of Bahia, encompassing the MAPES region, the project supported the integration of climate change and EbA within an initiative of the Environmentalist Group of Bahia (Gamba) and its partners, who prepared nine PMMAs in the municipalities contiguous with Porto Seguro (as shown in Case Study VI). The PMMA of Porto



Seguro was the first that considered EbA measures in response to climate change, and its methodology was used with adaptations in the other PMMAs. In conjunction with entities involved in this process, such as Gamba Conservation International and S.O.S. Atlantic Forest, the project also provided advice to a large-scale effort of regional integration of nine PMMAs in addition to the plan of Porto Seguro, once again considering climate change and EbA as part of planned actions of integration.

Finally, the project provide advice to the governments of Parana and Rio de Janeiro states in the processes of contracting consultants to prepare the PMMAs of the municipalities along the coast of Parana within the Lagamar Mosaic and the municipalities located in the Mosaico Central Fluminense region, respectively. These hirings were part of the support provided by the project's Financial Cooperation including the integration of climate change and EbA in these instruments. In the case of PMMAs in Lagamar, the project also supported a public consultation of the perceptions of local residents about the environmental situation of their municipality, including their perceptions about climate change and how it affects people's lives in Lagamar, in all the covered municipalities.

In general, the project aimed to establish a support structure for PMMAs ranging from capacity building, evaluation of experiences and lessons learned, improvement of methodologies and strengthening of institutional links, and culminates in the preparation and regional integration of PMMAs, always guided by the insertion of climate change and EbA in these processes.

Reflections and lessons learned about PMMA

Among the actions of integration of climate change and EbA in land use planning instruments, the PMMAs were those in which the project made a greater effort and, therefore, achieved the most robust results, adding an important input to the work carried out by partner institutions, as in the course on PMMAs and the preparation of these plans in the South and Extreme South of Bahia.

Due to the support given to PMMAs by the Protection of the Atlantic Forest II project, the project had planned the revision of the guidelines for preparing and implementing the PMMA from the start. During the project implementation, this revision evolved into a broader and more participatory process, including the diagnosis, evaluation and reflection about the existing experiences in preparing and implementing PMMAs, which provided essential inputs for the revision of the guidelines.

The project provided advice during two years to the initiative to integrate ten PMMAs in the South and Extreme South of Bahia. The alignment of expectations and needs among all those involved required a level of work and time that was greater than foreseen by the project. At the same time, the consideration of climate change and EbA in the PMMAs occurred simultaneously with the efforts to conclude the plans and to carry out regional integration, which made the process even more complex.

The lack of synchrony between the implementation of the project's technical and financial cooperation modules delayed the preparation of further 17 PMMAs proposed for the regions prioritized by the Project, seven in Parana and ten in Rio de Janeiro. The integration of climate change and EbA in these plans and their regional integration are methodological conquests of the project.

The efforts necessary to assure the insertion of climate change and EbA in the PMMAs made clear the necessity of structuring actions such as capacity building, reflection about ongoing experiences and articulation of partnerships.

3.2.2. Management Plans of Conservation Units

Another instrument of territorial planning essential to the objectives of the Atlantic Forest project are the Management Plans of Conservation Units - UC. As a result, UC managers and technicians, as well as federal, state and municipal environmental agencies, participated in the training on climate change and EbA undertaken by the project.

During one of the EbA-courses, the team of the Cananéia-Iguape-Peruíbe Area of Environmental Protection (APACIP) reflected about the insertion of climate change and EbA in their management plan, designing the required steps. Based on these reflections, the team requested project support, taking advantage of the opportunity provided by the initiation of the plan review, as described in Case Study III. As a result, the Management Plan of APACIP was the first instrument of this type to consider climate change in its diagnosis and EbA measures in its planning, emphasized in the programs and in the rules on zoning of the APA.

In addition to this plan, the project supported the articulation needed to carry out a training workshop on adaptive management of risk and vulnerability on conservation sites (MARISCO), developed by the University of Eberswalde, in Germany, and with professors and graduate students, as well as governments and NGOs, as target audiences. The conservation site used as a case study in the workshop was the Veracel Private Reserve of Natural Heritage (RPPN), in MAPES. This training led to the articulation between the course in Geography at the Federal University of Parana (UFPR) and ICMBio active in Lagamar / Paraná. As a result, the project provided technical advice to the institutions, which resulted in the initiation of the Management Plan of the Guaraqueçaba APA. The graduate program in Geography at UFPR has used MARISCO in its classes and extension activities, opening the prospect of institutionalizing the methodology in Brazil.

Reflections and lessons learned about Management Plans

The Atlantic Forest project, during its conception, anticipated assistance to the Management Plans of PAs with the same emphasis as that conferred to PMMAs. This did not take place due to two factors. First, there were no PA Management Plans under preparation or revision in the priority regions during the period of the project, and consequently the project did not have opportunities for partnering with institutions that had been working in these themes, as occurred in the case of the PMMAs in the South and Extreme South of Bahia. Second, there was a delay in the implementation of the project's financial cooperation module, that planned financing for the preparation or revision of 10 Management Plans for UCs in the project's focal geographic regions.

The insertion of climate change and EbA in the Management Plan of the APA CIP is the project's main case study related to PA (see Case Study III). The strong and weak points of this experience provide a basis for preparing and revising other PA Management Plans foreseen by the project's financial cooperation module.

The process that made possible the consideration of climate change and EbA in the APA CIP Management Plan was developed by the project in collaboration with the PA/ICMBio team, as part of a consultancy contracted to provide support for the preparation of the management plan and the trainers in EbA trained by the project, using the method discussed in the capacity building strategy. The documentation of this process in the form of recommendations could be used by ICMBio and other institution in charge of managing conservation units.

One of the notable aspects of the APACIP process was the need to develop communication formats that were appropriate for engaging local actors, which can be undermined by approaches that are excessively theoretical or strictly scientific.

In relation to MARISCO, the adaption and application of the first stages of the methodology in the APA Guaraqueçaba Management Plan represent a methodological initiative similar to the action of EbA promoted by the project, but in this case focused on the inter-relation between risks and climate change.

The preparation of territorial planning instruments routinely involves extensive periods and different stages, over which the project has no control. This created difficulties for planning project activities and investments, and frequently led to interruptions and discontinuities.

Table 2. Main results of the Atlantic Forest project related to climate change and EbA in instruments of land use planning.

RESULTADOS	
<input checked="" type="checkbox"/>	Guidelines for preparing and implementing PMMAs refined, based on existing experiences and considering climate change and EbA.
<input checked="" type="checkbox"/>	On-line course on preparing and implementing PMMAs considers content on climate change and EbA.
<input checked="" type="checkbox"/>	9 PMMAs in the South and Extreme South of Bahia integrate climate change and EbA and emphasize EbA measures in their action plans.
<input checked="" type="checkbox"/>	10 PMMAs in the South and Extreme South of Bahia are regionally integrated, with EbA measures jointly planned and a monitoring commission established.
<input checked="" type="checkbox"/>	Management Plan of the APA CIP considers climate change and plans EbA measures.
<input checked="" type="checkbox"/>	Management Plan of the Guaraqueçaba APA considers risks and their relationship with climate change.
<input checked="" type="checkbox"/>	Technical recommendations prepared for inserting climate change and EbA in Management Plans of PA.
<input checked="" type="checkbox"/>	UFPR's Graduate program in Geography with MARISCO integrated in classes and extension initiatives.
<input checked="" type="checkbox"/>	Studies analysing vulnerability and ecosystems services provide a technical basis for considering climate change and EbA in the Law for Land Use and Occupation and in the City Master Plan of Duque de Caxias.

3.3. Restoration of Native Vegetation

Restoring native vegetation strengthens the ecosystem services of provision and regulation, such as furnishing of water and thermal regulation, and reduces the risks of flooding and landslides. In this way, restoration can also be part of a strategy to help people adapt to the adverse effects of climate change, being considered an Ecosystem-based Adaptation (EbA) measure.

Throughout the project's duration, the theme of EbA has been strengthened in the national context, with the sanction of the Law for the Protection of Native Vegetation (Law no. 12,651/2012), also known as the "New Forest Code," and the implementation of this law's instruments, such as the Rural Environmental Registry (CAR) and the state-level Environmental Compliance Programs (PRAs).

As a result, opportunities emerged for the project to carry out activities that helped in the implementation of a national strategy for restoring native vegetation on a large scale in Brazil, influencing the country to assume voluntary commitments related to international initiatives of landscape restoration and adaptation to climate change. Among these, we emphasize the

Nationally Determined Contributions (NDC) as part of the Paris Agreement of the United Nations Convention on Climate Change (UNFCCC), which aims to restore and reforest 12 million hectares of forests by 2030, as well as the commitment made as part of the Bonn Challenge⁴ and the 20x20 Initiative⁵.

The main results, reflections and lessons learned related to restoration of native vegetation are described below.

3.3.1. National Plan for Restoration of Native Vegetation – Planaveg

The Atlantic Forest project supported the preparation of the preliminary version of the National Plan for the Restoration of Native Vegetation (Planaveg). The project's contribution to preparing Planaveg is described in detail in Case Study VIII of this publication.

Due to the participation of research institutes, civil society and government provided by the interinstitutional working group supported by the project, it was possible to define a well-grounded preliminary plan, which led to the National Policy for Restoration of Native Vegetation (Proveg), established by Decree no. 8,972/2017.

The project also supported studies and consultancies that will subsidize the implementation of Planaveg. Among these, the following stand out:

Preparation of scenarios on the potential of natural regeneration of native vegetation in Brazil

Based on remote sensing data and spatial analyses of landscape structure and characteristics in each biome, interpreted by a diverse group of specialists, the potential for natural regeneration of native vegetation in Brazil was estimated, differentiated into categories of high, medium and low potential (see Case Study X).

The results of this study can support the planning and implementation of federal and state public policies aimed at restoring native vegetation at a large scale, minimizing costs and maximizing efforts and the chances for successful restoration actions.

4 The Bonn Challenge is a global effort to restore 150 million hectares of deforested and degraded lands by 2020 and another 200 million hectares by 2030. It is a platform that does not generate legally binding commitments, yet it does aim to highlight leadership and proactivity in restoring deforested and degraded lands. More information: www.bonnchallenge.org

5 The 20x20 Initiative is an effort led by the countries of Latin America and the Caribbean (LAC) to promote the restoration of 20 million hectares by 2020. This initiative aims to support the global restoration efforts of the Bonn Challenge. More information: www.wri.org/our-work/project/initiative-20x20

Analysis of the costs of restoring native vegetation in Brazil

This study presents surveys of costs for restoring native vegetation in the different Brazilian biomes for the purpose of capturing the variability of costs associated with regional environmental characteristics and the different restoration techniques employed. The complete report on this study is available on the Ministry of Environment's website.

The results of this study can also support discussions about the forms of periodic monitoring of the costs for restoring native vegetation in Brazil and about proposals to reduce the costs of the main restoration techniques in each biome.

In addition, the project's Financial Cooperation Module foresees the elaboration of a strategy to increase financing for restoration of native vegetation, and the implementation of an economic analysis of the productive chain of restoration in the three regions in which the project operates.

Analysis of the orbital monitoring of vegetation restoration in the Atlantic Forest

This consultancy carried out a survey of the state of the art of existing methods for orbital monitoring of native vegetation restoration to identify the main obstacles and opportunities for constructing a system for orbital monitoring of native vegetation restoration in Brazil, linked to the Program of Environmental Monitoring of Brazilian Biomes (PMABB) (see Case Study IX).

The construction of this system will permit monitoring of areas under restoration, accounting of these areas to fulfil national restoration targets, while also gathering data that will enable estimates of how much these areas contribute to mitigating of emissions of greenhouse gases.

Delimitation of source areas for establishing seed lots obtained from native forest species that are of environmental interest for Brazilian biomes

This consultancy aimed to support the regulation of Normative Instruction (IN) of the Ministry of Agriculture that regulates the production, commercialization and use of forest seeds and seedlings. The objective was to delimit sub-regions within the six Brazilian biomes that would serve as a reference for the separation of seed lots from nurseries, with a view of maintaining, within each lot, the genetic identity of commercialized species that could be used for planting in native vegetation restoration projects. The complete report on this study is available on the MMA's website.

Although this proposal was not included in the recent update of the IN MAPA no. 17/ 2017, it is hoped that the study results can support future refinements of legislation related to the production of seeds and seedlings destined for native vegetation restoration projects.

Support of Ibama's Program for Conversion of Environmental Fines

The Program for Conversion of Environmental Fines was launched by Decree no. 9,179, of October 23, 2017, and permits the conversion of environmental fines in services to preserve, improve and restore environmental quality. In this program, the conversion of the fine can be implemented directly or indirectly by the offender. In the direct modality, the offender carries out environmental projects in areas distinct from the area in which the infraction occurred. In the indirect modality, the fine should be paid with a discount of up to 60%, and the funds collected will be used to finance environmental projects. In neither case the offender will be relieved to repair the damaged area.

The Atlantic Forest project supported a consultancy to prepare a map of the processes of the Program for Conversion of Environmental Fines, as well as to verify needed adjustments to Ibama's systems for the management of the projects presented to the program.

It is hoped that this new program significantly increases the availability of financial resources for implementing environmental projects in the country. It is noteworthy that the amount of unpaid fines is approximately R\$ 4.9 billion that could be potentially converted, and that, between 2011 and 2014, R\$ 424.2 million of fines were paid.

The results of the projects to be supported by this program will contribute to fulfilling Brazil's international commitments for conservation and restoration, also assuring the provision of important ecosystem services.

Publication of the Technical Guide to Restoration of Vegetation in Rural Properties of Bahia



The project supported the conclusion of this technical guide, produced by the State Secretariat of Environment of Bahia (SEMA/BA) in partnership with TNC Brazil. The guide establishes technical parameters that orient the restoration of Areas under Permanent Preservation (APPs) and Legal Reserves (RLs) on rural properties and homesteads, seeking to enable these properties to meet the requirements of the Environmental Compliance Program (PRA) of Bahia state. The guide is available on the websites of SEMA/BA and MMA.

Furthermore, the project's Financial Cooperation Module also foresees supporting the registration, analysis and validation of the Rural Environmental Registry (CAR) involving small rural properties located in the municipalities of the three focal regions of the project.

Reflections and lessons learned about Planaveg

The contribution of the Atlantic Forest project, in collaboration with several other important actors, to the design of a public policy for restoring native vegetation, was considered strategic by various partners. The prospect of addressing this theme at scale and the project's identification of key actors for the policy's implementation, as well as the basis for financial modelling, were relevant.

The importance of restoring natural vegetation as a theme that aggregates both adaptation and mitigation is generally recognized. However, integrating this vision into the project's actions involving this theme was not strongly emphasized. In part, this is due to weaknesses in the project's communication, which could have contributed more effectively to the integration of the components and the development of a shared vision of the theme.

Nevertheless, actions planned under Planaveg were inserted into the chapter on biodiversity in the National Plan for Adaptation to Climate Change (PNA) and contributed to the establishment of Brazil's voluntary commitments within the Paris Agreement (Nationally Determined Contributions – NDC) of the United Nations Framework Convention on Climate Change (UNFCCC).

Some recent regulations strengthen the institutionalization and continuity of actions supported by the project: Decree no. 8,972/2017, which launched Proveg, also established the National Commission for Restoration of Native Vegetation (Conaveg), the main governing body of Planaveg. The proposal is that all ministries involved with Conaveg identify, undertake and coordinate programs, projects and actions that contribute to the policy's objectives and that they commit to implementation within the defined timeframe. Planaveg should be revised every 4 years.

3.3.2. Strengthening the Pact for Restoring the Atlantic Forest – Pacto

In 2009, the Pact for Restoring the Atlantic Forest (Pacto) was launched, comprised of a network of over 220 institutions, which include national and international civil society organizations, governmental agencies, private sector companies and research institutes. The Pact is a reference for the articulation and integration of diverse social actors and for the strengthening of actions involving ecological restoration in the Atlantic Forest.

For these reasons, the Pact was selected to be a strategic partner of the Project in the implementation of activities related to methodological development and the implementation of forest restoration and recovery of degraded areas. In addition, the partnership with the Pact contributed to the preparation and implementation of public policies related to restoration, supported by the project, and to the dissemination and increasing of scale of experiences and initiatives developed.

Pacto has developed a recognized methodological material supported by over 30 years of scientific research, which documents for its affiliates each of the steps necessary for implementation of an ecological restoration project with the premises of incorporating high

diversity reforestation models, different techniques for inducing natural regeneration and landscape planning.

The project's main results related to strengthening of Pacto are described below:

Actors trained in the themes of ecological restoration, governance at the landscape scale and gender equity

To disseminate knowledge to relevant actors about Pacto's tools, the project supported six training courses between 2015 and 2017, carried out by the Centre for Environmental Research of the Northeast (CEPAN), Pacto's current regional coordinator. These courses covered protocols for monitoring restoration projects, the new version of an on-line database on restoration projects, Pacto's new governance structure distributed in Regional Units throughout the biome, and issues of gender equity in restoration activities (see Case Study VII).

In these courses carried out over two years, a total of 112 people was trained, including technicians from municipal and state environmental agencies and from the institutions that comprise Pacto's Regional Units, with 160 hours of courses in five states within the Atlantic Forest. With these numbers, the project was able to achieve its objectives of capacity building which will be sustainable after the project's conclusion. It is expected that the participants will have a multiplying effect in their regions, especially Pacto's Regional Units.

In addition, the project's Financial Cooperation Module still foresees supporting the implementation of reference centres for forest restoration in the Atlantic Forest, linked to Pacto's Regional Units, which will be responsible for developing research activities, capacity building and extension involving restoration of native vegetation and production and supply of seeds and seedlings of Atlantic Forest species.

Insertion of new restoration projects in Pacto's database

The Atlantic Forest project supported a consultancy that contributed to the development and structuring of the new database on Pacto's restoration projects, preparing a mobilization strategy of Pacto's member institutions for registering georeferenced data on areas under restoration.

At the end of this consultancy, over 60 thousand hectares under restoration had been registered in the database, of which over 40 thousand hectares are in states prioritized for project activities. The complete report on this consultancy is available on the MMA's website.

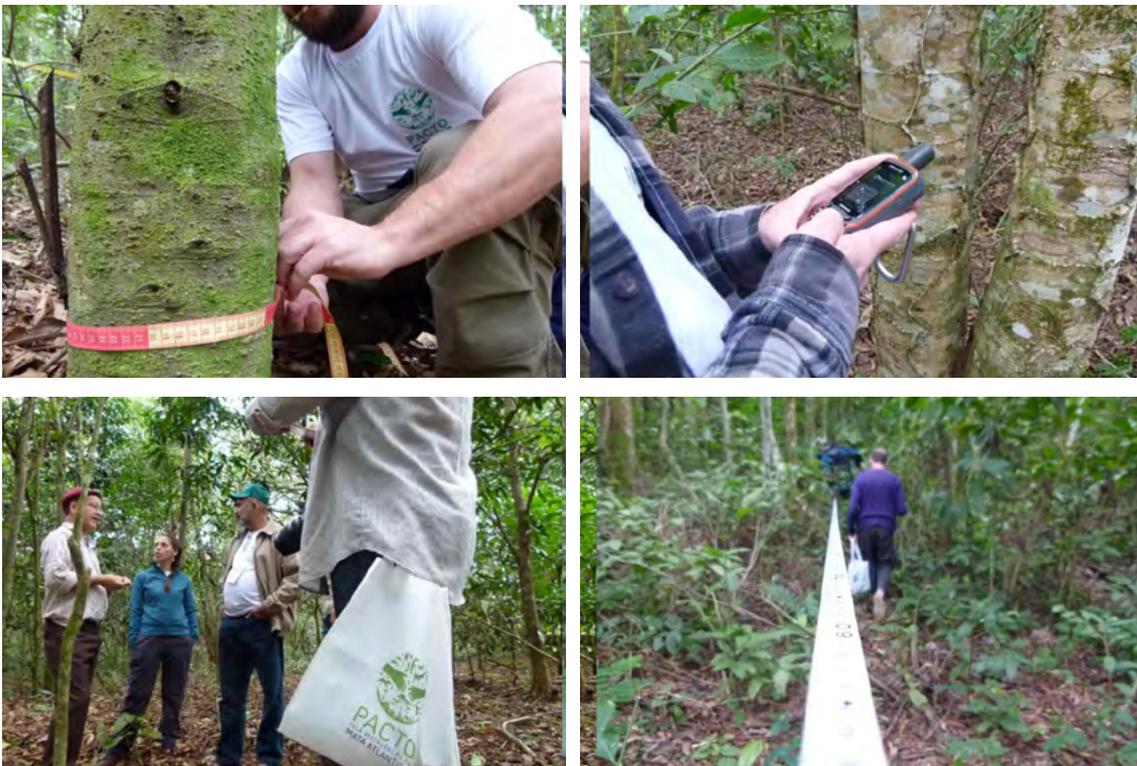
The structuring of this database is essential for monitoring the restoration targets established by Pacto, which contribute to fulfilling the national targets for restoration established under Planaveg and the Bonn Challenge.

Preparation of a Priority Index of Forest Restoration for Water Safety in metropolitan regions of the Atlantic Forest

Based on a demand of Pacto, the project prepared a study that identified priority watersheds for forest restoration, with a view to securing water supplies of metropolitan regions in the Atlantic Forest (see Case Study XI).

Based on quantitative data on the water balance of these watersheds produced by the National Water Agency (ANA) and on data on forest remnants and erosion susceptibility, the priority watersheds for forest restoration were identified, with view to conserving the ecosystem services of water provision for these regions. The complete report on this study is available on the MMA's website.

The results can guide the optimization of technical and financial resources allocated to public and private programs, projects and actions for conserving and restoring native vegetation in the Atlantic Forest, with a view to providing water security of the metropolitan regions analysed.



Reflections and lessons learned about strengthening of Pacto

The alliances established during implementation of the Atlantic Forest project are expected to enable the continuity of activities after the project's conclusion. The Pact for the Restoration of the Atlantic Forest – Pacto is an internationally recognized initiative that should provide continuity, especially due to its new governance structure developed with support of the project, with its Regional Units that have expanded the scope of Pacto's activities beyond the Rio-Sao Paulo axis.

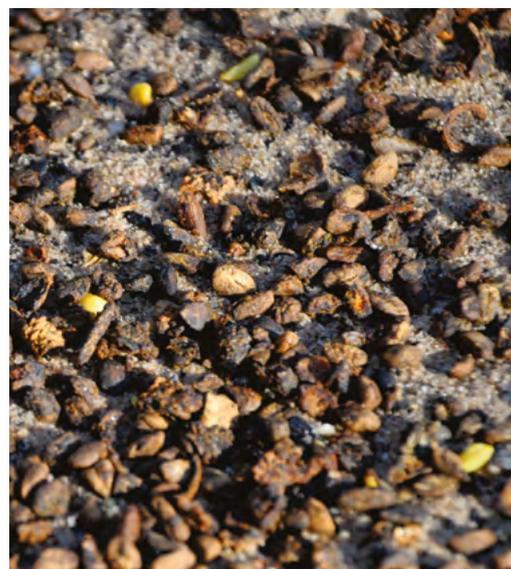
The study developed together with Pacto to identify priorities for forest restoration for water security, reflects a direct connection between the themes of restoring native vegetation and EbA. Initially, this study intended to identify priority areas for establishing Payments for Environmental Services (PES). However, during its development and based on data and results generated, a utilization with greater potential was identified, which could be associated with other mechanisms to assure water provision for metropolitan regions in addition to PES arrangements. The increasing crisis of supplying water in large metropolitan regions of Brazil, beginning in 2014, was a fundamental factor for the greater scope and importance of this study.

Through courses and consultancies carried out in collaboration with Pacto, the project contributed to the advances in monitoring forest restoration in the Atlantic Forest, both in qualitative and quantitative terms. In the original project design, monitoring of carbon stocks in areas under restoration was also included. The project succeeded to conclude a consultancy that defined an integrated methodology for monitoring of both - restoration and carbon, including the preparation of a sampling plan for carrying out field monitoring. However, the implementation of this methodology encountered various challenges in attracting and negotiating with partners, which undermined the field monitoring of carbon and the achievement of the Component 3 indicator of the Atlantic Forest project.



Table 3. Main results of the Atlantic Forest project related to the theme Restoration of Native Vegetation.

RESULTS	
National Plan for the Restoration of Native Vegetation – Planaveg	
<input checked="" type="checkbox"/>	Contribution to preparing the National Policy and Plan for Restoration of Native Vegetation
<input checked="" type="checkbox"/>	Elaboration of scenarios of the potential of natural regeneration of native vegetation in Brazilian biomes
<input checked="" type="checkbox"/>	Analysis of the costs of restoring native vegetation in Brazilian biomes
<input checked="" type="checkbox"/>	Analysis of orbital monitoring of vegetational restoration in the Atlantic Forest
<input checked="" type="checkbox"/>	Delimitation of source regions for establishing supplies of seeds of native forest species of environmental interest in Brazilian biomes
<input checked="" type="checkbox"/>	Mapping of processes within Ibama’s Program for Converting Environmental Fines (Decree no. 9,179/2017)
<input checked="" type="checkbox"/>	Publication of a Technical Guide for Restoring Vegetation on Rural Properties of Bahia
Strengthening of the Pact for the Restoration of the Atlantic Forest – Pacto	
<input checked="" type="checkbox"/>	Training in the themes of ecological restoration, landscape-scale governance and gender equity
<input checked="" type="checkbox"/>	Support for the insertion of new restoration projects in the database of the Pact for the Restoration of the Atlantic Forest
<input checked="" type="checkbox"/>	Elaboration of a Priority Index of Forest Restoration for Water Security in metropolitan regions of the Atlantic Forest





4. Project Impacts

Based on the above reflections, this chapter seeks to highlight the advances that the project achieved in relation to its impacts. Beyond the concrete results of its actions, impacts attempt to capture the processes of change that the project promoted.

It is important to emphasize that the project acted in several innovative and complex themes. In these cases, the effective impacts frequently can only be verified over the medium term, which sometimes might require several years after the project's conclusion.

Furthermore, the project addressed themes that are in different stages of maturity, with some still in the process of internalizing concepts, others in a phase of developing methodologies or designing public policies, and still others ready to generate changes in loco. As a result, the interpretation of what can be considered impact varies for each theme, just as the project's multiple scales of action also imply impacts at different scales.

Even with these caveats, the following text focuses on thematic areas in which were identified project contributions to the generation of immediate impacts or to evidence of future impacts.

4.1. Innovation, learning and capacity building

The focus of the project's innovative action was establishing an effective connection between biodiversity and climate change, with Ecosystem-based Adaptation (EbA) as its principal approach.

Considering that these themes were still relatively poorly known and internalized by the actors involved in conserving and restoring the Atlantic Forest, a broad-based approach to capacity building was deemed necessary. Implementing this capacity building left as an impact greater understanding, among the project's partner institutions, of the concepts and application formats for applying EbA and its insertion and approach in different institutional and implementation contexts.

The project actions related to institutionalization and development of formats that can give continuity to training (such as distance courses) will enable the efforts of capacity building to extend beyond the project and expand even further the access of different audiences to EbA.

The successive implementation of the stages of the Capacity Building Strategy also permitted the maturation of approaches, leading to diverse proposals for raising awareness, training of trainers and training formats oriented to practical work with EbA.

As a result, the main impact of the training strategy in EbA is the increased of adaptation capacities by training technical staff to consider EbA in planning processes. Awareness of the vulnerabilities and of the impacts already observed and projected of climate change for the Atlantic Forest, as well as the importance of maintaining environmental services and effectiveness of EbA measures, the trained actors are also capable of disseminating their knowledge and inserting the approach in their own areas of activity.

4.2. Generation of knowledge for decision making

The project's main investment in generating knowledge was associated with vulnerability to climate and the impacts of climate change at a regional level. The insertion of EbA in territorial planning instruments required the refinement of technical and scientific information related to this theme. The project supported the implementation of studies on climate change projections in the Atlantic Forest region and the expected biophysical impacts. This pioneering and innovative study required considerable effort in clarifying and aligning methodologies. Expanding the knowledge basis constitutes one of the important legacies of the project, available for use at both national and regional levels, guiding understanding of the impacts of climate change and enabling the definition of adaptation and mitigation measures through a refined set of scientific evidences.

Another project contribution to knowledge generation is related to the efforts to provide a technical basis for the National Plan for Restoration of Native Vegetation (Planaveg). Under the coordination of the Ministry of Environment, the project organized face-to-face meetings with a group of institutions and specialists in forest restoration, during which themes were identified that required further studies and consultancies. In this way, the project supported studies on restoration costs, the potential for natural regeneration and the identification of priority areas for forest restoration, which contributed to the preparation of public policies and regulations for the implementation of large-scale restoration in the country.

4.3. Basing of public policies

The prospect of inserting climate change and adaptation in priority public policies related to biodiversity, forests and climate in the Atlantic Forest was already established in the project's conceptual design and was an integral part of its results model.

The Atlantic Forest project obtained significant impacts in this thematic area, including initiatives that were already planned at the outset of implementation and that counted on continuing support, as well as public policies that were conceived during the project and that the project sought to seize the opportunity and expand and consolidate its impacts.

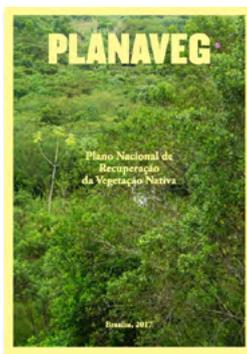
Beyond the relevant role played by the project in constructing Planaveg, already described in Case Study VII, it is also worth noting the project's support to the National Plan for Adaptation to Climate Change (NAP), instituted by MMA Regulation no.

150, of May 10, 2016, through knowledge and lessons incorporated into the plan's strategy for biodiversity and ecosystems. Furthermore, the capacity building in EbA carried out by the

project to key actors related to NAP promoted the integration of the approach in all sectors of NAP, especially the strategy for cities, becoming a major guide for the plan in utilizing ecosystem services as an alternative or complementary strategy for adaptation to climate change.

In addition, it is important to note the advisory role provided by the project in the preparation of the National Biodiversity Strategy and Action Plan (NBSAP), specifically the definition of indicators and sources of verification for the National Biodiversity Targets for 2020. This advisory role was provided in conjunction with the Regional-Local TEEB project and the Consolidation of SNUC/LifeWeb project. The first version of the NBSAP was submitted to the Convention on Biological Diversity (CBD) in mid-2017. The second version, now with the involvement of other sectors of the Federal Government and various institutions, was submitted in the beginning of 2018. The Brazilian NBSAP is accessible on the websites of both the MMA⁶ and CDB.

4.4. Gains in biodiversity conservation



The impacts of the Atlantic Forest project on the conservation of biodiversity in the biome are still to be reached through the future implementation of actions and activities proposed by the technical studies and public policies supported by the project.

The ground-breaking analysis of the biophysical impacts of climate change in the Atlantic Forest undertaken by the project (see Case Study II) has the potential to guide priority actions and areas for conserving species vulnerable to the future impacts of climate change in the region.

The landscape analysis carried out to integrate 10 PMMAs in the South and Extreme South of Bahia (see Case Study VI) has the potential to assist joint actions to be implemented by the involved municipalities, promoting gains in the conservation of local biodiversity.

The support of the project's Financial Cooperation will also promote direct activities involving biodiversity conservation and restoration with a focus on EbA, including the implementation of activities planned in the PMMAs and management plans of Conservation Units in the regions of project activity.

The project also strengthened the restoration of native vegetation as a main strategy for conserving biodiversity in the Atlantic Forest, with emphasis on directing actions to areas with high resiliency and potential for natural regeneration of the native vegetation.

⁶ Available at: www.mma.gov.br/epanb



5.1. Achieving indicators

The main mechanism for managing and monitoring the achievement of the objectives of the Atlantic Forest project were the indicators (targets) established during the preparation phase. The project has specific indicators for each of its components, distinguished according to the modules Technical Cooperation and Financial Cooperation. There is, in addition, a higher or project-level indicator that is common to both. The indicators referring to the Technical Cooperation module are:

Project-level indicator

Mitigation and adaptation measure with ecosystem focus were prepared for an area of, at least, 150.000 ha in the mosaics of protected areas.

Component 1 indicator

At least 20 instruments of land use planning (for conservation units and their buffer zones, mosaics, municipalities, states, federal level) incorporate vulnerability and ecosystem services in their analyses and implementation guidelines.

Component 2 indicator

The application of economic instruments increases the availability of financial resources for mitigation and adaptation measures with ecosystem focus for protecting and restoring the Atlantic Forest in the mosaics by at least 10%.

Component 3 indicator

In at least 15.000 ha, standardized and integrated methodologies are applied for monitoring forest restoration, as well as for monitoring biomass and carbon fixation and flows.

Component 4 indicator

At least five policies or programs of national scope involving climate change, biodiversity and restoration of degraded areas include specific objectives for the Atlantic Forest.



Figure 3 shows the achievement of indicators of the Technical Cooperation module of the Atlantic Forest project. At the conclusion of this module in March 2018, mitigation and adaptation measures with ecosystem focus had been prepared for 210,171.51 hectares in the focal regions of the project. For this indicator, areas were considered in which EbA measures had been planned as part of the different territorial planning instruments supported by the Atlantic Forest project, for example the PMMAs, and the areas under forest restoration that made use of Pacto's monitoring protocol and registered in its database.

As for the specific indicators, the Atlantic Forest project supported:

1. ten territorial planning instruments that considered the impacts of climate change and EbA measures, as well as one instrument under development;
2. the Program for Conversion of Environmental Fine, with potential to increase by 14.13% the financial resources available for conservation and restoration projects in the Atlantic Forest;
3. 43,131.53 hectares of areas under forest restoration monitored by the Pact's protocol in states covered by the project, yet not including monitoring of biomass or carbon fixation or flows; and
4. five national public policies that contribute to conserving the Atlantic Forest⁷.

⁷ National Plan for Adaptation to Climate Change; National Biodiversity Targets for 2020 and National Strategy and Action Plan for Biodiversity; Policy for Restoration of Native Vegetation and Plan for Restoration of Native Vegetation; Atlantic Forest Law and Municipal Plans for the Conservation and Restoration of the Atlantic Forest; Program for Environmental Monitoring of Brazilian Biomes.

Achievement of indicators by the Atlantic Forest project

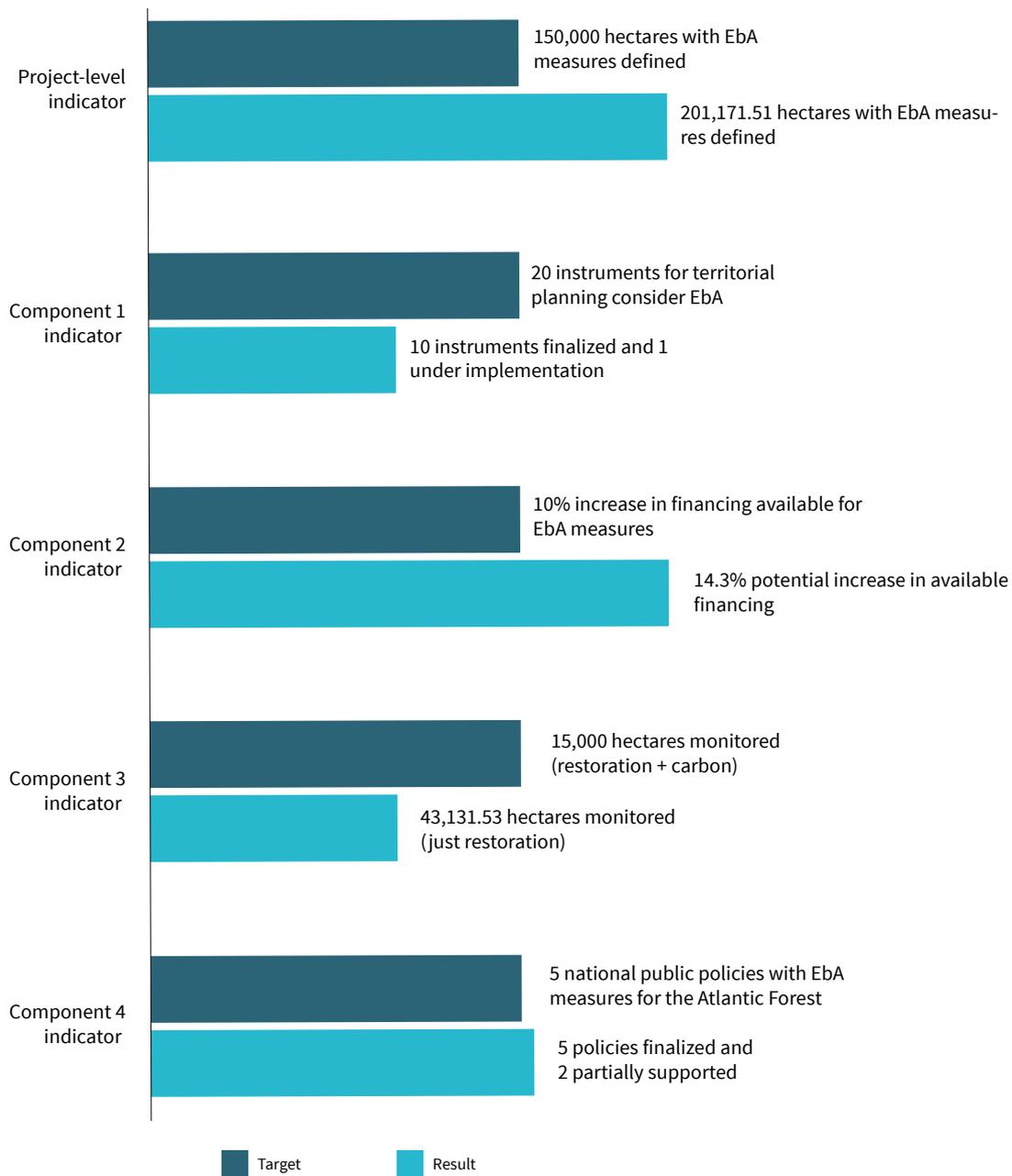


Figure 3. Achievement of indicators of the Technical Cooperation Module of the Atlantic Forest project.

Even with indicators that were distinct for the Technical Cooperation and Financial Cooperation modules, the project was conceived and implemented as a single entity. As a result, the actions of the Financial Cooperation impacted the achievement of indicators for the Technical Cooperation, and vice-versa. The delay of the Financial Cooperation in relation to the Technical Cooperation impacted the achievement of the latter's indicators, as is illustrated in Figure 3, especially for the Component 1 indicator.

In addition, the project did not control all the processes involved in achieving the indicators, mainly those that depended on political decisions, which therefore required considerable investment of time and effort in articulations with the partners directly involved. This was the case for the methodology for monitoring carbon in areas under restoration (required to achieve the component 3 indicator), for example. If the project had a longer timeframe, it might have been possible to achieve more satisfactory results for these targets.



Reflections and lessons learned about indicators

After the initial structuring phase, the Atlantic Forest project dedicated effort to specifying its indicators and effectively using them in planning and evaluation procedures. The option for technical rigor in project monitoring required considerable investment in interpreting indicators, developing baselines and monitoring methods, and also in the periodic measuring of indicators. This effort was a success factor in the project's implementation, because the indicators provided a basis for prioritizing actions. Ongoing monitoring and the use of indicators for directing project actions were seen as success factors for implementation.

The definition of dual responsibility for each indicator by the MMA and GIZ teams also contributed to monitoring and the efforts required to carry it out.

Yet the project indicators reflect only part of the objectives and actions foreseen in each component. If, on the one hand, this permitted that institutional changes and strategic redirections did not undermine the achieving of project targets, on the other hand, it impeded a more complete vision of the impacts achieved by the project. Consequently, the Atlantic Forest project generated several results that were not monitored by its indicators, but that were important in the context of its objectives. For this reason, it is recommended that these results be considered in project reporting, systematization and communication.

The systematic registration of memories about the project's implementation, through the results model and the monitoring of indicators, for example, helped deal with changes outside the project scope and reduced the stress of staff involved in implementation.

However, the lack of a clear perspective in relation to the beginning of the Financial Cooperation module, in addition to not coinciding with the beginning of the Technical Cooperation as planned, led to strategically erroneous decisions and undermined the achievement of indicators.

5.2. Partnerships and cooperation

Due to the broad thematic and territorial scope of the Atlantic Forest project, its implementation involved diverse partnerships and cooperation between the departments of various MMA secretariats, the Chico Mendes Institute for Conservation and Biodiversity (ICMbio), responsible for managing federal conservation units, state environmental agencies responsible for selected UC mosaics, local actors and civil society organizations that are involved in relevant project themes, especially the Pact for Restoration of the Atlantic Forest (Pacto) and the Atlantic Forest NGO Network (RMA).

Reflections and lessons learned about partnerships and cooperation

With its diverse lines of action and levels of intervention, the Atlantic Forest project involved a large number of actors. Several team members and partners praised the opportunities for exchange and knowledge about a variety of approaches and solutions adopted during the project's implementation. The fact that federal level actors could interact with the challenges of implementation and local realities was also viewed as positive.

The definition and implementation of project themes and agendas depended on relations between the partners, including concrete possibilities for joint action. Awareness building and the profiles of technicians and managers were also relevant to the success of the partnerships. Although the project has had several successful experiences, these conditions were not always consistently delivered throughout its execution, resulting in changes and reorientations in priorities and actions. Many of these alternations could not be anticipated during the design and planning phase, but it is recommended that implementation capacity be considered as a criterion for selecting partnerships.

In part, the diversity of themes addressed by the project was positive for the management of cooperation efforts, because it generated linkages between themes that are frequently treated in a fragmented manner by institutions. However, the monitoring and operationalization of partnerships were also challenging for the teams involved in project management.

The project focus at the interface between biodiversity and climate change presented both the opportunity and need for joint action of the sectors directly involved with each theme within the environmental agencies. In this context, an especially noteworthy partnership took place between the Secretariat of Biodiversity, responsible for the project's general coordination, and the Secretariat of Climate Change and Forests, both within the Ministry of Environment. The Secretariat of Climate Change and Forests viewed the project as an opportunity for implementing actions within its agenda and embarked, effectively, on implementing them jointly. In addition to thematic affinities, the allocation of human and time resources to the project were considered decisive factors for the smooth functioning of the partnership.

The partnerships with the states were extremely relevant for the project, enabling progress in various lines of action. However, some of these partnerships were affected by turnover among the agency heads and focal points for the project, and, consequently, by strategic redirections within the state environmental agencies.

The partnership with the Pact for the Restoration of the Atlantic Forest – Pacto in the scope of the project was evaluated as extremely positive. Pacto viewed the project as an opportunity to implement some of its priority initiatives, especially the support provided by the project for strategic planning and the execution of training courses for its members and for the recently established regional units. Collaborative actions related to forest restoration strengthened the organization and empowered its regional units, permitting the transition of Pacto's actions from a more strategic level to include more operational activities. The opportunity to



strengthen Pacto's actions in the Northeast region, in collaboration with several other actors, was also noteworthy, even as support beyond institutional strengthening has also been identified as necessary.

For the cooperation with the Atlantic Forest NGO network (RMA), support was foreseen for actions to be identified involving the RMA's strategic planning, which was assisted by the project at three moments. The RMA played a catalytic role in enabling three training events in EbA, which encouraged the involvement in project themes by environmental institutions operating in the Northeast on themes of the project. However, the expectation that RMA's regional capillarity could enable widespread dissemination and communication of the project's messages was undermined by the operational difficulties faced by RMA during the project's implementation.

5.3. Governance structure

The coordination and interaction between the project's institutions and partners required the design of a governance structure that permitted to direct joint efforts to achieve the project's objectives. To do this, the following governance structure, presented in Figure 4, was established.

Governance Structure

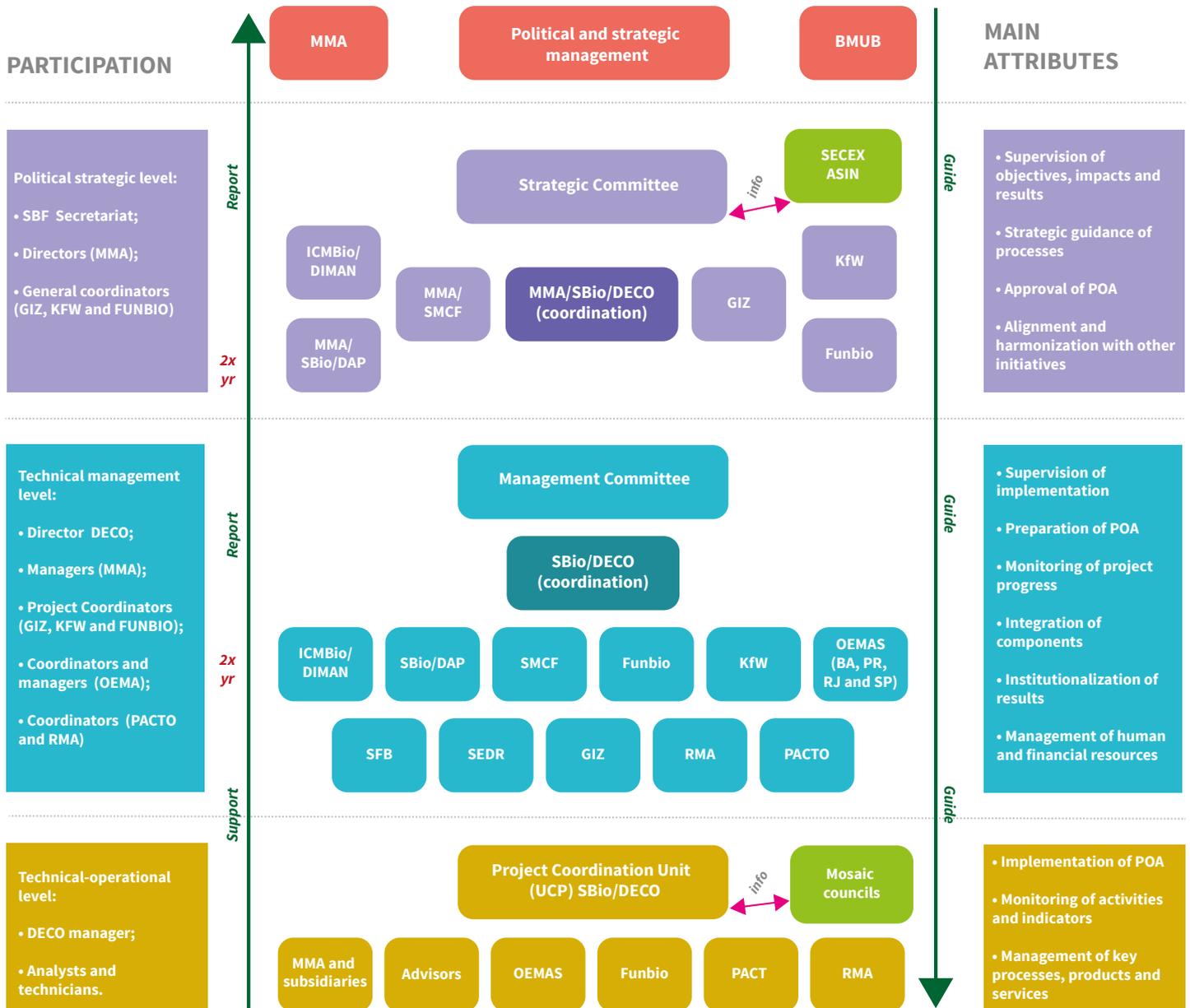


Figure 4. Governance structure of the Atlantic Forest project.

Below, the attributes of the governance bodies are detailed:

Strategic Committee

The strategic committee, the highest deliberating body of the project, had the function of guiding the actions of the Management Committee on passing on relevant information to those responsible for political and strategic directions. Among the key attributes of the Strategic Committee were: approving the Annual Operational Plan (POA); evaluating progress in POA implementation and defining possible adjustments that might be needed; aligning and harmonizing with other initiatives.

Management Committee

The Management Committee was the body supporting project implementation, bringing together all the managing bodies of institutions involved in carrying out the planned actions. This committee had the function of guiding the actions of implementing bodies and providing the Strategic Committee with the information necessary to carry out its functions.

Among the most important functions of the Management Committee were: defining the Annual Operation Plan (POA); monitoring progress in the POA's implementation and defining necessary adjustments; encouraging the allocation of a minimum team (focal points) of the partner institutions to support the project's implementation and establishing permanent dialogue with the Project Coordination Unit (UCP).

Project Coordination Unit

The Project Coordination Unit (UCP), the project's executive coordinating body, was composed of the technical and administrative team of the Department of Ecosystem Conservation (DECO) within the Secretariat of Biodiversity (SBio) of the Ministry of Environment and counted on the technical and administrative support of the GIZ team. Among the most important attributes of the Project Coordination Unit (UCP) were: coordinating the implementation and supervising the technical and financial performance of the project components; coordinating the process of preparing and implementing the Annual Operational Plans (POAs); preparing, in collaboration with the focal points of the member bodies of the Management Committee, terms of reference as basis for contracting consultancies, acquiring goods and contracting services for the purpose of carrying out the activities planned in the POAs.

Reflections and lessons learned about governance structure

The search for a governance arrangement that assured the participation of the partners without creating structures and procedures that overloaded the operational capacities of the managers and implementers presented a challenge for the project, given its technical and regional complexity.

The structure initially proposed was comprised of three governance levels, one with a political and strategic nature, the second involved with directing the project implementation and the third with an operational focus. However, this design proved to be excessively complex and was substituted by a more functional structure, with two managing bodies (Strategic Committee and Management Committee).

The Management Committee was the project's most active governing body, meeting regularly to plan and monitor implementation. Several partners valued the meetings as opportunities for sharing knowledge and emphasized the quality of the planning process. In contrast the Strategic Committee met only twice during the project, which was perceived as insufficient.

The participation of actors in the governance bodies of the project was subject to several processes of negotiation. One conclusion was that it is advisable to require clear counterpart commitments for participation, for example, making available human resources for implementing project actions. The emphasis on cooperation processes, including representation in governing bodies, can contribute to encouraging participation.

Some actors stressed the importance of anticipating specific strategies for building awareness among managers and policy makers to assure the visibility and continued support of project leaders.

A specific challenge was related to the expectations of regional and local actors regarding participation in management and access to project resources in a process still characterized by ongoing conceptual and methodological maturation. The initial opening to diverse demands (for example, through its regional operational plans) was gradually aligned to the real possibilities of the project, especially in relation to Financial Cooperation.

The definition of environmental agencies of the states as the project's regional interlocutors proved to be a functional alternative to the role initially envisioned for the mosaic councils. The financial and operational difficulties of the mosaic councils did not permit their direct participation in the management of the project, since it did not provide support to executive secretaries of the councils. Controversies and divergent opinions among the state agencies over the role of the mosaic councils in territorial management also undermined their participation in the project's management.

The definition and formalization of institutional focal points for the project within the regions contributed toward establishing more effective channels of communication and improved the project's implementation. The identification of focal points with an appropriate profile for this role was decisive for the success in articulation and achievement of results.

The turnover of institutional representatives during the project is a frequent phenomenon and is often inevitable in the dynamic political context that characterizes governmental action. To assure continuity of the project's implementation, it was important to repeat institutional presentations and articulation following changes in managing and technical staff. It is advisable to have on hand a set of communication materials about the project to facilitate this process.

5.4. Strategic and operational planning

As a way to synthesize the project's strategy and assure clear understanding of the actions to be implemented, a results model was adopted. This model was prepared in a participatory fashion involving various partners and refined until its final approval in 2015. The results model helped mainly in documenting clearly to all actors a common understanding about the project and in structuring its Annual Operational Plan (POA).

After a first experience in preparing the POA for each of the project regions, with a high degree of local participation, it was decided to identify the demands of the partners directly involved in implementing each activity, by consulting with the focal points of each institution or by carrying out bilateral meetings. Subsequently, the proposed POA was presented to the project's Management Committee, where it was reviewed and refined, seeking to identify synergies and integration between the components, according to the theme and the regional scope of the proposed actions. After the meeting of the Management Committee, the POA was evaluated and approved by the Strategic Committee, which could suggest adjustments according to the project's management and implementation guidelines.



Reflections and lessons learned about strategic and operational planning



Mechanisms of strategic planning and management used

At the outset, the thematic complexity, the numerous actors involved, and the still abstract nature of the climate change and adaptation themes presented obstacles to understanding of the project strategy by executors and partners. Following preparation of the definitive results model, people were able to understand the strategy more effectively, and the project's scope became clearer, with definition of what implementation would and would not include.

In this context of complex and innovative initiatives, it is advisable to make consistent use of mechanisms that strengthen the construction of common objectives and shared visions. By the same token, the systematic recording of memories about project implementation (for example, through the results model, interpretation of indicators and timelines) assisted in absorbing changes of project managers and strategic orientation.



Planning routines

Several partners stressed that the procedures for operational planning were suitable and participatory, emphasizing the possibilities for exchange and knowledge concerning actions of the other actors.

The gradual refinement of the project scope revealed that the preparation of operational plans by region was not advisable, since not all the initiatives envisioned in the project were appropriate and necessary for implementation in all the regions.

Bilateral meetings with the partners prior to the annual planning meetings, adopted during the second year of implementation, facilitated the preparation of the planning workshops and improved their objectivity. The presentation and revision of indicators and targets during the meetings also improved the focus of actions and guided them to the achievement of project objectives. It was recommended to incorporate this procedure in the design of governance models.

For several executors and partners, the project offered the first opportunity of interaction with the Technical Cooperation's mechanisms, characterized by the offering of mutually agreed services, which is distinct from the cooperation formats involving transfer of financial resources. It is advisable that the Technical Cooperation facilitate the familiarization with these procedures that help to define and prioritize project actions.



Performance of the MMA / GIZ team

The performance of the project's coordination team, composed of technicians of the MMA and GIZ, received widespread praise by the partners. Technical competence, and availability and flexibility for dialogue and implementation of project actions, were especially noted.

The organization of the project team in pairs of technicians from MMA and GIZ of themes and regions was considered positive. The performance of these pairs in activities associated with the project indicators worked well.

The management workshops, carried out at regular intervals throughout the project's implementation, contributed to clarifying the roles between MMA and GIZ. However, at times the volume and diversity of themes overloaded the advisors.

Attempts to structure the management of the project through the use of software were not successful.

The contracting of local advisors made possible the project's implementation at regional and local levels. Nevertheless, it was necessary to clarify and negotiate the advisors' roles, which was interpreted at times as operating "in" the regions and at other times "for" the regions.

Striking a balance between technical assistance in the regions with demands at the federal level was a challenge for the GIZ team. With the project's increasing focus on federal policies, the regional advisors increased their dedication at the federal level, and as a result it was critical to assure the presence of the regional advisors in Brasilia. A similar distribution between federal and regional levels was found to be most appropriate.



5.5 Communication and information management

General information about the project is available for all interested parties on MMA's website.⁸ For the implementing partners, a work space has been created on the MMA's Biosphere platform,⁹ in which a collaborative environment has been developed for project management. In this work space, instruments for project management – including the results model, Annual Operational Plans, indicator forms, management reports, Terms of Reference and other relevant documents – were made available in a virtual disc.

It was also necessary, since the outset of the project, to make available clear and simple instruments that facilitate communication among the actors and enable everyone to understand the project's strategy, its approach and thematic axes. To do this, presentations, fact sheets about the project and its priority themes and an informative folder were developed.

Reflections and lessons learned about communication and information management

Several partners commented on the project's complexity and its focus on innovative and still poorly internalized themes. They requested specific and continual investments in communication, including the effective dissemination of project results, not only among the implementing team, but also for the public and the project's beneficiaries.

The Atlantic Forest project envisioned the preparation of a broad communication strategy, but problems arose in its preparation and implementation. During the project several specific communication measures were carried out, both of institutional nature and involving thematic actions. However, these initiatives could not substitute the communication strategy as a whole, such that the recommendation is emphasized to prioritize the preparation of a communication strategy at the beginning of the implementation of future projects. By the same token, it is advisable to have a communication specialist permanently and specifically dedicated to each project.

The MMA's website as well as the Biosphere platform were not updated constantly during the project implementation, nor were they utilized in the way initially visualized. This problem could have been resolved through greater approximation and joint action between the project and the communication unit of the ministry, which only took place toward the end of the Technical Cooperation.

⁸ Available at: <http://www.mma.gov.br/biomas/mata-atlantica>

⁹ Available at: <http://biosfera.mma.gov.br>

The project made progress in seeking appropriate communication formats for its lines of action, defined together with the partners (for example, through animated videos). However, in some cases the associated processes were very lengthy, limiting a more generalized application in the final stage of project implementation.

In its final stage, the project invested in a structured process of systematization, focused on internalizing and consolidating the lessons learned and products by the partners, with a view to strengthening knowledge management and promoting the sustainability of the project's contributions.

The process of systematization was initiated by the Atlantic Forest project team in June 2016 and completed the analysis and reflection of two specific project-related processes: (i) the implementation of the project as a whole, covering its trajectory, the logic of processes developed and their inter-relations; and (ii) the experiences and learning involving the different thematic lines developed.

These tasks were carried out through a set of internal reflection workshops, which sought the reconstruction and analytic interpretation of the project implementation. In addition, interviews were carried out of key governmental partners (including federal and state level) and non-governmental partners, especially in the focal project regions. These actors identified and analysed the most relevant actions and experiences involving project implementation.

The inputs and products generated during the stages of systematization gave origin to this publication.





6. Final Considerations

Whereas previous projects of cooperation between Brazil and Germany focused on the Atlantic Forest sought to generate territorial impacts in terms of biodiversity conservation, this project confronted the dual challenge of generating more effective linkages between biodiversity and climate change, and following the transition process of the priority agenda from conserving habitat remnants to restoring the native vegetation of the biome.

The Atlantic Forest project advanced on both fronts, obtaining significant impacts in terms of knowledge generation, methodological learning and experiences of application, as well as the formulation of public policies. Part of this investment was concentrated on processes of creating the foundations and structures required to act at a territorial scale.

One of the key lessons gathered throughout the project implementation was the recognition that necessary changes were initiated but require long-term perspectives to consolidate solid advances in the conservation and restoration of the biome. The implementation of the Financial Cooperation Module, as well as other related initiatives, offer the opportunity to incorporate the project's contributions and expand its impacts.

Learn about the Case Studies of the Atlantic Forest project, available in Part II of this publication.



Mata Atlântica

Biodiversidade e Mudanças Climáticas



Por ordem do



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