ɛF-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

ɔJECT TYPE: Full-sized Project
'E OF TRUST FUND:GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title: National Strategy for the Conservation of Threatened Species Project (PROSPECIES)			
Country(ies):	Brazil	GEF Project ID:[1]	9271
GEF Agency(ies):	FUNBIO (select) (select)	GEF Agency Project ID:	30.03.01
Other Executing Partner(s):	Environment Ministry, IBAMA, ICMBIO, JBRJ, OEMAS, IUCN Brazil	Submission Date:	2017-07-10
GEF Focal Area (s):	Biodiversity	Project Duration (Months)	48
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐	Corporate Program: SGP ☐	
Name of Parent Program	[if applicable]	Agency Fee ($)	1,209,150

A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES[2]

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in $) GEF Project Financing	(in $) Co-financing
BD-2 Program 3 (select) (select)	Outcome 3.1: Reduction in rates of poaching of rhinos and elephants and other threatened species and increase in arrests and convictions (baseline established per participating country)	GEFTF	1,972,389	10,645,067
BD-2 Program 4 (select) (select)	Outcome 4.1: Improve management frameworks to prevent, control, and manage invasive alien species (IAS)	GEFTF	1,542,360	1,394,943
BD-4 Program 9 (select) (select)	Outcome 9.1 Increased area of production landscapes and seascapes that integrate conservation and sustainable use of biodiversity into management Outcome 9.2 Sector policies and regulatory frameworks incorporate biodiversity considerations.	GEFTF	9,920,251	38,902,857
	Total project costs		13,435,000	50,942,867

B. PROJECT DESCRIPTION SUMMARY

Project Objective: Mainstream species conservation into productive landscapes and sectors						
Project Components/ Programs	**Financing Type[3]**	**Project Outcomes**	**Project Outputs**	**Trust Fund**	**(in $) GEF Project Financing**	**(in $) Confirmed Co-financing**
1 – Incorporation of threatened species criteria into sectoral policies	Inv	1.1 -Establishment of governance framework for implementation of conservation	(1.1) 290 critically endangered species included in action plans with conservation	GEFTF	8,960,251	37,204,128

[1] Project ID number remains the same as the assigned PIF number.
[2] When completing Table A, refer to the excerpts on GEF 6 Results Frameworks for GETF, LDCF and SCCF and CBIT programming directions.
[3] Financing type can be either investment or technical assistance.

		strategies for threatened species 1.2 –Incorporation of threatened species considerations in sectoral policies and regulatory frameworks at national and subnational levels 1.3 – Action Plans elaborated and executed 1.4 – Integrated database and established	initiatives implemented (1.2) At least three sectoral policies incorporating threatened species considerations; (1.3) Selection of at least 12 critical geographical areas for the implementation of threatened species conservation actions			
2 – Control, engagement and awareness of hunting, illegal extraction and trafficking of wildlife.	Inv	2.1 – System for combating hunting, illegal extraction and trafficking of wildlife; 2.2 – Implemented intelligence structure; 2.3 - Trained enforcement officers; 2.4 Society involved and aware	(2.1) Intelligence system and use of new technologies to tackle hunting, illegal extraction and trafficking of wildlife (2.2) At least 200 enforcement agents trained to implement the new system (2.3) At least one geographical area selected for implementation of local community engagement actions.	GEFTF	1,972,389	10,645,067
3 - Prevention, early detection of and quick response to invasive alien species	Inv	3.1 - Improved management structures for the prevention, early detection, eradication and control of invasive alien species	(3.1) Prevention and Early warning detection system for invasive alien species designed and implemented (3.2) At least one geographic area selected for the implementation of actions to prevent, control and eradicate IAS.	GEFTF	1,542,360	1,394,943
4. Coordination and Communication	Inv	4.1 –Strategic communication plan implemented; 4.2 – Dissemination of biodiversity information to authorities 4.3 - Implementation of institutional coordination arrangement	(4.1) Improved biodiversity communication and data dissemination; (4.2) Improved institutional coordination	GEFTF	660,000	1,698,729

Subtotal		13,135,000	50,942,867
Project Management Cost (PMC)[4]	GEFTF	300,000	
Total project costs		13,435,000	50,942,867

C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Please include evidence for co-financing for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Amount ($)
Recipient Government	MMA – Environmnent Ministry	In-kind	1,016,746
Recipient Government	MMA – Environmnent Ministry	Grants	29,424
Recipient Government	ICMBIO	In-kind	2,441,085
Recipient Government	Rio de Janeiro Botanical Garden - JBRJ	Grants	3,549,493
Recipient Government	Rio de Janeiro Botanical Garden - JBRJ	In-kind	2,322,062
Recipient Government	IBAMA	In-kind	92,125
Recipient Government	Santa Catarina State	Grants	185,925
Recipient Government	Santa Catarina State	In-kind	591,608
Recipient Government	Rio de Janeiro State	Grants	1,256,163
Recipient Government	Rio de Janeiro State	In-kind	173,406
Recipient Government	Espirito Santo State	Grants	494,844
Recipient Government	Espirito Santo State	In-kind	243,000
Recipient Government	Amazonas State	Grants	80,355
Recipient Government	Amazonas State	In-kind	111,249
Recipient Government	Bahia State	In-kind	187,500
Recipient Government	Maranhao State	Grants	93,750
Recipient Government	Maranhao State	In-kind	28,125
Recipient Government	Parana State	In-kind	1,025,875
Recipient Government	Rio Grande do Sul State	Grants	58,594
Recipient Government	Rio Grande do Sul State	In-kind	554,630
Recipient Government	Sao Paulo State	Grants	1,934,255
Recipient Government	Sao Paulo State	In-kind	17,980,357
Recipient Government	Minas Gerais State	In-kind	8,337,238
Recipient Government	Tocantins State	In-kind	1,166,875
Recipient Government	Para State	Grants	1,213,892
Recipient Government	Para State	In-kind	5,779,290
Total Co-financing			50,942,867

[4] For GEF Project Financing up to $2 million, PMC could be up to10% of the subtotal; above $2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee[a)] (b)[2]	Total (c)=a+b
FUNBIO	GEF TF	Brazil	Biodiversity	(select as applicable)	13,435,000	1,209,150	14,644,150
(select)	(select)		(select)	(select as applicable)			
(select)	(select)		(select)	(select as applicable)			
(select)	(select)		(select)	(select as applicable)			
Total Grant Resources					13,435,000	1,209,150	14,644,150

a) Refer to the Fee Policy for GEF Partner Agencies

E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS[5]

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	*9,000,000 hectares*
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	*hectares*
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	*Number of freshwater basins*
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	*Percent of fisheries, by volume*
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	metric tons
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	*metric tons*
	Reduction of 1000 tons of Mercury	*metric tons*
	Phase-out of 303.44 tons of ODP (HCFC)	*ODP tons*
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10	*Number of Countries:*

[5] Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the *GEF-6 Programming Directions*, will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

mainstream into national and sub-national policy, planning financial and legal frameworks	countries	
	Functional environmental information systems are established to support decision-making in at least 10 countries	*Number of Countries: 1*

F. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? No

(If non-grant instruments are used, provide an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/CBIT Trust Fund) in Annex D.

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF[6]

1. During the PPG phase the Environment Ministry with support from Funbio made a selection for a PPG executioning agency among Brazilian NGOs with focus on species conservation. This process was made in order to use the opportunity of the PPG phase as a training and evaluation ground for the full project execution. This provided the selected NGO training from Funbio procurement and financial team and time to learn by doing. During the PPG phase all procurement processes made by the selected NGO followed Funbio procedures and were all prior reviewed by Funbio procurement team, which provides guidance and ask for adjustments where they were needed. The result was a little longer PPG phase but a trained executor for the whole project and a potential faster project start.
2. The most critical activity made during the PPG phase was the work on the map of potential project sites, taking into consideration the information on endangered species, species conservation plans and protected areas. The work done produced detailed potential sites where the project would have substantial outcomes. The sum of the areas in the potential sites are much bigger than the targeted project benefit of 9 million hectares. This was done on purpose to give project coordination some room to maneuver if local political obstacles were to be found. It also made the project ready to achieve higher results if efficiency in execution is achieved.
3. During the PPG phase the Environment Ministry conducted a series of stakeholder meetings to further explain the project and work in detailed project activities. An important aspect of this was reaching out environment state agencies in Brazil, which are key to implement licensing guidelines for the private sector. State agencies were not consulted for PIF stage and the interest they would have were expected, but still an assumption. During the last months the interest shown by those agencies was stronger than anticipated.
4. The project document was elaborated entirely in Portuguese and later translated, this facilitate sharing and comprehension of the project by a larger group, increasing country ownership. After the CEO Endorsement phase any contribution or adjustment made in the english version will also be made into the Portuguese version.
5. Finnally, its commendable that the project was developed during a very stressed political environment in Brazil with a presidential impeachment process and an ongoing economic crisis that just start to show signs of recovery. Amidst this hostile scenario the environment ministry kept high support for the project and the good response by state agencies hints of a well timed and adjusted project for the country needs on endangered species conservation.

A.1. *Project Description*. Elaborate on: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline

[6] For questions A.1 –A.7 in Part II, if there are no changes since PIF , no need to respond, please enter "NA" after the respective question.

projects, 3) the proposed alternative scenario, GEF focal area[7] strategies, with a brief description of expected outcomes and components of the project, 4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, CBIT and co-financing; 5) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 6) innovativeness, sustainability and potential for scaling up.

General context (item 3.1.1 in Funbio Project Document)

Global environmental issues related to the project

6. Biological diversity, or biodiversity, is the term used to describe the variety of life on Earth. It is the combination of life forms and their interactions with each other and with the physical environment. Changes in biodiversity have been mainly evaluated in terms of declining populations and species, individually or collectively, through habitat loss or reduction in the ecosystem area. Historically, much conservation activity has been justified on the need to prevent species extinction due to its irreversibility, since the loss of a species entails the loss of unique elements or combinations of diversity at the genes, organisms and ecosystems levels[8].
7. The services provided by healthy and biodiverse ecosystems are the basis for human well-being. Ecosystems provide the basic necessities for life, as well as protection against natural disasters and diseases, and are the foundation for human culture. However, many ecosystem services are in decline, including the provision of fresh water, sea fisheries production, the atmosphere's ability to purify itself of pollutants, natural hazard regulation, regulation of risks of natural disasters, pollination, and the capacity of agricultural ecosystems to control pests[9].
8. Among the biodiversity threats and the main causes of species extinction are the degradation and fragmentation of natural ecosystems, resulting from the opening of large areas for grazing or conventional agriculture, disorderly forest extractivism, urban expansion, road network expansion, forest fires, formation of hydropower reservoirs and mining. Coastal and marine ecosystems are being heavily affected by human activities, with degradation leading to reduced coverage of mangroves, seaweed and coral reefs. In addition, over-fishing has led to declining stocks, both marine and freshwater. The rates and risk of invasive alien species introductions have increased significantly recently and will continue to increase as a result of travel, trade and tourism. These species present competitive advantages over native species, possibly changing ecological cycles and leading native populations to extinction[10].
9. Ultimately, halting global biodiversity loss requires reduction of the underlying factors involved. Addressing the factors that contribute to biodiversity loss requires behavioral changes of individuals and governments. Understanding, awareness, and appreciation of the diverse values of biodiversity are necessary to sustain individuals' ability and willingness to make such social and political changes[11].
10. Considering this global concern about biological diversity loss and its effect on human well-being, parties of the Convention on Biological Diversity (CBD) adopted the Strategic Plan for Biodiversity for the 2011-2020 period, with the 20 Aichi Targets, to achieve the main objectives of biological diversity

[7] For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which Aichi Target(s) the project will directly contribute to achieving..

[8] SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY, Global Biodiversity Outlook, 2001. Available at: <https://www.cbd.int/doc/publications/gbo/gbo-ch-01-en.pdf> Accessed on 05 Dec. 2016.

[9] SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY, Global Biodiversity Outlook 2, 2006. Montreal. Available at: <https://www.cbd.int/doc/gbo/gbo2/cbd-gbo2-en.pdf> Accessed on 05 Dec. 2016.

[10] SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY, Global Biodiversity Outlook 4, 2014. Montreal. Available at: <https://www.cbd.int/gbo/gbo4/gbo4-summary-en.pdf > Accessed on 05 Dec. 2016.

[11] LEADLEY, P.W.; KRUG, C.B.; ALKEMADE, R., et al. *Progress towards the Aichi Biodiversity Targets*: An Assessment of Biodiversity Trends, Policy Scenarios and Key Actions. Secretariat of the Convention on Biological Diversity, Montreal, Canada. Technical Series 78, 2014. p. 500.

conservation, the sustainable use of its components and the fair and equal sharing of benefits derived from the use of genetic resources.

11. The Global Biodiversity Outlook 4 (GBO-4)[4] was published in October 2014 to monitor progress towards the achievement of the Aichi Targets. This document states that actions currently taken so far are not enough to achieve the majority of the 20 targets by 2020, in particular Target 12 which aims to avoid species extinction and improve their conservation status (Fig. 1).

12. In accordance with the GBO-4, coordinated conservation actions have shown to be effective in reducing the risk of vertebrate species extinction[12] [13], and other actions may prevent some extinctions that would otherwise happen by 2020. However, estimates suggest that it is unlikely that all endangered species extinctions (birds and mammals) will be prevented by 2020. In fact, many species are in danger of imminent extinction and the level of resources needed to prevent their extinction is greater than the current investments[14]. In addition, many undescribed species have probably already gone extinct, or will by 2020, without our knowledge[15].

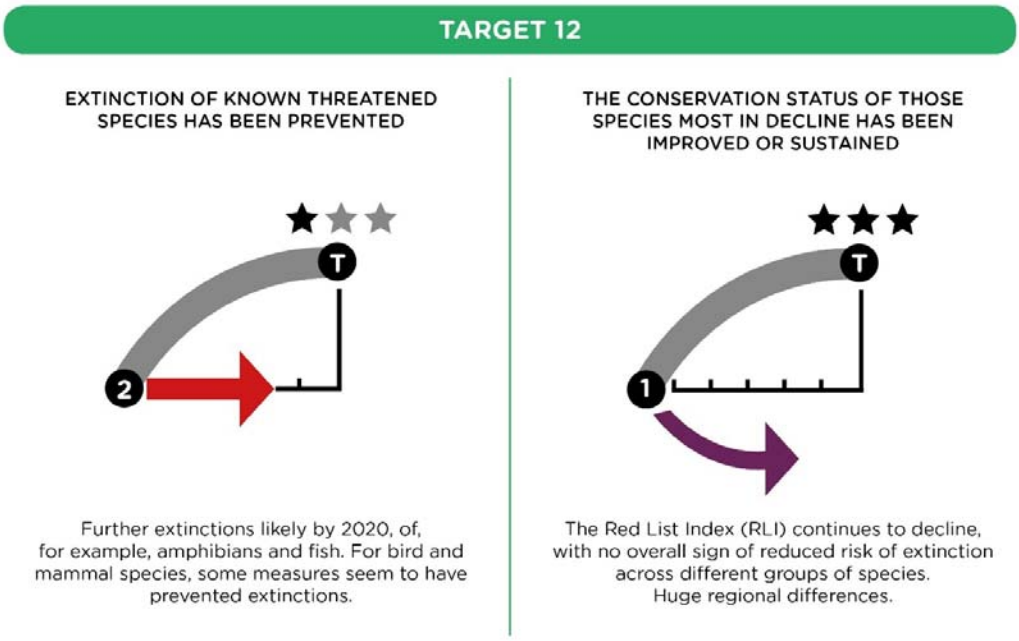

Figure 1. Global progress in relation to Aichi Biodiversity Target 12.

13. GBO-4 advocates that to avoid further species extinctions, substantial investment in conservation of terrestrial, freshwater and marine ecosystems is needed. Species conservation should be complemented by landscape or ecosystem policy measures geared towards reducing the main threats, like loss of habitat.

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[12] BUTCHART, S. H. M.; STATTERSFIELD, A. J.; BROOKS, T. M. 2006. *Going or gone*: defining 'possibly extinct' species to give a truer picture of recent extinctions. *Bulletin of the British Ornithological Club:* v 126A, p. 7-24.

[13] HOFFMANN M., C. HILTON-TAYLOR, A. ANGULO, M. BOHM, T. M. BROOKS, S. H. M. BUTCHART, K. E. CARPENTER, et al. "The impact of conservation on the status of the world's vertebrates." *Science:* v 330, n 6010, p. 1503-1509. 2010.

[14] MCCARTHY et al. Resource Requirements for Achieving Aichi Targets 11 and 12. CONVENTION ON BIOLOGICAL DIVERSITY, Montreal, Canada. 2012.

[15] MORA, C.; WEI C-L, ROLLO A, AMARO T, BACO AR, BILLETT D, et al. Biotic and human vulnerability to projected changes in ocean biogeochemistry over the 21 Century. *PLoS Biology* v 11, 2013.

14. Based on the various lines of evidence used in GBO-4, the following actions may be effective and will help accelerate progress toward Target 12 if widely applied. Actions to reduce the risk of species extinction are also relevant to reach other targets, shown in parentheses:

- Identify and prioritize species for conservation activities based on species conservation status assessments (Target 19);
- Fill gaps in national, regional and global species conservation status assessments (Target 19);
- Develop and implement action plans that include specific conservation actions targeting endangered species, e.g. through trade restrictions, captive breeding and reintroductions;
- Develop more representative and better managed protected area systems, prioritizing sites of particular importance to biodiversity, especially those containing unique populations of endangered species (Target 11);
- Reduce habitat loss, degradation and fragmentation (Target 5) and actively restore degraded habitats (Target 15);
- Promote fishing practices that consider the impact on marine ecosystems and non-target species (Target 6);
- Control or eradicate invasive alien species and their vectors (Target 9) to prevent their introduction and establishment;
- Reduce pressures on habitats through sustainable land use practices (Target 7);
- Ensure that no species is subject to unsustainable exploitation for domestic or international trade, including the adoption of measures agreed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and reduce demand of products derived from these actions (Target 4).

15. Among the programs established by the Convention on Biological Diversity, is the Global Strategy for Plant Conservation (GSPC), which establishes specific targets for a period of ten years and has as objective to stop the loss of diversity of plant species at the global level. The GSPC has been updated at the CBD COP meeting in Nagoya, 2010 (CBD-COP10), in which a decision was approved by the Governments of all participating countries, including Brazil, for the period from 2011 to 2020, containing 16 targets to be achieved[16].

Brazilian Context (item 3.1.2 in Funbio Project Document)

16. Brazil is one of the most biodiverse countries in the world, around 10 to 15% of all currently known species are found in Brazil. The Brazilian Fauna Taxonomy Online Catalog (2016) [17] currently indicates 116,839 animal species already registered, including vertebrates and invertebrates, and the Online List of Species of Brazilian Flora (2016) [18] already has 46,355 species registered (Fig. 2). The country has the largest number of plant species in the world, of which more than 40% are endemic, and the angiosperms group has even more endemism, with 56%. Every day new species are discovered and described in Brazil, which makes it reasonable to say that the actual numbers are even higher[19].

[16] DIAS, F.D.S.B.; HOFT, R. Desafios para Implementação da Estratégia Global para a Conservação de Plantas no Brasil. In: Martinelli, G.; Moraes, M. A. (Org.). Livro Vermelho da Flora do Brasil. Rio de Janeiro: Andrea Jakobsson: Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, 2013, 26-39 pp.

[17] CATÁLOGO TAXONÔMICO DA FAUNA DO BRASIL. Available at: <http://fauna.jbrj.gov.br/fauna/listaBrasil/ConsultaPublicaUC/ConsultaPublicaUC.do> Accessed on 08 Feb. 2017.

[18] FLORA DO BRASIL 2020. Jardim Botânico do Rio de Janeiro. Available at: <http://floradobrasil.jbrj.gov.br/>. Accessed on: 15 Feb. 2017

[19] LEWINSOHN, T. M.; PRADO, P. I. Avaliação do Conhecimento da Biodiversidade Brasileira. Ministério do Meio Ambiente, Série Biodiversidade 15, Brasília. 2006. 2 vol.

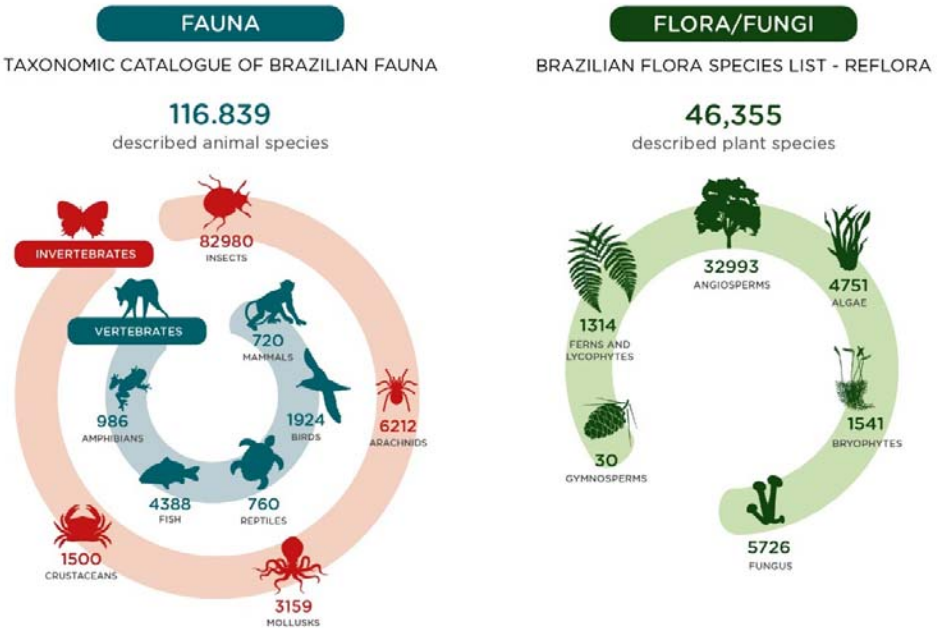

Fig. 2. Main groups of the diversity of Brazilian fauna and flora species.

17. Understanding the state of biodiversity conservation is the basic starting point for robust planning of measures that must be taken to reduce the risk of species extinction and ensure their survival. The species extinction risk assessment provides basis for the definition of priorities in public policies related to conservation and resource use.

18. Information about extinction risks has gained importance after an extensive evaluation conducted over the past six years by the GEF-funded National Biodiversity Mainstreaming and Institutional Consolidation Project. The Project resulted in a list of 3,286 threatened species[20], which corresponds to a 200% increase in the previous red list for Brazilian species, which emphasizes the need for actions that reduce the risk of species extinction. The project also pointed to the large number of species with Data Deficiency (DD), being 535 plant species and 1,669 animal species. These data show that Brazilian society faces a great challenge to change this reality.

19. Of the current 3,286 threatened species officially recognized in Brazil, 947 are in the Vulnerable threat category, 1,553 are endangered, 785 Critically endangered and ten species are considered extinct and one extinct in the wild, with four extinctions having occurred over a century ago and seven extinctions being recent. There is a total of 1,173 registered threatened species of fauna, and the freshwater fish group contains the largest number of species under some category of threat (310 species), followed by birds (233), terrestrial invertebrates (233) and mammals (110) (Fig. 3).

[20] MINISTÉRIO DO MEIO AMBIENTE, Ordinance number 443/2014 of Official National List of Flora species threatened with Extinction. Available at: <pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?data=18/12/2014&jornal=1&pagina=110&totalArquivos=144> Accessed on: 15 Feb. 2017
MINISTÉRIO DO MEIO AMBIENTE, Ordinance number 444/2014 Official National List of Fauna species threatened with Extinction. Available at: <pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?jornal=1&pagina=121&data=18/12/2014> Accessed on: 15 Feb. 2017
MINISTÉRIO DO MEIO AMBIENTE, Ordinance number 445/2014 Official National List of Fauna species threatened with Extinction. - Fish and Aquatic Invertebrates. Available at: <pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?jornal=1&pagina=126&data=18/12/2014> Accessed on: 15 Feb. 2017

Figure 3. Number of threatened fauna species and threat categories of each taxonomic group (CR: Critically endangered, EN: Endangered, and VU: Vulnerable).

20. Administrative Measure MMA 443 has updated the Red List of threatened plant species, substituting the earlier list issued in 2008 (Normative Instruction MMA 6/2008). The updated list was elaborated under the coordination of the National Center for Plant Conservation (CNCFlora) of the Rio de Janeiro Botanic Garden (one of MMA's institutes), based on an assessment of 4,587 species previously included in red lists of IUCN, of the Brazilian MMA (including a large number of DD species) and of seven Brazilian States. The new red list recognizes 2,113 species as threatened, 467 as CR, 1,147 as EN and 499 as VU (no species recognized as EX or EW), based on the assessment published in the Brazilian Plants Red Data Book published in December 2013[21]. This represents a fivefold increase in recognized threatened species from the 2008 red list which included 472 species. About one fifth, 89 species, of those previously included in the 2008 red list were excluded from the 2014 red list (19 as NT, 33 as LC and 37 as DD), 1,948 assessed species were recognized as non-threatened (NT and LC) and 535 species were considered DD. 75% of the species included in the 2014 red list were previously listed as DD in the 2008 red list (Braulio Dias, personal information).

21. Administrative Measure MMA 444 has updated the Red List of Vertebrates (except fishes) and terrestrial invertebrates, substituting the earlier list issued in 2003 (Normative Instruction MMA 3/2003), and Administrative Measure MMA 445 has updated the Red List of Fishes and aquatic Invertebrates, substituting the earlier list issued in 2004 (Normative Instruction MMA 5/2004, with corrections by Normative Instruction MMA 52/2005). The updated list was elaborated under the coordination of the Chico Mendes Institute for Biodiversity Conservation (ICMBio) (another of MMA's institutes), based on an assessment of 12,256 species made by 1,383 experts in 73 workshops, including all known species of Mammals (732 species), of Birds (1,980 species), of Reptiles (727 species), of Amphibians (973 species), of continental Fishes (3131 species) and marine Fishes (1,376 species) and a selected number of terrestrial Invertebrates (2,423 species) and aquatic Invertebrates (continental and marine, 909 species).

22. The 2014 lists recognized 1,173 species of fauna as threatened, which represents almost a doubling of threatened species compared with the earlier lists (IN MMA 3/2003 and IN MMA 5/2004 + IN MMA 52/2005), which assessed a total of 1,137 species thought to be at risk and recognized 627 species as threatened. The 2014 assessment effort increased around tenfold compared with the 2003/2004 assessment. Of the additional species included in the 2014 Red List of Fishes and aquatic Invertebrates,

[21] MARTINELLI, G.; MORAES, M. A. (eds.). Livro Vermelho da Flora do Brasil. Rio de Janeiro: Andrea Jakobson Estudio; Instituto de Pesquisas Jardim Botânico do Rio de Janeiro. 2013, 1100 p.

43% represent species which were only scientifically described after 2003 and 19% represent species which were included in 2004/5 in the separate List of Overexploited Species. Of the additional species included in the 2014 Red List of Vertebrates (except Fishes) and terrestrial Invertebrates, 194 (49%) were not assessed in 2003, 130 (33%) were only scientifically described after 2003, 47 (12%) were considered DD in 2003 and 24 (6%) represent species whose conservation status worsened since 2003 (Braulio Dias, personal information).

23. Of the species included in the 2003/4 fauna Red Lists, 170 (27%) were excluded from the 2014 Red List, of which 164 species due to increased knowledge (larger known distribution and/or population) and six species due to a significant improvement in their population and conservation status (the Humpback whale, *Megaptera novaeangliae* (Borowski, 1781)) the White Bald-headed Uakary monkey, *Cacajao calvus* (I. Geoffroy, 1847), the Hyacinth macaw, *Anodorhynchus hyacinthinus* (Latham 1790), the Black-browed Albatross, *Thalassarche melanophrys* (Temminck, 1828), the Gramma reef fish, *Gramma brasiliensis* Sazima, Gasparini & Moura, 1998, and the cave spider *Anapistula guyri* Rheims & Brescovit 2003). Additionally, 55 species improved their conservation status while remaining in the Red List (3 from EX or EW to CR, 30 from CR to EN, 6 from CR to VU and 16 from EN to VU). Four species recognized as extinct by the 2003/4 Red Lists were rediscovered, with one being reclassified in the 2014 Red List as CR (the damselfly *Fluminagrion taxaense* (Santos 1965)), another being reclassified as EN (the earthworm *Fimoscolex sporadochaetus* Michaelsen 1918) and two being excluded altogether from the 2014 Red List (the ant *Simopelta minima* (Brandão, 1989) and the giant earthworm *Rhinodrilus fafner* Michaelsen 1918) (Braulio Dias, personal information).

24. No species of plant was recognized in 2014 as extinct or extinct in the wild. Regarding the fauna, two species were recognized as extinct in the wild in the 2003 Red List, but still kept and bred in captivity: the Spix's Macaw *Cyanopsitta spixii* (last seen in the wild in 2000 and currently with 92 individuals in captivity, in Brazil, Qatar and Germany) and the Alagoas *Curassaw Pauxi mitu* (last seen in the wild in the late 1980's and reaching some 120 individuals in captivity in 2008, all in Brazil), the first from the Caatinga dry forests of Northeastern Brazil and the second from coastal rainforests in Northeastern Brazil - but the 2014 Red List reclassified the Spix's Macaw as CR. Three species recognized as extinct in the 2003 Red List maintained the same status in the 2014 Red List (the Eskimo Curlew *Numenius borealis* (Forster, 1772), last seen in the wild in Brazil in the 1820's and not recorded elsewhere in the Americas with certainty since 1963 (and none have been confirmed on the wintering grounds since 1939); the Glaucous Macaw *Anodorhynchus glaucus* (Vieillot, 1816), last seen in the wild in 1860; and the Spiny-knee Leaf Frog *Phrynomedusa fimbriata* Miranda-Ribeiro, 1923 last seen in the wild in 1898) (Braulio Dias, personal information).

25. Additionally, the 2014 Red List also recognized as extinct the rodent *Noronhomys vespucii* (only described in 1999 from fossil remains from the Fernando de Noronha island and with potential sighthings in the XVI Century), the Pampas Meadowlark *Sturnella defilippi* (Bonaparte 1850) (always rare in South Brazil with only four winter records from Paraná, Santa Catarina, and Rio Grande do Sul, last seen in the wild in Brazil in the late 19th and early 20th Century, but still present currently and declining in Uruguay and Argentina), the Pernambuco Pygmy Owl *Glaucidium mooreorum* Silva, Coelho & Gonzaga, 2002 (last seen in the wild in 2001), the Alagoas Foliage-gleaner *Philydor novaesi* Teixeira & Gonzaga, 1983 (last seen in the wild in 2011), and the Cryptic Treehunter *Cichlocolaptes mazarbarnetti* Barnett & Buzzetti 2014 (last seen in the wild in 2007), the last three being forest endemics from the highly fragmented forests of the Pernambuco Center of Endemism in Northeastern Brazil. Also two species of shark were recognized as extinct in the 2014 Red List: *Carcharhinus isodon* (Müller & Henle, 1839) (a rare coastal shark last seen in the wild in Southern Brazil in the 1990's) and *Schroederichthys bivius* (Müller & Henle, 1838) (a rare deep waters shark but reported as relatively frequent in the ReviZEE surveys in Southern Brazil in the 1990's) (Braulio Dias, personal information).

26. Therefore, the main active recent events of extinction in Brazil are associated with the highly fragmented and degraded forests of Pernambuco Center of Endemism in the Northern tip of the Atlantic Forest biome which were heavily impacted by deforestation associated with the expansion of sugar cane since the late 16th Century and more recently since the 1970's (Braulio Dias, personal information).

According to del Hoyo & Collar (2014; 2016)[22], the Pernambuco Pygmy Owl *Glaucidium mooreorum* is part of the *Glaucidium minutissimum* (Wied 1830) species complex and could be conspecific with another member of the complex, the Glaucous Macaw *Anodorhynchus glaucus* could be conspecific with the Lear's Macaw *Anodorhynchus leari* Bonaparte 1856, Critically Endangered in the Caatinga dry forest, the Alagoas Foliage-gleaner *Philydor novaesi* is regarded as possibly extinct and closely related to *Philydor atricapilus* (Wied 1821) and the Cryptic Treehunter *Cichlocolaptes mazarbarnetti* is regarded as perhaps extinct.

27. Of the evaluated flora species, 2,113 species are under some category of threat. The angiosperms lead the group with the highest number of species at risk of extinction (1,999 species), followed by ferns and lycophytes (91 species) (Fig. 4).

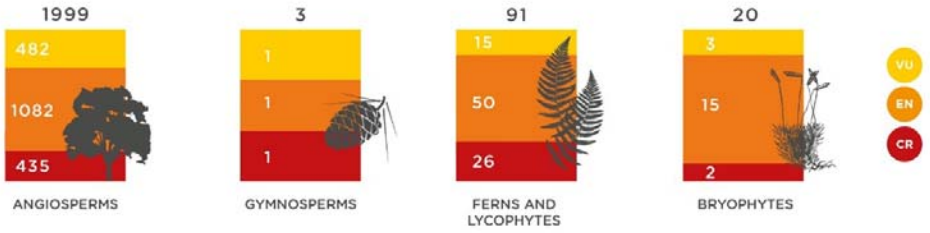

Figure 4. Number of threatened flora species and threat categories of each taxonomic group (CR: Critically endangered, EN: Endangered, and VU: Vulnerable).

28. An analysis of the threatened species richness in the Brazilian territory showed a higher concentration of these species in the southern and southeastern states, as well as in the states of Bahia, Goiás, Distrito Federal and the entire marine coast (Fig. 5). When analyzing the number of species endangered by biome, one can see that the Atlantic Forest has the highest number of endangered species with 1,031; followed by the *Cerrado* with 988 and *Caatinga* with 310 (Fig. 6). The Atlantic Forest also has the highest number of species in the highest risk category, 446 species are Critically Endangered. Note that of these data, some species occur in more than one biome, and may overlap.

[22] DEL HOYO, J.; COLLAR, N. J. HBW and Birdlife International Illustrated Checklist of the Birds of the World. Barcelona, Lynx Edicions, 2014; 2016, 2 vols.

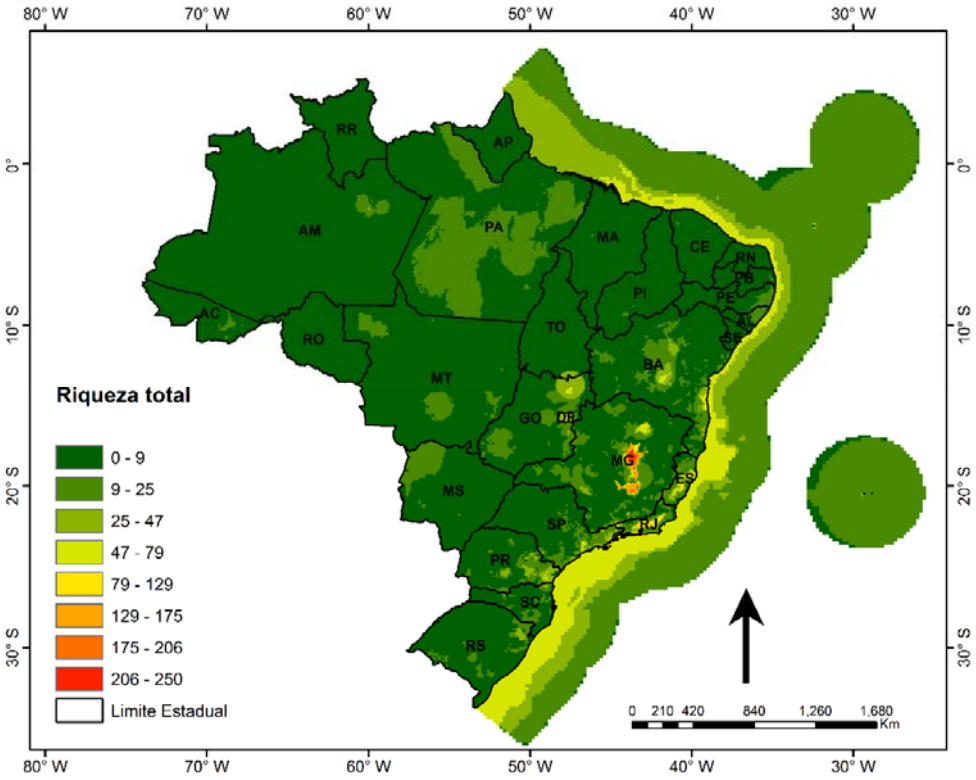

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Figure 5. Map of threatened species richness in Brazil.

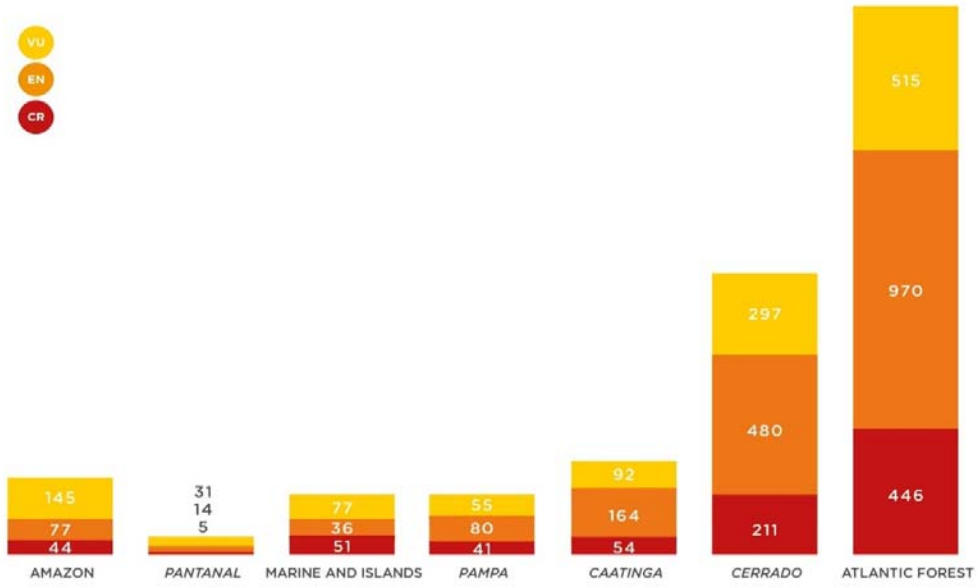

Figure 6. Graph of threatened species by biome and threat categories.

30. Among the main causes that contributed to make the species threatened are: (a) habitat loss and degradation affect 963 species of fauna (82.1%) and 1,540 species of flora (72.9%); (B) direct extraction (hunting, fishing and collection) affects 340 species of fauna (29%) and 272 species of flora (12.9%); (C) invasive alien species are threats to 88 species of fauna (7.5%) and 156 species of flora (7.4%); and (d) unknown threats affect 7 species of fauna (0.6%) and 356 species of flora (16.8%). It is observed that one specie may be subject to more than one type of threat, and data may overlap.
31. Although direct extraction poses a threat to several species, plant extraction, subsistence hunting and fishing continue to provide a substantial portion of food for human populations.
32. Threats of invasive alien species (IAS) affect many species of Brazilian biodiversity, with emphasis on the high level of impact to plants in the Pampa biome and animals on oceanic islands. The "First National Report on Invasive Alien Species"[23], funded by the GEF Project "National Biodiversity Project - PROBIO I" in 2006, identified 543 alien species in marine[24], freshwater[25] and terrestrial environments, as well as agricultural systems and alien species that affect human health[26] [27] [28] [29].
33. Despite the efforts described above for Brazilian species conservation, the three major threats to biodiversity continue to advance in the country: (1) habitat loss, mainly through agricultural expansion and infrastructure projects, (2) illegal hunting, fishing and plant extraction, and (3) invasive alien species introduction. The current challenge is to find new ways and national strategies to minimize these threats and reverse the increase in the number of threatened species currently without effective protection measures, which is the focus of this project.
34. The pressures of human activities on species are a challenge to be dealt with, since biodiversity is the basis of developed and developing economies. To this end, efforts must be made at all government levels and in all sectors to integrate biodiversity into effective institutional, legislative and regulatory

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[23] CORADIN, L.; TORTATO, D.T. 2006. Espécies exóticas invasoras: situação brasileira. Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas, MMA, Brasília, 2006. 24p. Available at: <http://www.mma.gov.br/estruturas/174/_publicacao/174_publicacao17092009113400.pdf >Accessed on 03 Apr. 2017

[24] LOPES, R.M. (ed.). Informe sobre as espécies exóticas invasoras marinhas no Brasil. Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas, MMA, Série Biodiversidade, 33, Brasília, 2009. 440 p. Available at: <http://www.mma.gov.br/estruturas/sbf2008_dcbio/_publicacao/147_publicacao07072011012531.pdf> Accessed on 03 April. 2017

25 LATINI, A. O. et al. (org.). Espécies exóticas invasoras de águas Continentais no Brasil. Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas, MMA, Série Biodiversidade, 39, Brasília: MMA, 2016. 791 p. Available at <http://www.mma.gov.br/publicacoes/biodiversidade/category/56-especies-exoticas-invasoras> Accessed on 03 April. 2017

[26] MINISTÉRIO DO MEIO AMBIENTE. Informe Nacional de Espécies Exóticas Invasoras que Afetam Ambientes Terrestres. Relatório Final. Volume I (Relatório de Atividades), Curitiba, Instituto Hórus, 41p. 2005. Available at < http://sistemas.mma.gov.br/sigepro/arquivos/_6/Volume%20I%20-%20Relatorio%20final.pdf> Accessed on 25 Apr. 2017

[27] MINISTÉRIO DO MEIO AMBIENTE. Informe Nacional de Espécies Exóticas Invasoras que Afetam Ambientes Terrestres. Relatório Final. Volume II (Proposta para Análise de Risco), Curitiba, Instituto Hórus, 35p., 2005. Available at: < http://sistemas.mma.gov.br/sigepro/arquivos/_6/Volume%20II%20-%20Analise%20de%20Risco.pdf> Accessed on 25 Apr. 2017

[28] FUNDAÇÃO OSWALDO CRUZ. Espécies Exóticas Invasoras que Afetam a Saúde Humana. Relatório Final. Rio de Janeiro, Fundação para o Desenvolvimento Científico e Tecnológico em Saúde & Fundação Oswaldo Cruz, 186p., 2005. Available at: <http://sistemas.mma.gov.br/sigepro/arquivos/_6/Relatorio%20Final2%20PROBIO.pdf> Accessed on 25 Apr. 2017

[29] EMBRAPA RECURSOS GENÉTICOS E BIOTECNOLOGIA. Elaboração de Informes sobre Espécies Invasoras Exóticas em Sistemas de Produção da Agricultura, Pecuária e Silvicultura. Brasília, Embrapa, Capítulo I, Diagnóstico das Espécies Invasoras Exóticas potenciais e atuais que afetam os Sistemas de Produção da Agricultura. Brasília, 2005, 823p. Available at: <http://sistemas.mma.gov.br/sigepro/arquivos/_6/Volumeum02mai06.pdf> Accessed on 25 Apr. 2017

frameworks and incorporate an inclusive economic, social and cultural approach with full respect for nature and human rights[30].

35. Without biodiversity, livelihoods, ecosystem services, natural habitats and food security can be seriously undermined. Measures to reduce negative impacts on biodiversity can sustain a wide range of benefits to society by establishing structures for socioeconomic transition towards a more sustainable and inclusive development model. Within this model, the economic value of biodiversity must be directly taken into account, giving governments concrete incentives to ensure that the environmental resources and the wide variety of species are managed responsibly[31].

Baseline / current situation (item 3.1.3 in Funbio Project Document)

Conservation tools

36. Considering that Brazilian biodiversity has some of the richest biomes on the planet and the most diverse flora in the world, the country's government has developed very comprehensive environmental legislation. The first legal provisions for protection of flora and fauna were established in 1934 (the former Forestry Code Decree 23.793 and the former Decree of Protection to Animals Decree Num. 24,645), however, the application of these instruments was of low effectiveness. Others measures aiming to conservation of biological diversity were evident only in 1965 through Law Num. 4,771, which established the new Forest Code (subsequently substituted by Law 12,651/2012). In 1967, the Decree-Law 221, which established rules for the granting of fishing permits and prohibitions, for the protection of aquatic fauna, prohibition of the importation of species without authorization and pollution of waters damaging aquatic fauna, was also sanctioned. In this same year, the Fauna Protection Law (Num. 5,197, of January 3, 1967) was instituted, which criminalizes the hunting and illegal trade of wild animals. This legal framework was reinforced by the 1988 constitution, which in its art. 225 determines as the responsibility of the Public Power "to protect the fauna and flora, prohibits, in the form of law, practices that put their ecological function at risk, cause the extinction of the species or subject animals to cruelty".

37. With the Legislative Decree Num. 54 of June 24, 1975, Brazil became a signatory of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), promulgated by Decree num. 76,623 of November 17, 1975, as amended by Legislative Decree num. 35 of December 5, 1985, and promulgated by Decree num. 92,446 of March 7, 1986. Also in this decade, Law 6,938 of August 31, 1981, was passed, which stipulates the Environment National Policy, including its purposes and mechanisms for formulation and application. The 1988 Constitution consolidated the legal process for environmental protection by means of Article 225, which guarantees an ecologically balanced environment maintained by the State and society, since it is a common good of the people, that should be preserved and maintained for the present and future generations.

38. In 1992, Brazil hosted the United Nations Conference on Environment and Development, which resulted, among other agreements, in the Convention on Biological Diversity (CBD), ratified by Legislative Decree num. 2 of 1994 and promulgated by Decree Num. 2,519, of 1998, in which the country assumed a series of commitments to the international community. In the same year, the Law on Environmental Crimes was enacted, Law Num. 9,605 of February 12, 1998 (also known as the Law of Life), which provides the specifications of criminal and administrative sanctions resulting from conducts and activities that can harm the environment. It should be noted that the penalties applicable to infringements committed against species are increased if they are species threatened with extinction. This Law is currently regulated by Decree Num. 6,514, of 2008.

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[30] CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY. Thirteenth meeting, Cancun, Mexico, Dec. 2016. Available at: <https://www.cbd.int/conferences/2016/cop-13/documents> Accessed on 09 Jan. 2017.

[31] SECRETARIADO DA CONVENÇÃO SOBRE DIVERSIDADE BIOLÓGICA. *Panorama da Biodiversidade Global 4*. Montréal, 155 p. 2014. Available at <https://nacoesunidas.org/wp-content/uploads/2015/04/PNUMA_Panorama-Biodiversidade-Global-4.pdf> Accessed on 09 Jan. 2017.

39. Among the main Brazilian legislative instruments guiding the CBD are: Decree num. 1,354 of 1994, which creates the National Program of Biological Diversity - PRONABIO; Decree Num. 4,339 of 2002, which establishes the implementation of the National Biodiversity Policy; and Decree num. 4,703 of 2003, which provides for the National Biodiversity Commission - CONABIO. The creation of the National System of Conservation Areas (SNUC), through Law 9,985 of 2000 should be highlighted as well as the publication of Decree num. 5,092/2004, which defines rules for the identification of Priority Areas for Biodiversity Conservation, Sustainable Use and Sharing of Benefits from Biodiversity (Fig. 7).

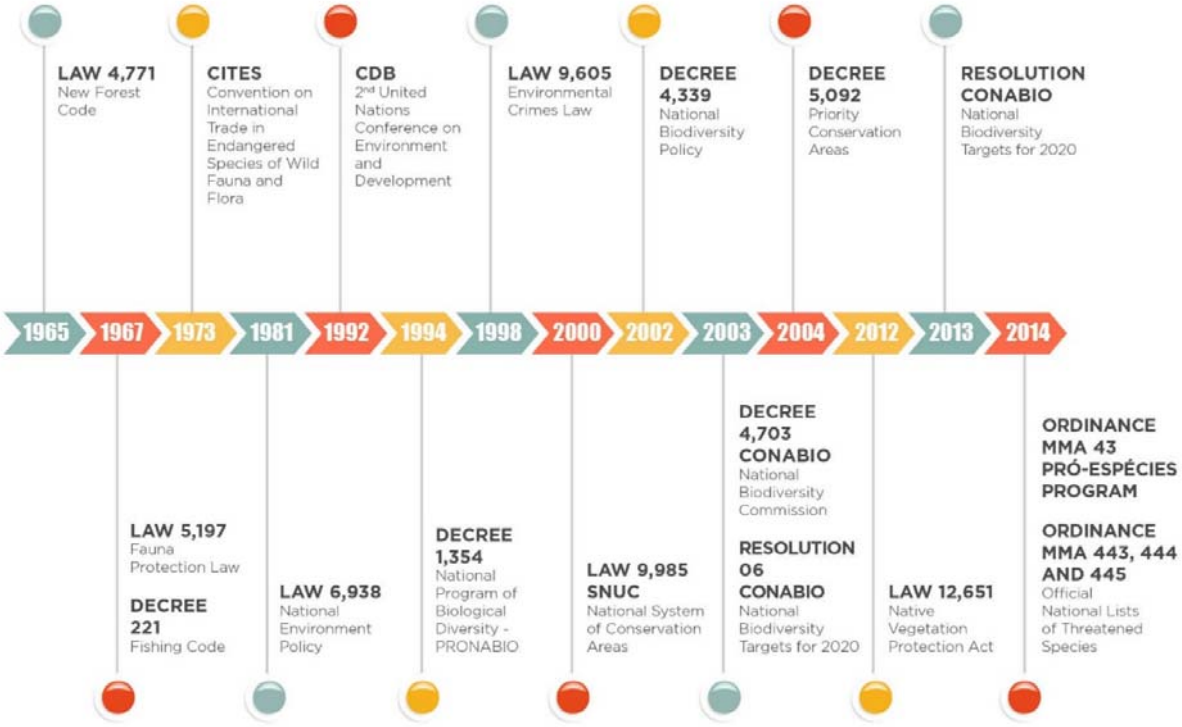

Figure 7. Timeline of conservation policies in Brazil

40. The construction of the current National System of Protected Areas (SNUC) was an important achievement for the country, considering that it includes numerous areas of extremely high biological importance. However, this instrument cannot be responsible alone for bearing all the pressure on the country's biodiversity. The limitations associated with the extension and representativeness of the protected area system (Fig. 8) make it so that the strategies for long-term conservation of Brazilian biodiversity require a more complex and scientifically based approach (FONSECA; PINTO; RYLANDS, 1997)[32], such as Law num. 12,651, of 2012, regarding the Protection of Native Vegetation. The amendments and revisions of the Forest Code of 1965 confirmed the need for landowners to conserve or recover part of the native vegetation on their property, the delimitation of which varies according to the size and geographical and topographical location of the property, favoring the species conservation.

41. The Ministry of Environment held between 1997 and 2000, for the first time, a broad consultation to "Assessment and Identification of Priority Areas and Actions for the Conservation of the Brazilian Biomes". The process, funded by GEF PROBIO I permitted to identify Priority Areas for Conservation, Sustainable Use and Sharing of Benefits from Biodiversity Brazilian (APCB) and list the main actions

[32] FONSECA, G. A. B.; PINTO, P. L.; RYLANDS, A. B. Biodiversidade e Unidades de Conservação. São Paulo: Conservation International do Brasil, 1997.

for biodiversity management. The Ordinance Num. 126, 27 May 2004, from the Ministry of the Environment, acknowledged the Priority Areas identified in this first exercise in prioritization[33].

42. In 2006 the process of updating the APCB was conducted. Technical meetings provided the subsidies for the regional seminars, which occurred between October and December 2006. The results were organized in a database and maps with the new Priority Areas recognized by Ordinance Num. 9, 23 January 2007[34], from the Ministry of the Environment.

43. The process of selection and identification of Priority Areas uses the approach called Systematic Conservation Planning (SCP) [35] that includes ecological concepts, such as representativeness, complementarity, efficiency, flexibility, vulnerability and irreplaceability, whereas the targets (of biodiversity, sustainable use and persistence targets and processes) and conservation goals, and seeks to introduce a number of areas that are the best option for conservation of certain targets with a lower cost for conservation. The determination of costs involves articulating the factors that facilitate and those ones that hamper the implementation of conservation actions in each of the planning units. The main results of the process are the identification of Priority Areas, classified on the priority of conservation, biological importance and urgency of action, and the recommendation of priority actions for each area. All stages of the process, from the choice of targets and goals to production of final maps, counted with the participation of experts, federal and State Government and civil society representatives, through a series of workshops performed for each biome and the coastal and marine zone.

44. Since 2012 is under way the APCB 2nd update process, and in 2016 were published the results of the updates to the biomes *Cerrado*, *Pantanal* and *Caatinga* (Ordinance num. 223, 21 June 2016). The procedures for updating the Priority Areas for the other biomes (Amazon rainforest, Atlantic forest and Pampa) and coastal and marine area are ongoing.

45. The Priority Areas for Conservation, Sustainable Use and Sharing of the Benefits of Biodiversity are an instrument of public policy to support decision-making, objectively and participatory, in the planning and implementation of actions such as creating protected areas, environmental licensing, supervision, recovery of degraded areas, promoting the sustainable use and other conservation actions, and are in line with the strategies recommended by the Convention of Biological Diversity (CBD).

46. In addition to the legal framework developed to support implementation of signed international agreements, Brazil has been increasing its efforts for the conservation and sustainable use of national biodiversity with notable results, such as reducing deforestation in the Amazon since 2005, the expansion of SNUC, especially between 1999 and 2009, and generating knowledge on biodiversity, as shown in the 5th National Report for the Convention on Biological Diversity, produced by MMA in 2016[36]. The assessment conducted for the preparation of this report was based on the most recent vegetation cover monitoring maps, results of studies and prioritization initiatives for biodiversity conservation, new policies and instruments for the implementation of the CBD, and conservation status assessments of Brazilian species.

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[33] MINISTÉRIO DO MEIO AMBIENTE. Biodiversidade Brasileira: Avaliação e Identificação de Áreas e Ações Prioritárias para Conservação, Utilização Sustentável e Repartição de Benefícios da Biodiversidade Brasileira. Brasília. Ministério do Meio Ambiente, Série Biodiversidade, 5, 2002, 404p. Available at: <http://www.mma.gov.br/estruturas/chm/_arquivos/Bio5.pdf> Accessed on 25 Apr. 2017.

[34] MINISTÉRIO DO MEIO AMBIENTE. Áreas Prioritárias para Conservação, Uso Sustentável e Repartição de Benefícios da Biodiversidade Brasileira: Atualização - Portaria MMA n°9, de 23 de janeiro de 2007. MMA, Secretaria de Biodiversidade e Florestas, Brasília, 2007.

[35] MARGULES, C.R.; PRESSEY, R.L. 2000. Systematic conservation planning. Nature 405: 243-253

[36] MINISTÉRIO DO MEIO AMBIENTE: 5º relatório nacional para a Convenção Sobre Diversidade Biológica / Secretaria de Biodiversidade e Florestas. Brasília: MMA, 2016; Available at: <http://www.mma.gov.br/publicacoes/biodiversidade/category/142-serie-biodiversidade?download=1212:relat%C3%B3rio-nacional-para-a-conven%C3%A7%C3%A3o-sobre-diversidade-biol%C3%B3gica> Accessed on 09 Jan. 2017.

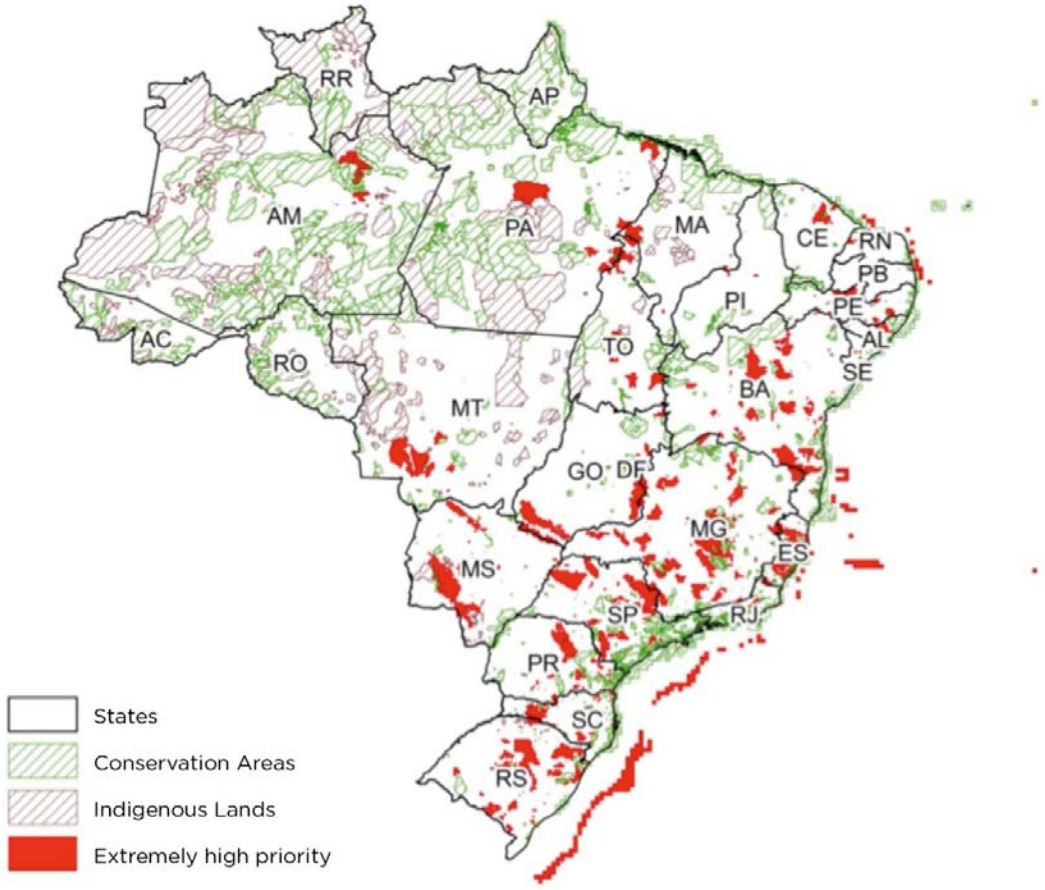

Figure 8. Map showing the Protected Areas included in the Conservation Areas National Register (CNUC), Indigenous Lands and the Areas of extremely high priority for threatened species conservation.

47. Despite the important results pointed out in the 5th National Report specifically for the achievement of Aichi Target 12, the assessment emphasizes that it is necessary to maintain and increase current efforts to achieve a significant reduction in the risk of extinction of Brazilian endangered species. With that, following a broad participatory consultation process involving government and civil society, the National Strategy and Plan of Action for Biodiversity (NBSAP) [37] was updated. As Brazil's contribution to the achievement of Target 17, this document presents information, actions and projects for the internalization of the Aichi Targets and the implementation of the National Biodiversity Targets for 2020, approved by the National Biodiversity Commission (CONABIO Resolution num. 6, September 2013[38]), replacing the National Targets for 2010 (CONABIO Resolution num. 03, of December 21, 2006[39]).

48. In order to promote the achievement of National Targets related to species conservation, the Brazilian NBSAP has defined as priority several actions, with emphasis on: a) assessment of the conservation status and species vulnerabilities; b) revise the National Threatened Species Lists; c) develop and implement the national action plans for the conservation of threatened species; d) assess the impact of international trade on endangered species; e) conserve the migratory wild animals species on a global

[37] MINISTÉRIO DO MEIO AMBIENTE: Estratégia e Plano de Ação Nacionais para Biodiversidade 2016-2020. Available at <https://www.cbd.int/nbsap/> Accessed on 09 Jan. 2017

[38]MINISTÉRIO DO MEIO AMBIENTE: Resolução CONABIO nº 6, de 03 de setembro de 2013. Available at: <http://portaldabiodiversidade.sp.gov.br/files/2014/06/Metas-Nacionais-CONABIO.pdf>

[39]MINISTÉRIO DO MEIO AMBIENTE: Resolução CONABIO nº 03, de 21 de dezembro de 2006. Available at: <http://www.mma.gov.br/estruturas/conabio/_arquivos/resolucaoconabio03_15.pdf > Accessed on 09 Jan. 2017.

scale; f) review and update the legal framework applicable to the prevention, control and monitoring of invasive alien species; g) evaluate the use of the main species affected by fishing activities; h) develop and implement recovery plans for threatened fish and aquatic invertebrates; i) evaluate and propose measures for the management of fishing activities with the goal of mitigating the by-catching of aquatic fauna and the sustainable use of stocks; j) strengthen the system for monitoring and producing information on fishing activities; and (k) promote and disseminate knowledge and sustainable use of species.

49. With regard to the achievement of the GSPC targets, Brazil has made important advances with the creation of the National Center for Conservation of Plants - CNCFlora, in 2008. The CNCFlora is an initiative of the Rio de Janeiro Botanical Garden Research Institute, originally established under the PROBIO II, with funding from the Global Environmental Fund (GEF), the goals and objectives of the CNCFlora were planned according to the targets of the GSPC, establishing a solid foundation for the integration of conservation of flora in Brazil.

50. The CNCFlora has been working mainly on five targets of the GSPC 2012: Target 1, online list of species of the Flora of Brazil; Target 2, assess the risk of extinction of the entire Flora known; Target 7, 75% of threatened plant species conserved *in situ*; Target 8, 75% of threatened plant species preserved in *ex situ* collections; Target 15, training of professionals in plant conservation and Target 16, networking of plant conservation[40]. These targets are in line with the legal demand that the MMA has assigned to the Rio de Janeiro Botanical Garden Research Institute– JBRJ, through Normative Act number 06/2008 (MMA 2008).

51. Not only the creation of the CNCFlora in 2008, but also the creation in 2007 of the Chico Mendes Institute for Biodiversity Conservation (ICMBio), both connected to the Ministry of the Environment of Brazil, enabled the achievement of remarkable advances in recent years in the policies of conservation and protection of threatened species in Brazil. The continuity of these efforts will, without a doubt, promote the significant implementation in Brazil of the the Aichi targets and revised targets of the GSPC, as well as of the National Biodiversity Targets, until 2020.

52. Additionally, in the species protection agenda, the Brazilian Alliance for Zero Extinction (BAZE)[41] was established in Brazil through MMA Ordinance num. 182, dated May 22, 2006, aiming to combine technical, scientific, financial and political capacities of national and international governmental and non-governmental organizations for the conservation and recovery of species listed in the Official National Lists of Threatened Brazilian Fauna and Flora Species. As a result of the work of BAZE, 32 AZE sites in Brazil (Fig. 9) were identified in 2010, covering 36 target species (12 species of fish, 9 amphibians, 2 reptiles, 8 birds and 5 mammals) and replicating, at a national level, the same objectives of the global Alliance for Zero Extinction (AZE) [42] initiative. The Atlantic Forest and the *Cerrado* concentrate the largest number of BAZE priority sites, with 16 sites in the Atlantic Forest and 8 in the *Cerrado*, followed by 4 in the *Caatinga* and 2 in the Amazon and the *Pampas*. In addition, 15 of the total sites, are in protected areas. Currently this work is being updated through the GEF Project - "Alliance for Zero Extinction (AZE): Conserving Earth's Most Irreplaceable Sites for Endangered Biodiversity", whose results will be integrated into this project.

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[40] SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE, SBSTTA. Convention on Biological Diversity, CBD. Technical Background Document in Support of the Mid-Term Review of the Global Strategy for Plant Conservation. UNEP/CBD/SBSTTA/18/INF/10. Montreau, 2014, 100 p. Available at: <https://www.cbd.int/doc/meetings/sbstta/sbstta-18/information/sbstta-18-inf-10-en.pdf> Accessed on 30 Mar. 2017

41 MINISTÉRIO DO MEIO AMBIENTE: Protocolo de intenções para a implementação no Brasil da Aliança brasileira para a extinção zero. Available at: <http://mma.gov.br/estruturas/179/_arquivos/179_05122008034606.pdf > Accessed on 09 Jan 2017.

42 ALLIANCE FOR ZERO EXTINCTION (AZE). Available at <http://www.zeroextinction.org/> Accessed on 09 Jan 2017.

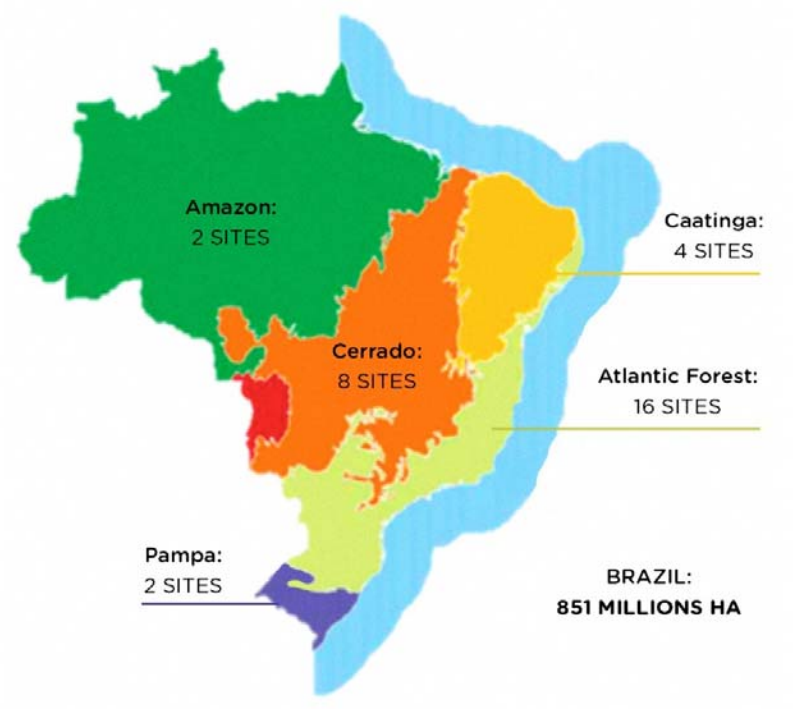

Figure 9. Map of the distribution of AZE sites in Brazil.

53. In order to organize and establish actions for prevention, conservation and management with the goal of minimizing threats and risks of national fauna and flora species extinction , the MMA established, through MMA Ordinance 43/2014, the National Conservation Program of Threatened Species - Pro-Species, which is the result of a joint effort between MMA, ICMBio and JBRJ and represents a major breakthrough in the harmonization of targets for the conservation of threatened species and the definition of responsibilities. The Program is based on three instruments: Official National Lists of Threatened Species; National Action Plans for the Conservation of Threatened Species (PANs); and Databases and information systems. Despite Brazil's advances in establishing a governance structure focused on environmental issues, it is still necessary to improve the coordination and implementation mechanisms of the Pro-Species program, considering the competence of each environmental institution to promote better articulation between the Union, States, Municipalities and the non-profit sector.

54. The lists of endangered species are, unquestionably, the basis for the initiatives to protect species, whether on a local, regional or global scale[43]. Municipal, state, and federal land use and occupation policies should take into account the presence of threatened species. Lists are a powerful tool that can be used as legal instruments for any level of action.

55. The National Lists were produced using the criteria and categories defined by the International Union for Conservation of Nature (IUCN) (Fig. 10), in accordance with national legislation and under the terms of the CBD. For the composition of the National Lists it is necessary to compile and systematize scientific research data on the species, which supports extinction risk assessments. The evaluations should be elaborated considering information on geographic distribution, main threat factors and the conservation state of the species and their habitats, at national and regional levels (MMA Ordinance 162/2016). As part of the scope of the Pro-Species Program, ICMBio and JBRJ, with the support of more than 1,500 experts evaluated all vertebrates, selected groups of invertebrates and seeded plants, covering more than 16,000 species. At the end of 2014, the MMA published the new Official National Lists of Threatened Species: MMA Ordinances 443/2014, 444/2014 and 445/2014. This represented a

[43] TABARELLI, M.; PINTO, L.P.; SILVA, J.M.C.d.; COSTA, R.C. Espécies ameaçadas e planejamento da conservação. In: GALINDO-Leal, C.; CÂMARA, I.d.G. MATA ATLÂNTICA: Biodiversidade, ameaças e perspectivas. Carlos Ibsen de Gusmão. São Paulo: Fundação SOS Mata Atlântica. p. 86-94. 2005.

200% increase from the previous Brazilian red list, which highlights the need for actions to reduce the species extinction risk.

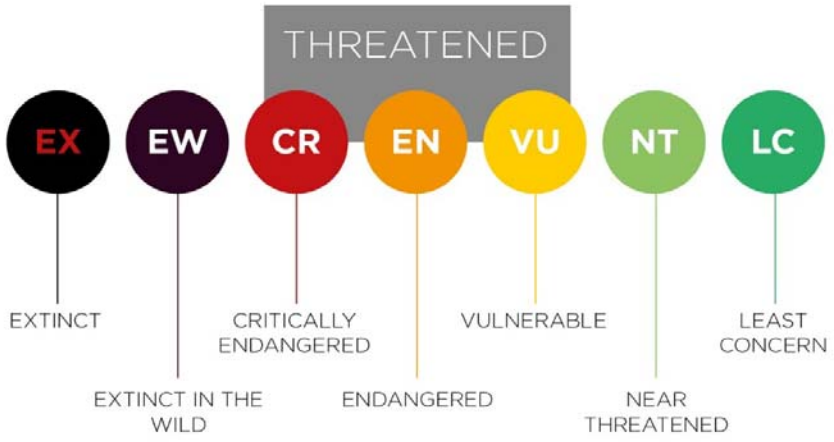

Figure 10. Threat categories, according to IUCN standards (EX: Extinct, EW: Extinct in the wild, CR: Critically endangered, EN: Endangered, VU: Vulnerable, NT: Near endangered, LC: Least concern).

56. The data raised during the elaboration of the National Lists subsidizes the MMA in developing regulations to restrict and prohibit the use of endangered species and allows for the identification of potentially involved productive sectors, which improves the planning process and implementation of the other instruments foreseen in the Pro-Species program, such as Action Plans for Conservation of Threatened Species (PANs) and information systems.

57. The PANs have been successfully developed in recent decades for species conservation. Their construction is an important prioritization exercise for establishing actions, in the medium and short term. In this process, a broad set of tasks are determined and formalized through an ordinance put forth by the competent environmental agency, ranging from local activities, such as environmental education, to national initiatives, as well as proposals to update regulations, with the purpose of reversing or minimizing the impact factors responsible for declining species populations or environmental degradation.

58. The GEF project "National Biodiversity Mainstreaming and Institutional Consolidation Project - PROBIO II" has promoted advances in species conservation programs. Before 2009, only 14 endangered species were covered by PANs. This increased to 901 species in the PROBIO II project and also support change for the territorial approach in PANs. Two other GEF projects - "Sustainable Cerrado Initiative" and "Effective Conservation and Sustainable Use of Mangrove Ecosystems in Brazil" also contributed to the design, monitoring and implementation of actions involving the biomes described in the PANs.

59. Brazil started implementing PANs in 2004 and adopted different methodological approaches for its effectiveness. The first method used was centered on individual species and a total of 17 PANs adopted this approach: such as the PANS for the Red-billed Curassow (*Crax blumenbachii*) (2004), jaguar (*Panthera onca*) (2010) and Wilson's Bean Tree (*Dimorphandra wilsonii*) (2014).

60. In order to increase the number of species that fall within the scope of PANs and to optimize planning, implementation and monitoring efforts, a group-focused approach has been proposed, adopting a taxonomic approach. This methodology was used in 17 PANs, among which are: Birds of Prey PAN (2006), PAN for Conservation of Cactaceae (2011) and PAN for the Conservation of Rivulid Fishes (2012).

61. Starting in 2009, the implementation of PANs has evolved with the inclusion of cooperation from local partners, taking a territorial approach (by biomes, ecosystems or regions), while maintaining the taxonomic division. There are currently 17 PANs following this format, such as the Action Plan for Atlantic Forest Parrots (2010), Herpetofauna in Southeast Brazil (2011) and Northeast Primates (2011).

Three other PANs were developed using the ecosystem approach, as exemplified by the Corals PAN (2014).

62. The territorial approach is one of the most recent methodologies used in PANs and addresses all fauna or flora endangered species within the same territory. This approach was adopted in different formats in four PANs, among which are the PANs for the Paraíba do Sul River (2010) and the Endangered Flora of the southern Espinhaço Mountain Range (2015).

63. By 2015 a total of 58 PANs were elaborated, 52 for fauna and six for flora, contemplating 27% of the currently recognized threatened species. Currently, there are about 4,000 actions planned under these PANs, of which 52% are completed or in the implementation phase. The Brazilian effort to develop and implement the PANs was recognized by the CBD Secretariat, which provided a complete list of PANs and species covered by PANs [44].

64. The territorial PAN model optimizes efforts and resources, since it benefits all the threatened species that occur in a target territory. It also contemplates species with little scientific knowledge or even those that are not yet known by science. In addition, the territorial approach permits consideration of socioeconomic aspects of the target region, which results in the planning of actions that are more feasible and compatible with the local reality. This new PAN model is part of the national strategy for the implementation of the Pro-Species Program, including extending its use to other conservation tools, such as recovery plans for threatened species, fishing exclusion areas, protected areas and management plans.

65. The effort invested in recent years has considerably broadened the performance of threatened species conservation policies in Brazil. Approximately 75% of currently recognized threatened species are protected by some conservation measure (Fig. 11). Among the 2,113 currently recognized species of threatened plants, 1,495 species (71%) occur at least once in a Protected Area and 403 species (19%) have PANs, with 303 species (14.5%) benefiting by both initiatives. Of the 1,173 currently recognized threatened animal species, 765 (65%) occur at least once in Protected Areas and 498 species (42.5%) are contemplated by at least one PAN, with 399 (34%) benefiting from both initiatives.

[44] SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE, SBSTTA. Convention on Biological Diversity, CBD. Updated Assessment of Progress Towards Aichi Biodiversity Target 12. UNEP/CBD/SBSTTA/20/INF/44. Montreal, Canadá, 2016, 61 p. Available at: <https://www.cbd.int/doc/meetings/sbstta/sbstta-20/insession/sbstta-20-l-01-en.pdf>

Figure 11. Graphs with the percentage of threatened fauna and flora species contemplated by conservation actions in Brazil.

66. The Atlantic Forest biome contains the largest number of species contemplated by conservation plans, accounting for 49% of all threatened species, followed by the *Cerrado* (27%), *Caatinga* (8%), Amazon (7%) and Marine Environments (5%) (Fig.12).

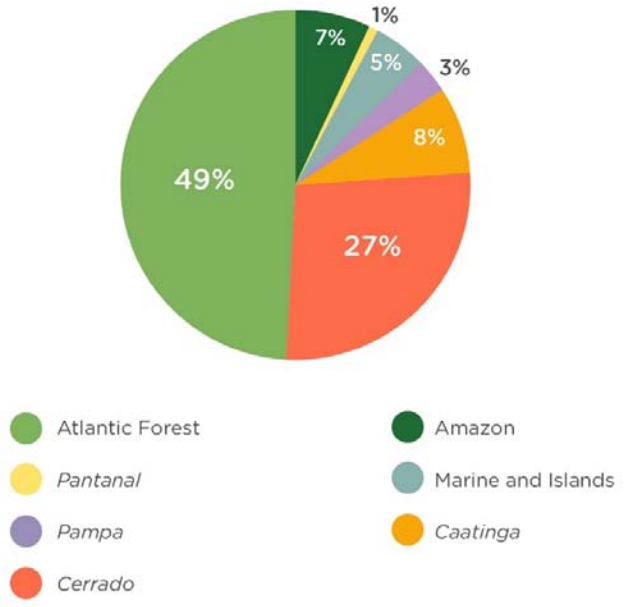

Figure 12. Graph with the percentage of threatened species by biome that have protection mechanisms.

67. Despite of the efforts made by the Brazilian government to conserve threatened species, the number of species with no associated conservation action, hereafter called Gap-species, is still significant (Table 2). Currently, there are 836 Gap-species, with 267 animal species and 569 plant species.

68. When analyzing the number of Gap-Species per biome, we can see that the Atlantic Forest biome has the largest number (504), with 199 CR Gap-species, 232 EN Gap-species and 73 VU Gap-species, followed by the *Cerrado* (197) with 63 CR Gap-species, 79 EN Gap-species and 55 VU Gap-species.

Table 2. Threatened Gap-species by biome and threat category*

Biome	CR	EN	VU	Total
Amazon	19	20	25	64
Pantanal	2	4	6	12
Marine and Islands	8	6	6	20
Pampa	27	46	19	92
Caatinga	19	31	18	68
Cerrado	63	79	55	197
Atlantic Forrest	199	232	73	504

*Some species are naturally distributed in more than one biome

69. The CR category represents "species that are facing an extremely high risk of extinction in the wild"[45], so if no conservation action is taken, they have an imminent risk of extinction. With this concern, it is necessary to take protective measures to ensure the maintenance of these species.

70. Currently, a total of 318 CR-Gap species are recognized, of which 93 are of fauna and 225 are of flora. Habitat loss and degradation threaten 76 species CR-Gap of fauna and 168 of flora; 12 species of fauna and 20 of flora are affected by direct extraction; Invasive alien species threaten 9 species of fauna and 17 species of flora; and unknown causes affect one species of fauna and 35 of flora. It is observed that some species are affected by more than one threat simultaneously, and data may overlap.

Knowledge management

71. The GEF Project "Improving Brazilian Capacity to Conserve and Use Biodiversity through Information Management and Use" was formulated to support the development of an electronic database system of Brazilian species and environmental research projects, called "Brazilian Biodiversity Information System (SIBBr) ". In addition, the Biodiversity Portal[17] was launched to integrate biodiversity databases, including SIBBr, and to make information on Brazilian biodiversity available to society. This portal was supported by the GEF project "PROBIO II" and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) project "Climate relevant Biodiversity Monitoring at the Conservation Areas (UCs) level". These online systems help to manage information generated about biodiversity and maintain a database to support researchers and decision-makers in assessing the risk of species extinction and establishing science-based conservation plans, indicating areas where other management and protection measures are required.

72. The Pro-Species program, as mentioned before, calls for the establishment, updating and integration of databases and information systems as tools for conservation, so that decisions regarding conservation necessarily involve good information management and are founded on robust information. The program aims to comply with global initiatives, such as GBIF[46] and GBIO[47], to promote the mobilization, access, use and analysis of primary data and provision of relevant information on biodiversity for managers and decision makers.

[45] INTERNATIONAL UNION FOR CONSERVATION OF NATURE. IUCN Red List Categories and Criteria: Version 3.1. Second edition. Gland, Switzerland and Cambridge, UK: IUCN. 2012.
[46] GLOBAL BIODIVERSITY INFORMATION FACILITY, GBIF. Available at <http://www.gbif.org/what-is-gbif> Accessed on 07 Apr. 2017
[47] GLOBAL BIODIVERSITY INFORMATICS OUTLOOK, GBIO. Available at <http://www.gbif.org/resource/80859> Accessed on 07 Apr. 2017

73. Currently, information on endangered fauna and flora species as well as information on action plans are stored in different systems or bases at the ICMBio and the JBRJ, respectively, which makes aggregating the information and carrying out general or specific analyses about threatened species difficult.

74. Whilst these initiatives represent important advances in the management of biodiversity knowledge, it is critical that information on target species be standardized and digitally accessible to facilitate species assessment and Action Plans development and monitoring. Thus, further efforts are needed to integrate the different existing databases; improve tools for robust data management, access and reporting to support policies and management; update databases that are required by law; and develop the capacity to improve decision-making processes and planning tools.

75. Therefore, it is important to create an integrated center for synthesis and analysis of biodiversity information, capable of leveraging the full potential of recent data systematization and digitization efforts (Table 3), aiming for integration of the information resources available in digital format. In addition, this information should be available on an integrated online platform to guide management actions and also enable cross-referencing of the information about the species with those resulting from the implementation of other public policies, such as the Rural Environmental Registry (CAR), of the Priority Areas and Actions for Brazilian Biodiversity Conservation, Sustainable Use and Benefit-sharing, of the Monitoring of Biodiversity in Protected Areas, and information resulting from the increasing availability of Camera Trap images and recordings of songs and calls of birds and Amphibians. These features will be available from enhancement of the Portal of Biodiversity (PortalBio) and integration with SiBBR.

Table 3. Systems and databases for biodiversity in Brazil

System	Description
Brazilian Flora 2020 [48]	*Object*: Official list of Brazilian flora species associated with synonyms, information on morphological characteristics and identification keys *Weakness*: Sustainable maintenance and evolution of the system. *Current products*: Brazilian Flora list, flora identification keys and link with the Virtual Herbarium *Reflora*.
Virtual Herbarium (Reflora)[49]	*Object*: To facilitate the access to exsicates of Brazilian plants existing in herbariums in Brazil and abroad through online availability of high resolution images. *Weakness*: Sustainable maintenance and evolution of the system. *Products*: High resolution images of exsicates of Flora do Brasil in herbaria from Brazil and abroad
Fauna Catalogue [50]	*Object*: Taxonomic List of the Brazilian fauna. *Weakness*: Sustainable maintenance and evolution of the system. Lack of management capacity. Data on endemisms need urgent review and supplementation. *Current Products*: List of the Brazilian Fauna.
Biodiversity Portal[51]	*Object*: Aggregator of Brazilian fauna and flora collection records. *Weakness*: Limited information access for users. *Products*: Species distribution maps, collection records
SISPAN (ICMBio)[52]	*Object*: Wildlife Action Plans Monitoring (under development). *Weakness*: Sustainable maintenance and evolution of the system. *Products*: Execution matrix, monitoring matrix, management panel

[48]FLORA DO BRASIL 2020. Jardim Botânico do Rio de Janeiro. Available at: <http://floradobrasil.jbrj.gov.br/> Accessed on 09 Jan 2017.

[49] HERBÁRIO VIRTUAL (Reflora). Available at: http://reflora.jbrj.gov.brhttp://reflora.jbrj.gov.br/> Accessed on 09 Jan 2017.

[50] CATÁLOGO DA FAUNA. Available at <http://fauna.jbrj.gov.br/> Accessed on 09 Jan. 2017.

[51] PORTAL DA BIODIVERSIDADE. Available at https://portaldabiodiversidade.icmbio.gov.br/portal Accessed on Jan. 2017.

[52] SISTEMA DE PLANO DE AÇÃO NACIONAL, SISPAN. Available at <http://sispan.cemave.net/> Accessed on 09 Jan 2017.

SISBIO[53]	*Object*: Permit authorizations to collect biological material and to undertake research in federal protected areas and caves. *Weakness*: Limited information access for users. Products: Gather information on threatened fauna and flora, occurrence records from various initiatives.
CNCFLORA Portal[54]	*Object*: Evaluation of the flora conservation status and elaboration and monitoring of National Action Plans *Weakness*: Sustainable maintenance and evolution of the system. *Products*: List of Brazilian Threatened Flora,

Public Policies for Conservation

76. As pointed out in the GBO4 and baseline studies, in order to comply with Target 12, investment in measures that reduce the impact on species is necessary, especially in public policies associated with identified threats. It is necessary to ensure that sectorial and intersectorial policies, plans and programs, as well as administrative and budgetary measures established by the government integrate actions for conservation, sustainable use, management and restoration of biological diversity and ecosystems in a structured and coherent way. In addition, there should be incentives for sectors that rely on or impact biodiversity to cover conservation and sustainable use and the fair and equitable sharing of benefits arising from the use of genetic resources[55].

77. Brazil adopts various economic and legal policies that promote the development of agriculture and infrastructure, which are the two of the greatest threats to biodiversity. Nevertheless, there are some regulations to promote the sustainable use of species and their environments that allow for the involvement of the private sector to act in environmental conservation, with emphasis to environmental licensing, environmental regularization of rural properties and social income transfer programs with environmental conditionalities, such as the Bolsa Verde Program.

78. In this sense, one of the public policies that requires adjustments to better promote the conservation of threatened species is the environmental licensing process. Although the rules require studies and adoption of mitigation measures when threatened species are affected by the construction, expansion and operation of establishments and activities that use environmental resources, considered to be polluting or potentially polluting, the current lack of guidance for licensing institutions to require these measures for threatened species can be an obstacle. To date, there is only one guideline on migratory birds[56] and one guideline on wind power projects published in Brazil.

79. Another set of public policies in progress in Brazil focuses on the environmental regularization of rural properties, which can be implemented through recovery, regeneration or compensation of areas, in accordance with the requirements of the Native Vegetation Protection Law of 2012 and with commitments assumed by Brazil (Brazil's NDC) at the United Nations Conference on Climate Change - Paris 2015 (COP21). This effort is expected to affect 12 million hectares in all Brazilian biomes. Given the magnitude of this initiative, the work should be done gradually and it is important to integrate this effort to conserve species and, therefore, prioritize relevant areas to endangered species in the process of forest restoration and protection of native forests. To this end, the two resource tools adopted by Brazil are the Rural Environmental Registry (CAR) [57] and the National Plan for the Recovery of Native Vegetation (PLANAVEG) [58].

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[53] SISTEMA DE AUTORIZAÇÃO E INFORMAÇÃO EM BIODIVERSIDADE, SISBIO. Available at <http://www.icmbio.gov.br/sisbio/> Accessed on 09 Jan. 2017.

54 PORTAL CENTRO NACIONAL DE CONSERVAÇÃO DA FLORA. Available at <http://cncflora.jbrj.gov.br/portal> Accessed 09 Jan 2017.

[55] CONFERENCE OF THE PARTIES (COP 13), Cancun declaration on mainstreaming the conservation and sustainable use of biodiversity for well-being, Cancun, Mexico. 3th Dec., 2016.

[56] INSTITUTO CHICO MENDES DE CONSERVAÇÃO DA BIODIVERSIDADE. Relatório Anual de Rotas e Áreas de Concentração de Aves Migratórias no Brasil. Available at <http://www.icmbio.gov.br/portal/ultimas-noticias/4-destaques/6726-icmbio-disponibiliza-relatorio-sobre-aves-migratorias>. Accessed on 03 Feb. 2017.

[57] CADASTRO AMBIENTAL RURAL, Available at <www.car.gov.br> and

80. It should be noted that the Bolsa Verde Program[5960] is an inter-ministry social public policy aimed at transferring income to families living in extreme poverty in areas of relevance to environmental conservation. It works as an incentive for communities to continue using territories in which they live in a sustainable way. Currently, families living in extreme poverty in forest environments can receive financial support from the Program to avoid environmentally harmful practices such as deforestation, mining and hunting. The areas selected today to receive this support are restricted to federal protected areas and human settlements, where activities compatible with natural resources conservation can be developed. The refinement of this initiative is an opportunity to implement this policy in other areas relevant to the conservation of threatened species and to guide the reduction of pressure by local communities, while offering subsidies against extreme poverty.

81. Besides these, other public policies that may generate positive effects for threatened species conservation are mentioned below.

Wildlife surveillance and monitoring

82. Responsibility for environmental crimes in Brazil is attributed to the administrative and criminal spheres, and sometimes to the civil sphere as well. Prior to Complementary Law Num. 140/2011, IBAMA was the sole agency responsible for administrative accountability. After the Complementary Law, not only IBAMA, but also the state agencies act in the notification of environmental offenders by making them administratively responsible. As an unintended side effect, the records of offenders are now scattered throughout the 27 states, making the federal registry increasingly out of date in terms of new offenders and crimes committed. IBAMA has developed a database on the most important traffickers on a national scale based on their system, which unified all environmental infraction assessments until 2011. This intelligence analysis is becoming increasingly outdated or impossible to carry out without the existence of a unified national system. As a consequence, it is also difficult to identify the antecedents of environmental crimes unless they were committed in the same state and assessed by the same environmental body.

83. Among the legal instruments that provide guidelines for supervisory actions, is the Law num. 9,605/98 on Environmental Crimes, which provides for the criminal penalties and administrative specifications derived from conduct and activities damaging to the environment, with further penalities in cases involving threatened species. The resources from criminal sanctions applied against environmental crimes are intended for the protection of fauna and mitigating the damage caused, with effective results for the conservation of biodiversity, including threatened or migratory species. Such actions are taken thanks to the Portfolio for the Conservation of Brazilian Fauna and Fisheries Resources - Fauna Brazil Portfolio (a result of a partnership between Funbio, Ibama, ICMBio and the Federal Public Prosecution Service), which is a financial mechanism designed to receive resources from criminal sanctions, administrative fines and donations, and invest directly in projects for the protection of wildlife and fisheries resources.

84. Notwithstanding, estimates indicate that trafficking of wild animals is responsible for the removal of about 38 million specimens from nature in Brazil per year. The number of animals removed is much

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BRASIL: Decreto nº 7.830, de 17 de outubro de 2012, Available at <http://www.planalto.gov.br/CCIVIL_03/_Ato2011-2014/2012/Decreto/D7830.htm> Accessed on 09 Jan 2017.

[58] PLANO NACIONAL DE RECUPERAÇÃO DA VEGETAÇÃO NATIVA, Available at <http://www.mma.gov.br/images/arquivo/80049/Planaveg/PLANAVEG_20-11-14.pdf> Accessed on 09 Jan 2017. BRASIL: Decreto nº 8.972, de 23 de janeiro de 2007. Available at <http://www.planalto.gov.br/ccivil_03/_Ato2015-2018/2017/Decreto/D8972.htm> Accessed on 09 Jan 2017.

[59] BRASIL: Decreto nº 7.572, de 28 de setembro de 2011. Programa de Apoio à Conservação Ambiental - Programa Bolsa Verde. Available at <http://www.planalto.gov.br/ccivil_03/_Ato2011-2014/2011/Decreto/D7572.htm> Accessed on 09 Jan. 2017.

[60] VIANA, J. P. Leveraging Public Programmes with Socio-Economic and Development Objectives to Support Conservation and Restoration of Ecosystems: The Price-Support Policy for Socio-Biodiversity Derived Products and the Green Grant Programme of Brazil. 2015Available at: <https://www.cbd.int/ecorestoration/doc/Brazil-case-study-Final-Version-20150114.pdf>

higher than that found for sale, due to losses that occur throughout the capture, transport and commercialization process. It is estimated that for each animal product sold, at least three specimens are killed; and for the trade of live animals this index is even higher, only one out of every 10 animals trafficked survives[61]. Enforcement of fauna protection requires specific knowledge that surpasses operational know-how or just the federal or state laws that regulate the subject. There are specific ordinances and normative instructions that regulate the criminal laws, which makes them crucial in identifying if the activity is illegal or not. Identification of the specimens themselves should not only depend on expert analysis, but the Inspection Agent or police officer should be able to distinguish between native wildlife species, alien wildlife species or domestic species, in addition to recognizing the most trafficked species. Without such knowledge, abuse of authority can occur if an act is considered illegal when it is not or omission can occur when uncertainty makes the enforcement officer chooses not to act.

85. Laws and regulations are essential for the control and repression of illegal hunting and trafficking, but it is essential to develop educational, engagement and awareness-raising work in society as well. The fact that Brazilian rural populations are closer to wildlife and that there is a general lack of knowledge about the problems associated with illegal trade and the loss of biodiversity, means that there is little or no popular participation in conservation activities. People need to understand the consequences of these actions and why the existence of laws and legal provisions alone is not enough to solve this problem. Communities that are close to the wild are key in the fight against hunting, illegal extractive activities and the illegal trafficking of wild fauna and flora. Because of their knowledge and their proximity to the natural environment, these communities are well placed to be tempted to participate and contribute to the illegal harvesting and trade. On the other hand, the same characteristics mean that these populations are also well positioned to detect, report and help prevent the illegal trafficking of wild fauna and flora. These communities are diverse: socioeconomic factors, political, legal and environmental influence the nature of interactions with nature; as well as, their perceptions and attitudes regarding the illegal trade in wild species[62]. In this way, it should be recognized the central role of communities living close to wildlife in approaches to prevent and combat illegal extractive activities and the illegal trafficking of wild fauna and flora, recognizing the distinction between trafficking and illegal trade, and the legitimate and sustainable use of biodiversity resources for subsistence of traditional and local communities. Awareness and engagement initiatives to combat trade and illegal trade in wild fauna and flora in local communities, must respect and respond to a community, its needs and priorities to achieve the effectiveness of actions[63]

86. Also in relation to the monitoring of wild animals, the Brazilian Center for Road Ecology Research (CBEE)[64] has an initiative to gather, systematize and make available information on wildlife mortality on highways and railroads, through the Urubu System, and has the objective of assisting the government and the transport concessionaires in the decision-making process to reduce these impacts. The CBEE estimates that more than 15 animals die on Brazilian roads every second. More than 1.3 million animals are expected to die every day and by the end of a year, it is estimated that up to 475 million wild animals may have been hit in Brazil. In order to meet this demand, the Ministry of Transportation, Ports and Civil Aviation (MT) and the National Department of Transport Infrastructure (DNIT) are developing the Roadkill Monitoring and Mitigation Program (*Programa de Monitoramento e Mitigação*

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[61] REDE NACIONAL DE COMBATE AO TRÁFICO DE ANIMAIS, RENCTAS. Primeiro Relatório Nacional sobre o Tráfico de Animais Silvestres. Available at: <http://www.renctas.org.br/trafico-de-animais/> Accessed on 20 Jan. 2017.

[62] BIGGS D, COONEY R, ROE D, et al. Engaging local communities in tackling illegal wildlife trade: Can a 'Theory of Change' help? International Institute for Environment and Development, London. 2015. Available at: http://pubs.iied.org/14656IIED Accessed on 06 Apr. 2017

[63] IUCN SULi, IIED, CEED, Austrian Ministry of Environment and TRAFFIC. Symposium Report, 'Beyond enforcement: communities, governance, incentives and sustainable use in combating wildlife crime', 26-28 February 2015, Glenburn Lodge, Muldersdrift, South Africa. Available at: http://pubs.iied.org/G03903/?a=I+SULi Accessed on 06 Apr. 2017.

[64] CENTRO BRASILEIRO DE ESTUDOS EM ECOLOGIA DE ESTRADAS, CBEE. Available at: <http://cbee.ufla.br/portal/atropelometro/> Accessed on 20 Jan. 2017.

dos Atropelamentos de Fauna). This initiative brings together a set of solutions agreed between the DNIT and the licensing body and implemented during construction work on each highway, including protection devices such as fences, wildlife corridors and signs. In the operation phase, campaigns are carried out to raise awareness of highway users to increase preventive management behavior in relation to fauna. Fauna monitoring and roadkill data are also collected during this phase[65].

87. The National Plan for Biodiversity (Decree 4,339/2002)[66] aims to integrate initiatives, plans and programmes for conservation, including *ex situ* species conservation, with emphasis on threatened species and species with potential for economic use; as well as, to create and strengthen Screening Centres of Wild Animals (Cetas, *Centros de Triagem de Animais*) and wild plants, integrating them into the system of zoos and botanical gardens, to transform them into conservation centres of fauna and flora. The Cetas (Ordinance num. 169/2008)[67] are units of IBAMA acting upon receipt, identification, marking, sorting, valuation, recovery, rehabilitation and distribution of wild animals removed from their natural environment, in addition to performing and subsidizing scientific research, education and extension. Zoos, museums, aquariums and botanical gardens are singled out as instruments of conservation, education and research involving the knowledge of the diversity of plant and animal species [68].

88. In regard to monitoring deforestation of Brazilian biomes, the Biodiversity Secretariat of the Ministry of the Environment (SBF/MMA) has been working through the Brazilian Biome Deforestation Satellite Monitoring Project (PMDBBS)[69], with initial financial support from the United Nations Development Programme (UNDP) and under technical cooperation with IBAMA. Deforestation monitoring allows for greater efficiency of the public policies focused on conservation and sustainable use of these biomes as well as of the enforcement and control of the application of pertinent environmental legislation.

89. In addition to national initiatives, Brazil participates in international initiatives such as the "Supporting the implementation of the EU FLEGT Action Plan in South America: Catalyzing initiatives to control and verify the origin of timber in trade and support related improvements in forest governance"[70], an initiative of the European Union in collaboration with The Wildlife Trade for Monitoring Network, TRAFFIC[71], WWF Colombia and IUCN-South America. Brazil participates through computerized control systems, which have evolved to provide greater transparency and access by stakeholders, resulting in a vanguard system to be reviewed and considered for adoption by other countries. Forest cover loss monitoring in Brazilian biomes is carried out by satellite images.

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[65] MINISTÉRIO DOS TRANSPORTES. Monitoramento e mitigação de atropelamento da fauna. Departamento Nacional de Infraestrutura de Transportes. Coleção Estrada Verde 1/3. Brasília, 2012. Available at: <http://www.dnit.gov.br/download/meio-ambiente/colecao-estrada-verde/monitoramento-e-mitigacao-de-atropelamento-de-fauna.pdf> Accessed on 20 Jan. 2017.

[66] BRASIL, Decree 4339, Aug. 2002. National Plano f Biodiversity, Plano Nacional de Biodiversidade. Available at: <http://www.mma.gov.br/port/conama/legiabre.cfm?codlegi=363> Accessed on 03 Apr. 2017.

[67] IBAMA, IN 169, Feb. 2008. Regulates the categories of use and management of wild fauna in captivity in Brazilian territory. Available at: <http://www.icmbio.gov.br/sisbio/images/stories/instrucoes_normativas/IN%20n%20169%20manejo%20ex%20situ.pdf> Accessed on 03 Apr. 2017.

[68] PIVELLI, S. R. P.; KAWASAKI, C. S. Análise do potencial pedagógico de espaços não formais de ensino para o desenvolvimento da temática da biodiversidade e sua conservação. In: Encontro Nacional de Pesquisadores em Educação em Ciências, 5., 2005, Bauru. Bauru: ABRAPEC, 2005. Available at: <http://www.nutes.ufrj.br/abrapec/venpec/conteudo/artigos/1/pdf/p674.pdf>. Accessed on 03 Apr. 2017

[69] INSTITUTO BRASILEIRO DO MEIO AMBIENTE E DOS RECURSOS NATURAIS RENOVÁVEIS (IBAMA). Projeto de Monitoramento do Desmatamento dos Biomas Brasileiros por Satélite (PMDBBS). Available at <http://siscom.ibama.gov.br/monitora_biomas/> Accessed on 20 Jan. 2017.

[70] EUROPEAN FOREST INSTITUTE (EFI). Forest Law Enforcement, Governance and Trade, FLEGT: Action Plane. Available at <http://flegt.info/en/home/> Accessed on 20 Jan. 2017.

[71] THE WILDLIFE TRADE FOR MONITORING NETWORK (TRAFFIC). Available at <http://www.traffic.org/> Accessed on 20 Jan. 2017.

90. Other initiatives and projects are included in the FLEGT program, in addition to the PMDBBS Project[72]. For the Amazon Biome, the National Institute for Space Research (INPE / MCT) operates four systems: Amazon Deforestation Calculation Program (PRODES)[73]; Real Time Deforestation Detection System (DETER)[74] and Mapping of Forest Degradation in the Brazilian Amazon (DEGRAD)[75]. These systems are complementary and are designed to meet different goals. For the Atlantic Forest biome, monitoring is carried out by SOS Mata Atlântica, in partnership with INPE, through images from the China-Brazil Earth Resources Satellite (CBERS) and LANDSAT (NASA Program). All these deforestation monitoring initiatives allow for greater efficiency of public policies focused on conservation and sustainable use of these biomes as well as the enforcement and control of the application of pertinent environmental legislation.

Invasive Alien Species

91. In relation to invasive alien species that affect biodiversity, the CBD recommends a regulatory framework for countries whereby information availability, risk analysis, early detection and training tools should be developed to build and implement measures to ensure safe prevention of invasive alien species[76]. Brazil imported the guiding principles of Decision VI/23[77] and VIII/27[78], through the establishment of the national strategy on invasive alien species[79], which establishes guidelines and priority actions for addressing biological invasions in Brazil.

92. Aiming to stablish a baseline, the MMA, through the GEF project "PROBIO - National Biodiversity Project", carried out the first national survey of invasive alien species in the country[80] [81]. ICMBio also invested in pilot projects that allowed for the development and implementation of plans to control invasive alien species in some protected areas. IBAMA, in turn, regulated the management and control

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[72] INSTITUTO BRASILEIRO DO MEIO AMBIENTE E DOS RECURSOS NATURAIS RENOVÁVEIS (IBAMA). Projeto de Monitoramento do Desmatamento dos Biomas Brasileiros por Satélite – PMDBBS. Available at: Accessed on 03 Apr. 2017

[73] INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS. Projeto PRODES, Monitoramento da Floresta Amazônica Brasileira por Satélite. Available at: <http://www.obt.inpe.br/prodes/index.php> Accessed on 03 Apr. 2017

[74] INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS (INPE). Sistema Detecção de Desmatamento em Tempo Real, DETER. Available at: <http://www.obt.inpe.br/deter/> Accessed on 03 Apr. 2017

[75] INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS. Mapeamento da Degradação Florestal na Amazônia Brasileira, DEGRAD. Available at: <http://www.obt.inpe.br/degrad/> Accessed on 03 Apr. 2017

[76] CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY (COP13). Cancun, Mexico, Dec. 2016. Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity. Invasive alien species: addressing risks associated with trade, experiences in the use of biological control agents, and decision support tools. Available at <https://www.cbd.int/doc/c/47f1/1647/07f617de2484f9fbcdb61c7d/cop-13-dec-13-en.pdf> Accessed on 20 Jan. 2017.

[77] CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY (COP13). Decision VI/23: Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats or Species.

[78] CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY (COP13). Decision VIII/27: Alien species that threaten ecosystems, habitats or species (Article 8 (h)): further consideration of gaps and inconsistencies in the international regulatory framework.

[79] MINISTÉRIO DO MEIO AMBIENTE. Resolução CONABIO nº 05, de 21 de outubro de 2009. Dispõe sobre a Estratégia Nacional sobre Espécies Exóticas Invasoras.

[80] CORADIN, L.; TORTATO, D.T. 2006. Espécies exóticas invasoras: situação brasileira. Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas, MMA, Brasília, 2006. 24p. Available at: <http://www.mma.gov.br/estruturas/174/_publicacao/174_publicacao17092009113400.pdf> Accessed on 03 Apr. 2017

[81] LOPES, R.M. (ed.). Informe sobre as espécies exóticas invasoras marinhas no Brasil. Série Biodiversidade. Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas, MMA, Série Biodiversidade, 33, Brasília, 2009. 440 p. Available at: <http://www.mma.gov.br/estruturas/sbf2008_dcbio/_publicacao/147_publicacao07072011012531.pdf> Accessed on 03 April. 2017

of wild boar (*Sus scrofa*) and established an inter-agency commission to evaluate the effectiveness of this management. IBAMA is also responsible for analyzing and authorizing the importation and introduction of alien species that may affect biodiversity.

93. With a view to develop tools for the definition and implementation of actions on the control and mitigation of impacts of invasive alien species already established in the country, the MMA has been working on the development of national plans for the prevention, control and monitoring of invasive alien species". For the preparation of these Plans was considered the model and methodology of "National Action plans for the conservation of threatened species-PAN", as the Ordinance nº 43, MMA 31 January 2014. The plans are instruments of participatory management aiming at the coordination and integration of actions and initiatives. In 2016, the MMA coordinated in conjunction with the MAPA and with the support of IBAMA and the ICMBio, the "National Plan for the Prevention, Monitoring and Control of the wild boar (*Sus scrofa*) in Brazil". In addition, the MMA is working on drawing up the "National Plan for the Prevention, Control and Monitoring of Sun coral (*Tubastrea coccinea* and *Tubastrea tagusensis*)", with the participation of experts and other interested actors.

94. When it comes to unintentional introductions, Brazil has regulations for ballast water management, 'NORMAN-20/DPC18', established by the Maritime Norms Authority, aligned with the Convention on Ballast Water Management that will come into force this year (2017). Even so, other maritime structures function as vectors of species introduction. Sun coral (*Tubastrea* spp.) for example, was introduced to various points along the Brazilian coast by incrusting on oil rigs, threatening the survival of native corals and invertebrates in rocks and coral reefs.

95. The Ministry of Agriculture, Livestock and Food Supply (MAPA), through the Agricultural Defense Secretariat (SDA) has a comprehensive legal and institutional framework to control the entry and dissemination of agricultural pests, but without strong link to biological diversity protection. Likewise, the Ministry of Health (MS), through the National Agency of Sanitary Surveillance (ANVISA), adopts established standards to prevent outbreaks, epidemics and public health damage caused by exotic pathogens. The inclusion of criteria to protect biological diversity in these systems would be a significant gain for the country, this integration should be pursued.

96. Although identified in the National Strategy for Invasive Alien Species[82] published in 2009, protocols for risk assessment of biological invasion still require further development. Especially relevant are the protocols developed and implemented by Embrapa, based on FAO's protocols, for analysis of environmental risk for introduction of biological control agents of agricultural pests by Embrapa Environment and risk assessment protocols for introduction of Genetically Modified Organisms (GMOS) in the country required by National Technical Biosafety Commission (CTNBio) in compliance with the rules of the Cartagena Protocol on Biosafety of the CBD and those developed by Embrapa Cenargen and Embrapa Environment. Many analyses and risk assessments for the introduction of biological control agents (microorganisms and insects) have already been implemented by Embrapa Environment since the 1990 and various import risk assessments and release into the environment of GMOS have already been carried out in Brazil within the CTNBio provisions and especially by Embrapa Cenargen and Embrapa Environment since the mid 1990.

97. Protocols for risk analysis of plants, terrestrial vertebrates and fish also have been adapted for use in Brazil and in Latin America by Horus Institute of Environmental Development and Environmental Conservation and partners[83] [84]. More than 300 risk analyses were performed in the process of

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[82] MINISTÉRIO DO MEIO AMBIENTE. Resolução CONABIO nº 05, de 21 de outubro de 2009. Dispõe sobre a Estratégia Nacional sobre Espécies Exóticas Invasoras.

[83] MINISTÉRIO DO MEIO AMBIENTE. Informe Nacional de Espécies Exóticas Invasoras que Afetam Ambientes Terrestres. Relatório Final. Volume I (Relatório de Atividades), Curitiba, Instituto Hórus, 41p. 2005. Available at < http://sistemas.mma.gov.br/sigepro/arquivos/_6/Volume%20I%20-%20Relatorio%20final.pdf> Accessed on 25 Apr. 2017

[84] MINISTÉRIO DO MEIO AMBIENTE. Informe Nacional de Espécies Exóticas Invasoras que Afetam Ambientes Terrestres. Relatório Final. Volume II (Proposta para Análise de Risco), Curitiba, Instituto Hórus, 35p., 2005. Available at: < http://sistemas.mma.gov.br/sigepro/arquivos/_6/Volume%20II%20-%20Analise%20de%20Risco.pdf> Accessed on 25 Apr. 2017

adjustment. Such protocols consider voluntary introductions of species in different biological groups (e.g. insects for biological control, invertebrates for pets or for cultivation), as well as unintentional and illegal introductions (e.g. marine invertebrates in ballast water, ornamental seeded plants without authorization of entrance and wild animals from traffic). In this latter case, the analysis is based on the identification of vectors and pathways of dispersal, which is essential to optimize the containment of invasive species and establish preventive measures at their arrival in areas of relevance to the conservation of biodiversity or also at country level.

98. Brazil, despite having already achieved a robust initial survey of invasive alien species already detected in the country [85] [86] [87] [88], still lacks an official database to support the management of these species and provide the information to society as a whole.

99. Records in official databases of invasive alien species already detected in the country help the prevention and early detection in new areas or regions. To support any action related to invasive alien species, some information is essential, such as: a) occurrence records; b) risk of introduction/invasion; c) history of invasion in other countries; d) the probability of introduction and; e) analysis of pathways and vectors of introduction of alien species considering voluntary and involuntary introduction. An organized database, incorporated into an online portal and existing federal government systems would support the risk analysis of invasive alien species and ensure the structuring and development of an early detection system. This database of IAS should make use and articulate with global databases of IUCN, GBIF and CDB (Global Invasive Species Database-GISD, http://www.issg.org/database) Global Invasive Alien Species Information Partnership (Partnership GIASI, https://www.cbd.int/invasive/giasipartnership/).

100. The introduction of a large number of alien species in Brazil over centuries creates the potential for establishment and invasion of species not yet recognized as invasive due to their ability to adapt, evolve and take advantage of opportunities created by anthropic and climate change disturbances. These species are not identifiable as those that are already included in databases and need to be considered as they are detected.

101. Early detection and rapid response systems are effective in minimizing the impacts of invasive alien species on biodiversity and the economy. The success of this strategy depends on surveillance and monitoring, and can be carried out by sampling or by involving a large network of collaborators who help to cover the territory to be verified and protected. Detection may come from passive observations made while carrying out other activities, or when intentional surveys are performed on a predefined area or species. Once an occurrence has been reported, the first step is to identify the species by consulting materials prepared for that purpose, databases, taxonomists of the support network or the Invasive Species Specialist Group linked to IUCN[89].

102. An early detection system is one that seeks to identify and confirm the identity of invasive alien species as early as possible, while there are few individuals or small populations and there is the opportunity for eradication at least on a local level. Prioritizing small populations or isolated individuals tends to

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[85] MINISTÉRIO DO MEIO AMBIENTE. Resolução CONABIO nº 05, de 21 de outubro de 2009. Dispõe sobre a Estratégia Nacional sobre Espécies Exóticas Invasoras.

[86] CORADIN, L.; TORTATO, D.T. 2006. Espécies exóticas invasoras: situação brasileira. Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas, MMA, Brasília, 2006. 24p. Available at: <http://www.mma.gov.br/estruturas/174/_publicacao/174_publicacao17092009113400.pdf> Accessed on 03 Apr. 2017

[87] LOPES, R.M. (ed.). Informe sobre as espécies exóticas invasoras marinhas no Brasil. Série Biodiversidade. Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas, MMA, Série Biodiversidade, 33, Brasília, 2009. 440 p. Available at: <http://www.mma.gov.br/estruturas/sbf2008_dcbio/_publicacao/147_publicacao07072011012531.pdf> Accessed on 03 April. 2017

[88] LATINI, A. O. et al. (org.). Espécies exóticas invasoras de águas Continentais no Brasil. Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas, MMA, Série Biodiversidade, 39, Brasília: MMA, 2016. 791 p. Available at <http://www.mma.gov.br/publicacoes/biodiversidade/category/56-especies-exoticas-invasoras> Accessed on 03 April. 2017

[89] INTERNATIONAL UNION FOR CONSERVATION OF NATURE. Invasive Species Specialist Group, SSC/IUCN. Available at <www.issg.org> Accessed on 09 Jan. 2017.

generate more results in restraining and controlling the dispersion of a species than to start with large invasion areas where species have been established for a longer time. The system can be focused on areas where there is a greater risk of species introduction or on sensitive ecosystems where the impacts of biological invasion tend to be greater, where invasion tends to be quick, or where there is a direct risk to endangered species. This is the case of areas defined as priorities for conservation of biological diversity, including protected areas, which may establish specific protection networks.

103. A rapid response refers to the systematic effort to eradicate, contain or control invasive alien species while the invasion area is still localized. It can be carried out in response to new species entering or observing new outbreaks of invasion by pre-established or common species in the landscape in adjacent areas. It is based on a structure set up in advance to enable the execution of fast and effective actions that includes a support network for the detection itself, for taxonomic identification and for the response action.

104. The success of these actions depends on active participation, for that reason, the creation of a support network comprised of citizens, researchers, conservation areas, research centers, IBAMA decentralized units, agencies responsible for environmental licensing, state and municipal environmental agencies and civil society organizations, is critical to provide input to the system. Materials and campaigns should be prepared to promote the system so that it can receive contributions from the general public, whose participation is extremely relevant.

Scenario without project (BAU) (item 3.1.4 in Funbio Project Document)

105. Based on the current scenario of biodiversity conservation in Brazil, it is expected that without effective improvements in mitigation actions that take into account the current governance model, the parties involved will not sufficiently articulate, information will be poorly disseminated and, consequently, communication will be deficient and inconsistent. The lack of an efficient communication strategy has generated a low level of perception, awareness and knowledge of society about hunting, illegal extraction and trafficking of wild species, for example, which leads to an increase in these actions and increase the biodiversity loss.

106. The inefficiency in the articulation between actors, particularly with the organs of the agricultural and livestock sectors and health, and a deficiency in biodiversity data management results in fragmented information and insufficient data analysis, generating knowledge gaps and often duplicates work. Biodiversity information deficiencies impair the evaluation (and reassessment) of species extinction risk, affecting the elaboration and implementation of PANs and, consequently, increasing the number of threatened species.

107. The dispersion of invasive alien species already in the landscape will continue to occur if there is no organized detection or control initiative. Once present in areas of relevance for biological diversity conservation, the alien species will gradually increase pressure on threatened species through competition or by modifying existing environmental conditions. Even if eventually perceived as a threat, if these biological invasions are already under development, it will be difficult to restore the environment due to control costs and other complexities. In addition, higher costs become permanent as opportunities for outbreak eradication are lost because of early detection failures. The uncontrolled growth of populations will lead to the extinction of more native species in the medium and long term, as well as the degradation of ecosystems due to modifications that hinder the establishment of native species and interfere in the provision of ecosystem services. Ecosystems with a higher level of fragmentation, such as the Atlantic Forest biome, as well as open ecosystems such as the *Cerrado* and the *Pampas* are more susceptible to invasion and loss of species.

3.2 – Project Description (item 3.2 in Funbio Project Document)

Proposed Alternative Scenario (item 3.2.1 in Funbio Project Document)

108. As shown before, compliance with Aichi Target 12 to prevent species extinction is a global challenge and one to be achieved at the national level. Despite the strong legal framework and national efforts made in recent years, it is necessary to: (i) strengthen local and regional arrangements through the

establishment of conservation pacts; (ii) ensure that the species conservation agenda is integrated with public policies such as environmental licensing, forest restoration, native forest protection, Green Grants (Bolsa Verde) and others; (iii) strengthen the performance of agents in species protection through training and development of management tools; (iv) promote continuous monitoring and assessment of the species status; and (v) promote societal awareness and engagement regarding the need for species conservation.

109. As such, this project has four main objectives addressed by components:

- Component 1 aims to promote measures to reduce threats and strengthen the conservation framework for threatened species by integrating species conservation into established public policies. This objective will be achieved through the development of strategic actions and policies to increase the adoption of territorial plans and mitigation measures in agriculture and infrastructure;
- Component 2 aims to increase effectiveness in coping with illegal or irregular biodiversity exploitation. To this end, measures will be promoted for the development of national capacities to combat environmental crime and measures and initiatives to engage local communities to prevent and combat illegal trafficking of wildlife;
- Component 3 aims to create a Warning and Early Detection System of Invasive Alien Species - SAI to control new biological invasions and prevent introductions into Brazil;
- Component 4 proposes to publicize the project's actions, seeking to raise the society's awareness and engagement regarding the challenges for species conservation addressed in the project.

110. Thus, the project aims to contribute to the achievement of the Aichi Biodiversity Targets, in particular: 9, 11 and 12. Target 9 deals with the "identification of invasive alien species and their pathways, as well as the control or eradication of their populations, blocking pathways". Target 11 states that "at least 17% of the country area should be covered by effective conservation measures with equitable representation of ecological regions in a system with efficient connectivity". Target 12 states that "threats to threatened species must be identified and reduced".

111. With the proposed approach, this project supplements other recent GEF projects approved in Brazil such as GEF Mar "Marine Protected Areas Project" and GEF TER "Consolidation of the National System of Conservation Areas (SNUC) and improve protection of flora and fauna". While these projects focus on the creation, implementation, and enhancement of management capacity of protected areas, this project (Pro-Species) aims to develop tools and mechanisms to promote conservation beyond protected areas, especially where few conservation measures are taken, and to establish a coherent and integrated effort to conserve endangered flora and fauna.

112. Therefore, the present project aims to improve the management of at least 290 species categorized as Critically Endangered and with low coverage by existing protected areas. The focal areas will be based on the occurrence of threatened species, covering at least 9 million hectares, where this project is expected to assist in improving landscape management.

Theory of change (item 3.2.2 in Funbio Project Document)

113. An analysis of the main threats to Brazilian biodiversity pointed out that the predominant factors are: habitat loss, mainly due to agricultural expansion and infrastructure works; illegal hunting, fishing, wild species extraction and the introduction of invasive alien species. Because of these pressures, areas of natural habitat have been fragmented, jeopardizing the viability of fauna and flora species populations and compromising the integrity of landscapes. In order to minimize the impacts on threatened species, it is understood that the current challenge is to find new ways and national strategies to minimize these threats and reverse the increase in the number of threatened species without effective protection measures.

114. Therefore, the Project's Theory of Change was initially based on building the basis for change and demonstrating how interventions will work. Specifically, four action strategies were defined, that contemplate: (i) incorporation of threatened species criteria in sectoral policies; (ii) control, engagement

and awareness of illegal hunting, extraction and trafficking of wildlife; (iii) early detection of and response to invasive alien species; and (iv) effective coordination and communication for the awareness and the engagement of society.

115. Among the conditions necessary to achieve the final planned result of reducing the threats and risks of extinction of species that make up Brazil's biodiversity, changes must be made, such as establishing a better governance structure for the implementation of conservation strategies for threatened species; reducing illegal hunting rates and illegal trafficking (mammals, birds, fish and plants); improving management tools for managing the risks of invasive alien species and improving communication and dissemination of information on biodiversity. The table below (Fig. 13) presents all the necessary actions foreseen by the project to reach the global objective.

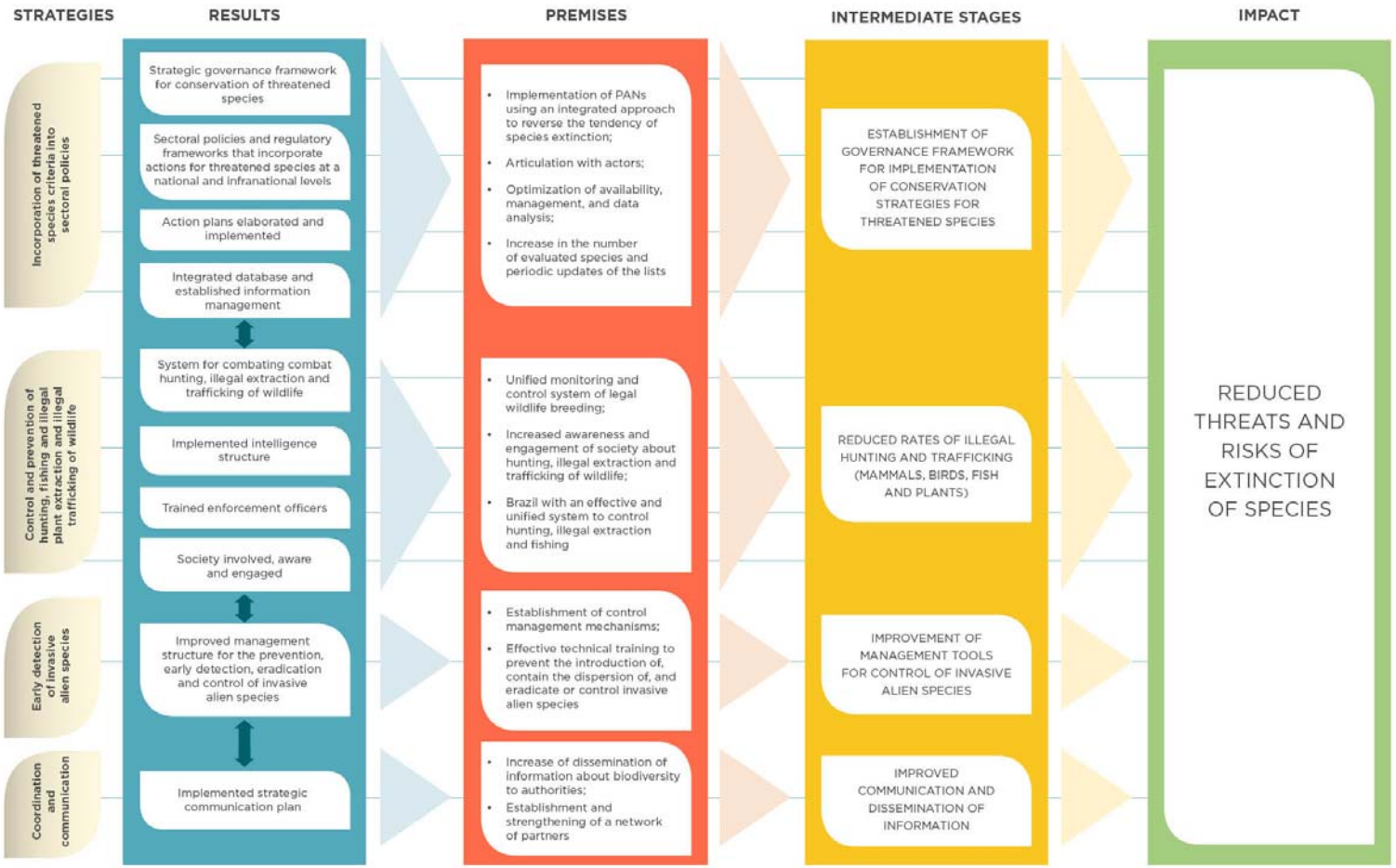

Figure 13. Theory of change developed for the Pro-Species project.

Project territorial areas (item 3.2.3 in Funbio Project Document)

116. The project will take place in territorial areas identified as most relevant to the conservation of threatened species. For this, the MMA prepared the first prioritization study in 2015, based on occurrence data, conservation status and endemism of the threatened fauna and flora species found in the Official National Lists, edited in December 2014. Due to the scope of this project, this exercise also prioritized the endangered species not found in Protected Areas registered in the Protected Areas National Register (CNUC) – "gap-species".

117. In 2016, the MMA carried out new spatial analyses to select candidate areas for project intervention in the Brazilian territory, with Project Preparation Grant (PPG) resources. In this process, criteria were applied to best reach the project goals, based on the analysis and integration of space prioritization using the software Zonation. The Zonation is one of the most used software in systematic large-scale planning and in the development of plans for the biodiversity conservation since it allows to identify areas of high quality habitat for different species from a hierarchy of priorities, minimizing the loss in value of conservation[90] [91]. The territorial prioritization process is divided into 5 stages: i) the selection of conservation targets, ii) allocation of conservation goals, iii) mapping of areas with high conservation value, iv) definition and mapping of areas of lesser value to conservation, v) prioritization of areas. The spatial Zonation prioritization consists in the removal of smaller conservation value pixels, with each removal the conservation value calculations are redone, until all pixels are removed. The order of removal of pixels indicates the degree of importance of each pixel, in this way, the later one pixel is removed, the greater the degree of importance assigned to that pixel. Still, the algorithm performs a nested hierarchy of the pixels in that 5% of the pixels are considered within the 10% more pixels on the prioritization process[92] [93].

118. For this project, was used the 5-level Ottobacias as planning units[94] and 2 targets were chosen: threatened species and economic environmental variables, both for land areas as marine areas. The databases used in the analysis were the follow on: distribution of threatened Brazilian fauna and flora species, included in the Official National Lists of December 2014 (Ordinances MMA num. 443, 444 and 445/2014); National Registers of Federal, State and Municipal Protected Areas (CNUC); Priority areas for the Conservation, sustainable use and benefit-sharing of Brazilian biodiversity (MMA Ordinances num. 09/2007 and 131/2016); Priority Areas for Conservation and Sustainable Use of Threatened Brazilian Flora (CNCFlora/JBRJ)[95][96][97][98][99]; Fragments of

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[90] LEMES, P.; LOYOLA, R. D. Accommodating species climate-forced dispersal and uncertainties in Spatial Conservation Planning. PLoS One 2013. 8(1): 54323

[91] SILVA, T. C. Áreas prioritárias para conservação de aves ameaçadas de extinção do bioma Caatinga frente as mudanças climáticas e ameaças antrópicas. Trabalho de conclusão apresentado ao Programa de Mestrado Profissional em Biodiversidade em Unidades de Conservação da Escola Nacional de Botânica Tropical, Instituto de Pesquisas Jardim Botânico, Rio de Janeiro. 2016.

[92] MOILANEN, A. Landscape zonation, benefit functions and target-based planning: Unifying reserve selection strategies. Biological Conservation, 2007. 134, 571-579 p.

[93] MOILANEN, A. Two paths to a suboptimal solution - once more about optimality in reserve selection. Biological Conservation, 2008. 141(7), 1919–1923 p.

[94] AGÊNCIA NACIONAL DE ÁGUAS. Topologia hídrica: método de construção e modelagem da base hidrográfica para suporte à gestão de recursos hídricos: versão 1.11, Superintendência de Gestão da Informação, Brasília: ANA, SGI, 2006.

[95] LOYOLA, R.; MACHADO, N. VILA NOVA, D. MARTINS, E. MARTINELLI, G. Áreas Prioritárias para Conservação e Uso Sustentável da Flora Brasileira Ameaçada de Extinção. Andrea Jakobsson Estúdio: Instituto de Pesquisas Jardim Botânico, JBRJ. 2014. 80 p. Available at <http://dspace.jbrj.gov.br/jspui/handle/doc/28> Accessed on 03 Apr. 2017,

[96] INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS, INPE. Projeto PRODES, Monitoramento da Floresta Amazônica Brasileira por Satélite. Available at <http://www.obt.inpe.br/prodes/index.php> Accessed on 03 Apr. 2017

[97] INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS, INPE. Projeto TERRACLASS. Available at <http://www.inpe.br/cra/projetos_pesquisas/terraclass2010.php> Accessed on 03 Apr. 2017

native vegetation; Soil use and cover - conversion potential[100]; Other priority areas for conservation, such as KBAs (Key Biodiversity Areas), IBAs (Important Bird and Biodiversity Areas) and AZEs (Alliance for Zero Extinction Areas); and indigenous lands, quilombola (Maroons) areas and agrarian reform settlements. For marine areas, databases with information on marine ecosystems (lagoons, estuaries, wetlands, reef areas, marsh areas) produced by MMA in 2002[101] were also used.

119. Areas where there are large enterprises such as power plants, wind farms, mining and oil exploration blocks were defined as of lesser value to conservation, to prioritize other areas analysis for compliance with the targets, avoiding conflicts of land use.

120. The target set for the target "threatened species" was to ensure at least 10% of the area of distribution of all species, aquatic and terrestrial, were contemplated. For economic environmental variables a goal of conservation of 1% of the area of distribution of the variables was considered.

121. In addition to defining the goals, a value of importance was assigned to each target. A weight according to the category of threat to the species was assigned. The species that had the greatest weight in the prioritization process were the species previously classified in the categories of Gap Species, since these species are not registered in any protected area nor are contemplated by any National Plan of Action (PAN). The economic environmental variables that received the greatest degree of importance were the remnants of native vegetation and the remnants that have been classified with the highest risk of conversion to other uses by the year 2030. For marine areas, the priority areas for biodiversity conservation (MMA 2007[102] and 2016[103]) and the bounded areas as marine ecosystems had the greatest weight in the analysis.

122. Thus, the spatial analysis for the definition of the project geographical areas identified sites with a high concentration of species classified as Critically Endangered (CR) and not covered by any conservation tool, CR Gap-species (Fig.14) (Attachment I).

123. The selected territories complement the actions developed by other cooperation projects coordinated by the MMA and the National System of Protected Areas.

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[98] FUNDAÇÃO SOS MATA ATLÂNTICA/INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS (INPE). Available at <http://www.inpe.br/noticias/noticia.php?Cod_Noticia=3610> Accessed on 03 Apr. 2017

[99] MINISTÉRIO DO MEIO AMBIENTE/INSTITUTO BRASILEIRO DO MEIO AMBIENTE E DOS RECURSOS NATURAIS RENOVÁVEIS. Projeto de Monitoramento do Desmatamento dos Biomas Brasileiros por Satélite – PMDBBS. Available at <http://siscom.ibama.gov.br/monitora_biomas/> Accessed on 03 Apr. 2017

[100] SOARES-FILHO B.S.; RAJÃO R,; MERRY F.; RODRIGUES H. et al. Brazil's Market for trading forest certificates. Plos One 2016, 11(4):e0152311. Available at <http://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0152311> Accessed on 03 Apr. 2017

[101] MINISTERIO DO MEIO AMBIENTE. Panorama da conservação dos ecossistemas costeiros e marinhos no Brasil. Brasília: MMA/SBF/GBA, 2010. 148 P. Available at: <http://www.mma.gov.br/estruturas/205/_publicacao/205_publicacao03022011100749.pdf> Accessed on 03 Apr. 2017

[102] MINISTERIO DO MEIO AMBIENTE. Áreas Prioritárias para Conservação, Uso Sustentável e Repartição de Benefícios da Biodiversidade Brasileira: Atualização - Portaria MMA n°9, de 23 de janeiro de 2007. Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas. – Brasília: MMA, 2007. Available at: <http://www.mma.gov.br/estruturas/chm/_arquivos/biodiversidade31.pdf> Accessed on 03 Apr. 2017

[103] MINISTERIO DO MEIO AMBIENTE. Resultados da 2ª atualização das Áreas e Ações Prioritárias para Conservação, Uso Sustentável e Repartição dos Benefícios da Biodiversidade dos biomas Cerrado e Pantanal realizado em 2012, e da Caatinga, realizado em 2015. Portaria N°223, de 21 de junho de 2016 / Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas. – Brasília: MMA, 2007. Available at: <http://www.mma.gov.br/biodiversidade/biodiversidade-brasileira/%C3%A1reas-priorit%C3%A1rias/item/10724> Accessed on 03 Apr. 2017

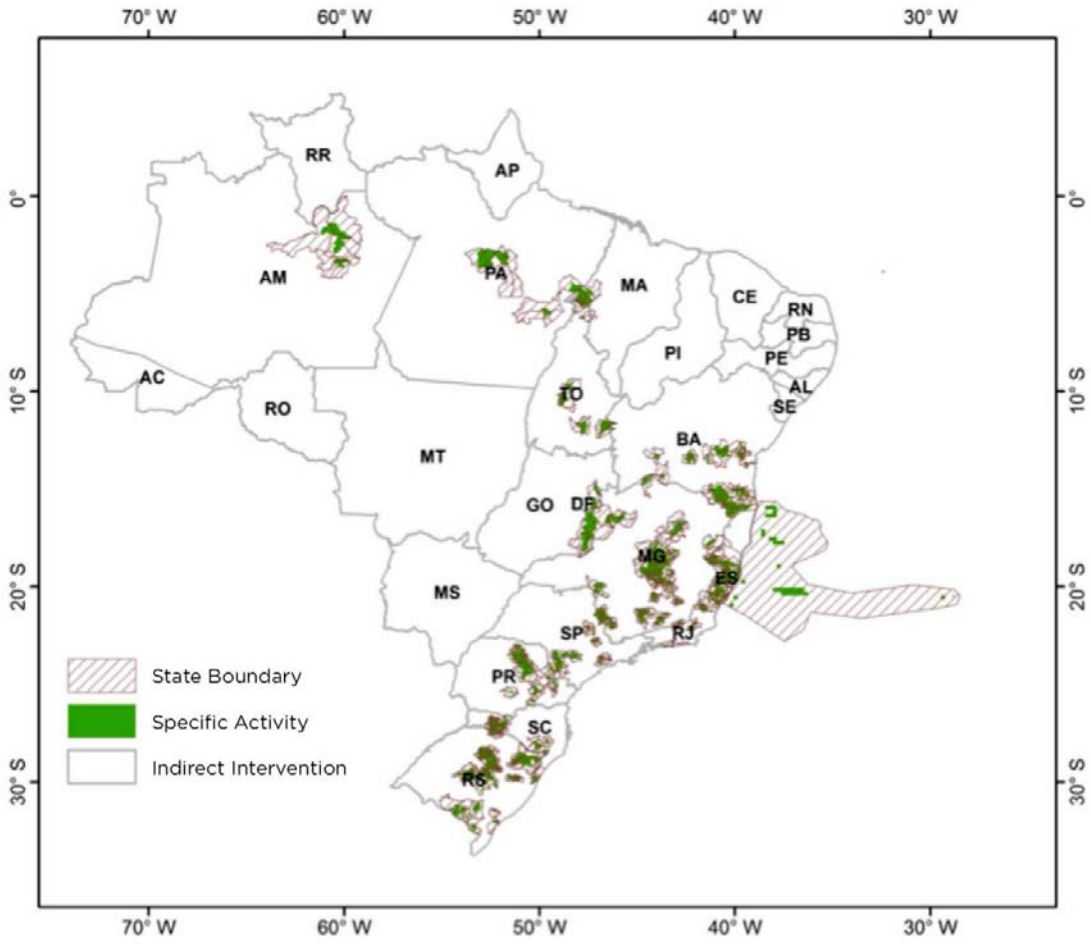

Figure 14. Map indicating the Areas of Specific Activity and Indirect Impact of the project.

124. In total, 46 areas were identified as priority for conservation actions. From this identification, 24 candidate territories were selected based on the greater number of species to be conserved. The total area of these territories is 58,884,766 hectares. These territories cover 669 municipalities, in 14 states and 6 biomes (Attachment II).

125. The areas identified in the spatial prioritization indicate the project's potential for improving conservation status and reducing the extinction risk of 705 Gap species, including 290 CR Gap species (Table 4). With the implementation of conservation actions in the project intervention areas, in addition to the CR-gap species, a total of 2,755 threatened species will also benefit (Attachment III).

Table 4. Number of endangered Brazilian species impacted by the Pro-Species Project

	Species impacted by the Project	**General Total**
CR	636	785
CR-gap	290	318
EN	1306	1554
EN-gap	287	347
VU	813	947
VU-gap	124	171
Total	**2755**	**3286**

126. The project is also expected to support measures to expand knowledge on 34 CR Gap-species that have a high degree of endemism or have only historical records. The objective will be to confirm the occurrence of these species and to define measures for their protection, including the recognition of new AZE sites. Therefore, 22 areas were identified for actions with indication of specific actions directed to these 34 CR Gap-species (Fig. 15).

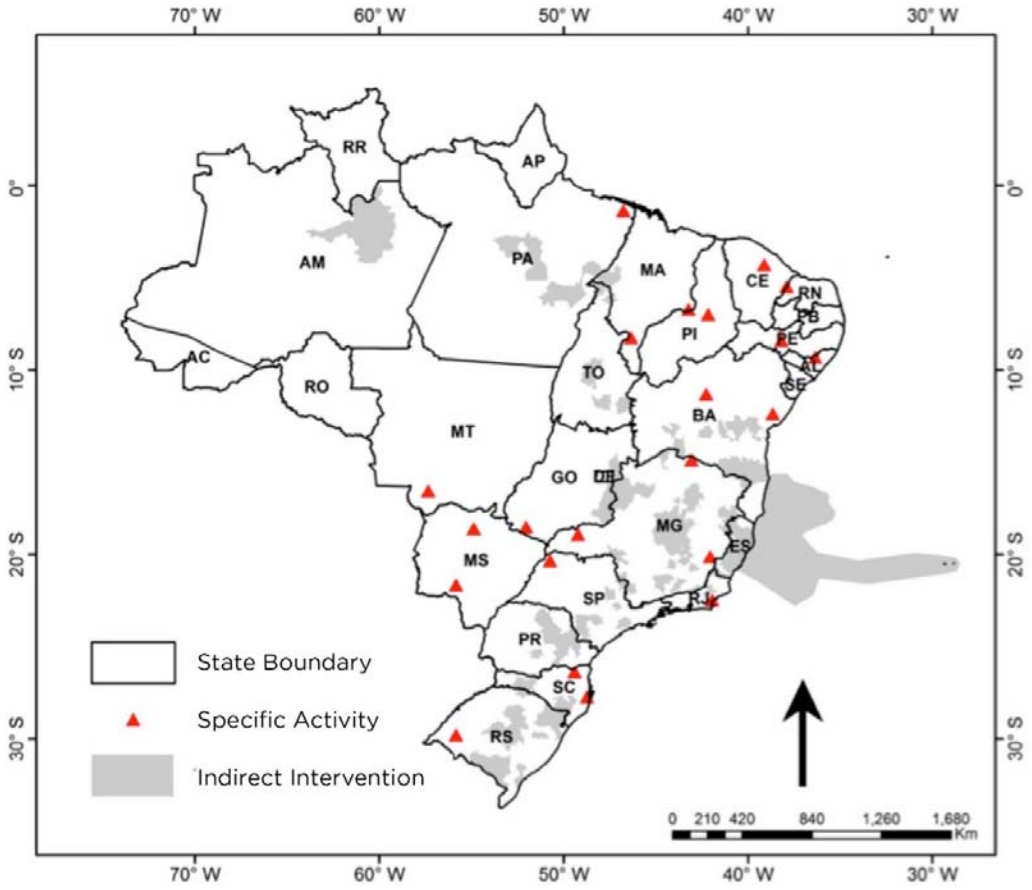

Figure 15. Map showing the areas with indication of Specific Actions of the Project.

Project structure / components (item 3.2.4 in Funbio Project Document)

Component 1- Integration of threatened species conservation in Sectoral Policies

127. This first component focuses on the implementation of the Pro-Species Program and is divided into three subcomponents detailed below: i) elaboration and implementation of the national strategy for the conservation of threatened species; ii) incorporation of threatened species criteria into sectoral policies; and (iii) improve information management on threatened species.

SUBCOMPONENT 1.1 - ELABORATION AND IMPLEMENTATION OF THE NATIONAL STRATEGY FOR THE CONSERVATION OF THREATENED SPECIES

128. Aiming to improve the governance structure of the Pro-Species Program and to establish measures to prevent species extinction, MMA will coordinate the elaboration of a national strategy, integrating the Federal and State governments, as well as other actors.

1.1.1. Project activities:

129. From national seminars and regional meetings with environmental state agencies and key actors, it will be possible to proceed with the development of a national strategy to increase the effectiveness of existing conservation instruments. The implementation of this strategy will be monitored annually by experts to identify protection gaps for each species and propose actions for integration between the instruments, especially related to PANs.
130. In the project's intervention areas, at least 12 PANs with a territorial approach will be developed and implemented, based on the improved methodologies already established by ICMBio and JBRJ, in order to ensure the integration, in a single PAN, of fauna and flora species.
131. State environmental agencies and key local actors will be trained to form technical advisory groups of the territorial PANs during the elaboration phase including ability to use information and monitoring tools.
132. The involvement of state governments and local civic organizations will be essential for the successful implementation of PANs in the project intervention areas. For this reason, partnerships will be established with institutions that will coordinate, execute and monitor the most effective actions for species conservation.
133. In addition, the following activities will be carried out: preparation of financial sustainability studies of the PANs; development of methodology for evaluating the effectiveness of the territorial PANs; enhancement and availability of SISPAN for local players to use; preparation of material to disseminate the results achieved and every PAN will be assessed by Funbio Safeguards and Gender Integration focal points to check if proposed activities trigger safeguards or need an specific Gender Integration Plan.
134. The involvement of local populations in preparing implementation of PANs is essential to the effectiveness of the actions. Workshops will be held with involvement of local communities with the goal to promote the dialogue between the participants and contemplate different perspectives and interests with regard to the reality of the sites, This bottom-up approach follows the methodology already adopted by ICMBio and JBRJ.

1.1.2. Responsible agencies: MMA, ICMBio, JBRJ, SFB, IBAMA and OEMAs.

SUBCOMPONENT 1.2 - INCORPORATION OF THREATENED SPECIES CRITERIA INTO SECTORAL POLICIES

135. This sub-component has the goal of influencing some processes adopted by sectoral public policies, incorporating criteria related to threatened species to promote biodiversity conservation in stages of implementation of the Rural Environmental Registry, the National Plan for the Recovery of Native Vegetation, the Bolsa Verde (Green Grants) Program and in Environmental Licensing.

1.2.1. Project Activities:

136. Studies and Technological tools will be developed to identify relevant areas for the conservation of threatened species in rural properties. The goal is for these areas to be prioritized when defining legal reserve areas, restoration activities and for evaluating environmental reserve quotas and recovery of Permanent Preservation Areas (APPs) and their connectivity, improving the implementation of Law 12,651/2012. For this purpose, maps with synthetic analyses on threatened species will be produced and made available to the Brazilian Forest Service and the environmental state agencies to incorporate into their rural environmental registration systems. In support to this initiative, case studies about compensation of Environmental Reserve Quotas will be carried out in the project intervention areas. This will also lead to a more substantiated debate about the inclusion of species sensitive areas as priority areas for compensation/quotas.
137. Improving the landscape for threatened species will also be promoted by adopting restoration best practices under the National Plan for Recovery of Native Vegetation - PLANAVEG. To this end, technical guidelines will be prepared including: maps of sensitivity areas and those relevant for threatened species; lists of exotic species to be avoided; and recommendations for threatened species use in restoration projects.

138. For the Bolsa Verde Program, the MMA will propose changes in the regulation to include rural areas that are relevant for the conservation of threatened fauna and flora species. Based on the criteria and procedures proposed by the MMA, three areas within the intervention territories of the project will be selected where species threatened by hunting, direct extraction or inadequate management occur. In these areas, socioenvironmental characterization studies and identification of families eligible to receive the benefit will be carried out. Monitoring and evaluation mechanisms will also be established to evaluate the effectiveness of this initiative for threatened species conservation. The engagement of the Project team with Bolsa Verde management, during and because of the project preparation, has already advanced the negotiations for this goal.
139. Measures will be adopted in the environmental licensing processes to improve analyses and establish capacities to incorporate criteria related to threatened species, involving the licensing agencies, companies and institutions responsible for biodiversity conservation. Thus, three environmental impact assessment guides will be elaborated on species threatened by enterprise type, with the production and distribution of sensitivity maps for defining where projects can be installed and dissemination of material with recommendations of good practices for companies and licensing agencies. Irreplaceable areas will be identified with the presence only of threatened species with restricted distribution gap and environmental compensation options proposals for developments with potential impact on threatened species. In addition, licensing agencies will be trained to apply the guides.
140. During the PPG phase the Brazilian Forest Service and environmental state agencies were contacted by the Environmental Ministry to debate these tools. Strong support was shown and during project implementation is expected that the interest will even increase as the tools are developed and presented.

1.2.2. Responsible agencies: MMA, ICMBio, JBRJ, SFB, IBAMA, ANA and OEMAs.

SUBCOMPONENT 1.3 - IMPROVE INFORMATION MANAGEMENT ON THREATENED SPECIES

141. The goal of this subcomponent is to improve information management on threatened species, in order to make the species conservation status assessment processes and the elaboration and implementation of PANs more organized, transparent and faster. Through the integration of different existing databases, the information will be made available on an online platform, guiding management and making it possible to cross-reference information about species.

1.3.1. Project activities:

142. The organization and availability of data on Brazilian species is essential in the process of assessing the conservation status. To this end, studies will be carried out to integrate and harmonize the elaboration process of the national and state fauna and flora lists, encouraging evaluation at the regional level and definition of use restriction measures.
143. At this stage, environmental agencies will be trained in assessment methodologies, including analysis of threats to and uses of species. In addition, evaluation systems will be improved and integrated with environmental state agencies, prioritizing data availability and exchange. By the project year 3, 7,000 species conservation status assessments should be carried out, so that in year 4, the Official Updated List of threatened species will be published in an Ordinance. The project will encourage states to develop or update state lists of threatened species of flora and fauna
144. In order to improve information management on Brazilian biodiversity, user's demands will be mapped, available information sources will be identified and species data gap and threat studies will be carried out. Data and metadata standards will also be established and tools for integration

of existing systems will be implemented. Whenever possible, the guidelines and recommendations laid down by GBIF and GBIO will be followed [104].

145. Afterwards, tools and an information panel will be developed for analysis, synthesis and dissemination of data on threatened species, by means of a guiding document of the system's architecture. The dissemination of the information, including to other national and international initiatives, such as the SIBBr Portal and GBIF, depends on the elaboration and institution of a data policy and governance and sustainability mechanisms. In addition, for these actions to be successful, teams from Federal and State environmental agencies will be trained to analyze and synthesize data on threatened species.

146. Information about threatened species should be available in an online platform seamlessly to guide the management and to enable the crossing of information about the species with those resulting from the implementation of other public policies, such as those from the Rural Environmental Registry (CAR), the Priority Actions for the Conservation, Sustainable Use and Sharing of Benefits from Brazilian Biodiversity and the Biodiversity Monitoring in Conservation Units. These features will be available from the Biodiversity Portal (PortalBio) and integrated with SiBBR. In some cases, existing systems should be improved, especially to allow for integration with the Biodiversity Portal (Table 5) and with SiBBR.

Table 5. Proposed improvements of existing information systems about Brazilian biodiversity

System	Proposed improvements
Flora of Brazil 2020 **and Virtual Herbaria (Reflora Program)**	Integration with the Biodiversity Portal
CNCFlora Portal (JBRJ System)	Integration with the Biodiversity Portal, including modules in the action plans calling for inclusion of information about implementation actions into the Portal
Fauna Catalogue	Platform migration and integration with the Biodiversity Portal
Biodiversity Portal (PortalBio)	Integration with SiBBR, GBIF and CHM/CBD. Updates of the consultation interface to integrate with other systems. Development of interface for use by the States
National Action Plans System (SISPAN/ICMBio)	Incorporation with the Biodiversity Portal
Biodiversity Authorization and Information System (SISBIO/ICMBio)	Updates to integrate with State agencies. Integration with the Biodiversity Portal

1.3.2. Responsible agencies: MMA, ICMBio, JBRJ, SFB, IBAMA, MCTIC and OEMAs.

[104] GLOBAL BIODIVERSITY INFORMATION FACILITY, GBIF. Global Biodiversity Informatics Outlook: Delivering Biodiversity Knowledge in the Information Age. Available at: <> Accessed on 04 Apr. 2017

Component 2 - Control and prevention of illegal hunting, fishing and plant extraction and illegal trafficking of wild species

147. Component 2 has the goal of establishing an institutional intelligence structure to combat crimes against fauna and flora and providing management reports within existing control systems. This structure will be composed of a network of actors from Federal and State regulatory agencies, involving the Federal Police, Federal Highway Police, Military Police, Civil Police and Public Prosecutor. This shared commitment will help to catalyze highlevel political will to fight wildlife traffic. Success in this component will also depend on technical capacity-building and awareness-raising campaigns and engagement of local communities in prioritized areas to prevent and combat crimes against fauna and flora.

2.1. Project Activities

148. The new institutional intelligence framework will be based on the International Consortium on Combating Wildlife Crime - ICCWC Indicator Framework for Combating Wildlife and Forest Crime[105] (Fig. 16), which is a guide developed to increase capacity and complement efforts of wildlife law enforcement and sub-regional and regional networks that work to combat illegal wildlife trafficking.

Figure 16. Key elements in of the ICCWC Indicator Framework for Combating Wildlife and Forest Crime

149. To this end, studies will be contracted for the implementation of the ICCWC and workshops will be held with Federal and State enforcement agencies to develop this new tool.
150. The establishment of the institutional intelligence structure depends on the improvement of three existing control systems: National Registration System of Environmental Offenses (SICAFI), of

[105] UNITED NATIONS. International Consortium on Combating Wildlife Crime (ICCWC). Wildlife and Forest Crime Analytic Toolkit. 2012. Available at <https://www.unodc.org/documents/Wildlife/Toolkit_e.pdf> Accessed on 09 Jan. 2017.

National Registration System of Complaints (SisLiv) and National Wildlife Management System (Sisfauna).

151. The improvement of the SICAFI aims to establish profiles accessible to States that can be used to record occurrences and to enable a unified databank for the management of illicit environmental activities in Brazil. The unified registry will allow for identification of previous crimes of the trafficker, thus avoiding it is considered a first-time offense in each State and occurrence. This improvement will enable intelligence reports that cross-reference data and occurrences of wildlife trafficking.

152. Currently SisLiv allows the user to search for complaints by theme, by State and by city, for consultation by IBAMA profiles. The proposed improvement is aimed at allowing access by state environmental agencies and environmental police for consultation and registration, enabling a unified registry of national complaints. This new dynamic will allow for spatial analysis of environmental crimes and statistical and intelligence analyses of crimes through maps, guaranteeing greater efficiency in meeting the demands, better definition of competencies and transparency in this service.

153. Sisfauna currently has a registration and authorization module for projects and activities related to use and management of wild fauna in captivity. Improvements to this system are meant to ensure use by State environmental agencies, integrating information about animals seized, held and released throughout the national territory.

154. With integrated databases and improved systems, a network of actors from the federal and state regulatory agencies, Federal Police, Federal Highway Police, Military Police, Civil Police and Public Prosecutor's Office will be consolidated and trained. After this training, the agents and police will be replicators in their units and states of origin. For the implementation of four courses to combat crimes against fauna and flora, the following materials will be elaborated: i) wildlife control and policing manual; ii) a manual identifying the most trafficked species; and iii) collection of environmental legislation.

155. The presencial courses will be given to classes of 50 students and will have 56 hours with content on offenses, welfare, surveillance and policing, taxonomic categories, species identification, information on conservation biology, management concepts, and control and management systems (SisBio, SisCites, SisPass and SisFauna). By the fourth year of the project, a total of 200 students will have completed the training courses and become multipliers. In addition to presencial classes, the aim is to increase the number of qualified students through the development of a virtual distance learning or e-learning platform.

156. Actions to raise awareness and engagement of local communities in project areas will be developed in order to promote the prevention and the combat against illegal hunting, fishing and harvesting and illegal trafficking of wild fauna and flora, taking into consideration the recommendations to the world-renowned approach to involve local communities for nature conservation[106][107][108]. Such actions provided for, shall be prioritized in line with the development and implementation of regional action plans mentioned in 1 Component, as well as in the implementation of the Bolsa Verde program.

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[106] IUCN SULi, IIED, CEED, Austrian Ministry of Environment and TRAFFIC (2015) Symposium Report, 'Beyond enforcement: communities, governance, incentives and sustainable use in combating wildlife crime', 26-28 February 2015, Glenburn Lodge, Muldersdrift, South Africa. Available at: <http://pubs.iied.org/G03903/?a=I+SULi> Accessed on 06 Apr. 2017

[107] CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY. Cancun, Mexico, Dec. 2016. Decision XIII/2. Progress towards the achievement of Aichi Biodiversity Targets 11 and 12. CBD/COP/DEC/XIII/2. Available at: <https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-02-en.pdf> Accessed on 06 Apr. 2017

[108] CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY. Cancun, Mexico, Dec. 2016. Decision XIII/8. Sustainable use of biodiversity: bushmeat and sustainable wildlife management. CBD/COP/DEC/XIII/8 Available at: <https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-08-en.pdf> Accessed on 06 Apr. 2017

2.2. Responsible agencies: MMA and IBAMA

Component 3 - Prevention, early detection of and rapid response to invasive alien species

157. Component 3 aims to improve the mechanisms and partnerships for early prevention and control of invasive alien species and aims at the development of an early warning system and early detection of and response to invasive alien species.

158. The prevention and early detection of invasive alien species, followed by rapid response action (eradication and control), are more effective than any action taken following the establishment of an invasive exotic species. The system will consist of the organized capacity for rapid response to new outbreaks of biological invasion before they reach a scale of high cost and difficulty to control, minimizing risks to threatened species and conserving the resilience and the functioning of natural ecosystems.

159. The project will also enable the country to develop *expertise* on the modern techniques of control and eradication of invasive alien species used with great success in other countries, especially in oceanic islands.

3.1. Project Activities:

160. National coordination for invasive alien species will be established with the aim of improving the legal base, capacity and management mechanisms in line with improvements in the management of endangered species.

161. The development of an early detection system requires an information database on invasive alien species and risk analyses. Risk analysis protocols will be developed at two levels. The first will be a simplified protocol that brings together the most relevant characteristics for invasion by biological group and aims to facilitate decision making within the early detection and rapid response process. The second level refers to complete risk analyses protocols that should be adapted for use in Brazil from existing models the country and abroad (see info on existing protocols in the country in item 3.1.3 - baseline/current situation - IAS). These protocols will integrate the early detection system for little known species and will also serve as a basis for the introduction of species into the country or states. The project will create the necessary conditions for the incorporation of risk analysis in the process of authorization of importation of exotic species, as advocates the CBD[109] [110] [111].

162. Studies will be contracted for the development of the database and computerized support system, including a mobile phone application, and for the analysis of vectors and dispersion pathways for priority areas. At this moment, experts will be gathered to consolidate the national list of invasive alien species and to train a network of collaborators with the system. The national list will be validated by a large group of scientists and technicians from across the country and may become a legal document if its application is feasible.

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[109] CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY. Alien species that threaten ecosystems, habitats or species. COP 6, Decision VI/23, 2008. Available at https://www.cbd.int/decision/cop/?id=7197 > Accessed on 06 Apr. 2017

[110] CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY. Alien species that threaten ecosystems, habitats or species: further consideration of gaps and inconsistencies in the international regulatory framework. COP 8, Decision VIII/27, UNEP/CBD/COP/DEC/VIII/27, 2006. Available at: < https://www.cbd.int/doc/decisions/cop-08/cop-08-dec-27-en.pdf> Accessed on 06 Apr. 2017.

[111] CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY. Invasive alien species: management of risks associated with introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food, and related issues. COP 12, Decision XII/16, UNEP/CBD/COP/DEC/XII/16, 2014. Available at <https://www.cbd.int/doc/decisions/cop-12/cop-12-dec-16-en.pdf> Accessed on 06 Apr. 2017.

163. The analysis of dispersal pathways and vectors consists in the identification and prioritization of the main gateways of invasive alien species in the country. Accordingly, this analysis will serve as subsidy for the prioritization of activities and areas for the development of surveillance and monitoring systems with the goal of early detection and rapid response.

164. The database should contain information on taxonomy and general characteristics of the species, characteristics of the invasion process, information for prevention and management, results of risk analyses, locations of occurrence and references, among others.

165. Information on the species already detected in the country will be based on the "I National Report on Invasive Alien Species (GEF Probio I Project)[112]" and their publications about IAS on the costal and marine zones[113] an continental waters[114] on the "National Database of Invasive Alien Species I3N Brazil"[115] of the Horus Institute for Development and Environmental Conservation, developed with the support of the GEF project "Building the Inter-American Biodiversity Information Network (IABIN)" between 2004 and 2005. This database will be integrated with other information systems already structured in Brazil, such as the SIBBr[116] database and the Biodiversity Portal[117].

166. In March 2014 Fiocruz has launched the Information Center of Wildlife Health -CISS[118], resulting from the support of the GEF project "National project of public-private Actions for biodiversity-PROBIO II", which contains updated information on the situation and outbreaks of diseases in wild animals (zoonoses) and their pathogens, vectors and hosts, most of them invasive alien species, and several of these zoonoses can also infect humans and transforme into emerging human diseases, often associated with situations of degradation of ecosystems. The CISS/Fiocruz, the Quarantine Laboratory Costa Lima of Embrapa Environment Centre, National Technique Commission of Biosafety CTNBio/MCTIC, Secretary of Agriculture Defense/ MAPA, ANVISA/MS and specialised agencies of the Ministry of Transport, Ports and Civil Aviation should be priority partners in the development of the system of early detection of invasive alien species proposed in this component. The possibility of integrating this system with regional and international information systems and early detection of invasive alien species, including GIASIP/CBD (Global Partnership for information on invasive alien species), IPPC/FAO (International Convention for the Protection of Plants), OIE (World Organization for Animal Health), WHO (World Health Organization) and CMBW/IMO (Convention on Ballast Water Management), should be considered by the project.

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[112] CORADIN, L.; TORTATO, D.T. 2006. Espécies exóticas invasoras: situação brasileira. Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas, MMA, Brasília, 2006. 24p. Available at: <http://www.mma.gov.br/estruturas/174/_publicacao/174_publicacao17092009113400.pdf> Accessed on 03 Apr. 2017

[113] LOPES, R.M. (ed.). Informe sobre as espécies exóticas invasoras marinhas no Brasil. Série Biodiversidade. Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas, MMA, Série Biodiversidade, 33, Brasília, 2009. 440 p. Available at: <http://www.mma.gov.br/estruturas/sbf2008_dcbio/_publicacao/147_publicacao07072011012531.pdf> Accessed on 03 April. 2017

[114] LATINI, A. O. et al. (org.). Espécies exóticas invasoras de águas Continentais no Brasil. Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas, MMA, Série Biodiversidade, 39, Brasília: MMA, 2016. 791 p. Available at <http://www.mma.gov.br/publicacoes/biodiversidade/category/56-especies-exoticas-invasoras> Accessed on 03 April. 2017

[115] BASE DE DADOS NACIONAL DE ESPÉCIES EXÓTICAS INVASORAS, I3N Brasil. Available at <http://i3n.institutohorus.org.br/www/> Accessed on 09 Jan 2017.

[116] SISTEMA DE INFORMAÇÃO SOBRE A BIODIVERSIDADE BRASILEIRA (SIBBr). Available at <http://www.sibbr.gov.br> Accessed on 09 Jan 2017.

[117] PORTAL DA BIODIVERSIDADE (PortalBio). Available at <https://portaldabiodiversidade.icmbio.gov.br/portal/> Accessed on 09 Jan 2017.

[118] FUNDAÇÃO OSVALDO CRUZ. Centro de Informação em Saúde Silvestre - CISS. Available at <http://www.biodiversidade.ciss.fiocruz.br/> Accessed on 06 Apr. 2017

167. This preparation will allow for implementation of demonstration models in priority areas. The following documents will be produced for this action to be more effective: i) technical guides for implementation of preventive measures for invasive alien species and (ii) technical guides with procedures and protocols for early detection and rapid response. This material will be used in training of federal and state licensing and inspection agents, managers of protected areas, as well as members of MMA, ICMBio, JBRJ, SFB and IBAMA, including actors involved in the PANs and evaluation of the conservation status of native species.

168. The development of a support network made up of citizens, researchers, protected areas staff, research centers, IBAMA decentralized units, environmental licensing agencies, state and municipal environmental agencies and civil society organizations is essential to support the system. Materials and campaigns will be developed to promote the system so that it can receive contribution from the public, whose participation is extremely relevant. People living near priority areas will receive information on species identified as likely to occur from the results of vector and dispersion pathways analyses or that are identified as posing imminent risk of introduction in priority areas.

169. For the implementation of the early warning system and early detection it is of extreme importance the articulation with the existing monitoring programs in the country as the National Program of Biodiversity Monitoring in federal conservation units coordinated by ICMBIO, which includes continental and coastal marine environments, as well as long-term research programmes, in particular the *Programa de Pesquisa Ecológica de Longa Duração* (PELD)[119] Research Programme on Biodiversity (PPBio)[120] and the National System of Research on Biodiversity (Brazil SISBIOTA)[121].

170. With this, mechanisms will be developed to receive information through websites, e-mail and/or telephone and a smart phone application. The user register previously so that the information received is identified and verified. Validated occurrences will be included in the national database.

3.2. Responsible agencies: MMA, IBAMA, ICMBIO, JBRJ, SFB and specialists on the theme.

Component 4 - Coordination, monitoring and communication

171. Component 4 will integrate the other project components through transversal coordination, monitoring and communication measures. For this reason, the main focus of this component will be to ensure transparency and dissemination of the stages and results of the entire project, with constant involvement of the key parties.

4.1. Project activities

172. The project coordination and monitoring will be carried out by forums that guarantee the integration of information between the federal government, academia, states and local beneficiaries, also allowing for contribution from experts at specific stages. For this, meetings of the Project Coordination Committee, the Operational Centers and the National Biodiversity Commission (CONABIO) will be facilitated.

173. The MMA is the body responsible for chairing CONABIO and will work to mobilize this collegiate to monitor and execute the components of this project, in accordance with the national strategy for threatened species conservation.

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[119] CNPQ. Programa de Pesquisa Ecológica de Longa Duração – PELD. Available at <http://cnpq.br/apresentacao-peld> Accessed on 06 Apr. 2017.

[120] CENTRO DE ESTUDOS INTEGRADOS DA BIODIVERSIDADE AMAZÔNICA, CENBAM. Programa de Pesquisa em Biodiversidade – PPBio. Available at <https://ppbio.inpa.gov.br/Sobre> Accessed on 06 Apr. 2017.

[107]CNPQ. Sistema Nacional de Pesquisa em Biodiversidade, SISBIOTA Brasil. Available at <http://cnpq.br/apresentacao-sisbiota> Accessed on 06 Apr. 2017.

174. The successful implementation of any biodiversity policy or the achievement of conservation goals depends on the effective use of tools that enable and support people to change their behaviors. Communication, Education and Public Awareness (CEPA) is a tool that allows effective participation, and enables the involvement of key actors in the planning and execution of the policy (Fig. 17).

175. The CDB, based on its Article 13, encourages the use of a CEPA model[122], developed for the promotion of communication strategies in projects geared towards biodiversity conservation and achieving Aichi Target 1[123]. CEPA is a means to establish favorable conditions for collaboration so that policies, incentives and regulations across sectors encourage biodiversity conservation and sustainable use. CEPA develops the relationships and learning processes that sustain innovation in institutions and organizations, as well as builds trust mechanisms, understandings and shared agreements needed to act and reduce conflict. This process of change involves much more than releasing information through reports and memos. With the correct management of these processes, a sense of appropriation of the problem and solutions will be developed, whereby actions can be sustained in the long term.

[122] HESSELINK, F.J.; GOLDSTEIN, W.; KEMPEN, P. P. v.; GARNETT, T. y DELA, J. *Comunicación, Educación y Conciencia Pública (CEPA).* Una caja de herramientas para personas que coordinan las Estrategias y planes de acción nacionales sobre diversidad biológica. Montreal, 2007. Available at <https://www.cbd.int/cepa-toolkit/cepa-toolkit-sp.pdf> Accessed on 12 Jan 2017.

[123] CONVENTION ON BIOLOGICAL DIVERSITY (CBD). Note by the Executive Secretary. Framework for a Communications Strategy. Cancun, Mexico, dec. 2016. Available at <https://www.cbd.int/doc/meetings/cop/cop-13/official/cop-13-14-en.pdf> Accessed on 12 Jan 2017.

Figure 17. Key Elements of Communication, Education and Public Awareness, CEPA

176. Thus, in addition to the implementation of the communication strategy using the CEPA model, a specific plan will be incorporated using interactive and customized technological tools for each type of public involved: public agencies, direct beneficiaries of the project, academia and civil society. Through the production of differentiated and regionalized content for the project areas, project documents, activities, outputs, publications and results will be distributed. The information transmitted will focus on regional threatened species for the knowledge and awareness of local populations. Publicity campaigns will be held about illegal animal and plant trafficking and invasive alien species as important threats to biological diversity, through which the system of early detection and rapid response will be widely disseminated.

177. For the implementation of these actions, specific informational material will be produced for distribution to the general public focusing on the priority areas of the project, including video productions, printed material and other products for communication on TV, radio, social media and related websites, as well as the publishing of the produced materials on the appropriate media.

178. The information generated by the project will be a part of a management panel for the National Strategy for the Conservation of Threatened Species, with integration of data from other projects and related activities that will allow for constant monitoring of the impacts produced by the cooperative projects in the selected territories.

4.2. Responsible agency: MMA

Financial aspects of the project (item 3.3 in Funbio Project Document)

Financial summary (item 3.3.1 in Funbio Project Document)

179. The project will be financed by USD $13,435,000 by the GEF and USD $50,942,867 in co-financing, 13% higher than anticipated in PIF stage, from MMA, IBAMA, JBRJ and the OEMAS of Santa Catarina, Rio de Janeiro, Espírito Santo, Amazonas, Bahia, Maranhão, Paraná, Rio Grande do Sul, São Paulo, Minas Gerais, Tocantins and Pará.

Table 9. Financial Table

Components	GEF (U$)	Co-financing Funds	Total
1 - Incorporation of criteria related to threatened species in sectoral policies	$ 8,960,251	$ 37,204,128	$ 46,164,379
2 - Control and awareness of illegal hunting, extraction and wildlife trafficking	$ 1,972,389	$ 10,645,067	$ 12,637,456
3 - Prevention, early detection of and rapid response to invasive alien species	$ 1,542,360	$ 1,394,943	$ 2,937,303
4 - Coordination and communication	$ 660,000	$ 1,698,729	2,358,729
Administrative costs	$ 300,000		$ 300,000
TOTAL	**$ 13,435,000**	**50,942,867**	**$ 64,377,867**

Co-financing (item 3.3.2 in Funbio Project Document)

180. The co-financing for the project were raised by the main actors of the project: MMA, IBAMA, JBRJ, ICMBio and IUCN and the OEMAS of Santa Catarina, Rio de Janeiro, Espírito Santo, Amazonas, Bahia, Maranhão, Paraná, Rio Grande do Sul, São Paulo, Minas Gerais, Tocantins and Pará States, according to the letters of counterpart attached (Attachment IV).

181. The interest in participating in the project is higher than expected and the letters of co-finance show a very strong support of the project. There is little doubt that most of the co-finance will happen but it´s not realistic for all of it being available on the expected time. Thus, Funbio financial appraisal indicated that a more conservative approach, than what the actual co-finance letters would lead to believe, would be better adapted to Brazilian current political and economic context.

182. Funbio review of the co-finance pledges find some of them were too optimistic giving the current economic and political context in Brazil, which have a substantial impact on regional governments and the federal government. The current situation leads to greater uncertainty about the actual ability of fulfilling the pledges by state governments and the new governments-elect after 2018 elections in the project timeframe.

183. To mitigate the co-finance optimism risk, Funbio financial team took a conservative approach of the co-finance pledges. For project planning purposes some pledges were marked down, making the actual co-finance indicated in the project document of $ 50,942,867 (1:3.8 ratio) a conservative, but realistic, amount.

184. During project execution the full amount of co-finance pledged by each partner will be monitored and fulfillment of the commitments will be required by the project coordination. Thus, there is a real possibility the actual co-finance leveraged by the project at its end surpasses the amount indicated in this document.

185. Also, there are two potential sources of co-finance not covered by the project planning due to the difficulty to estimate it at this time:

186. new partnerships crafted at PANs design phase, mostly from non-profits and local governments; and
187. private sector investments using the guidelines for infrastructure and agricultural endeavors developed by the project and adopted by state and federal regulators.

Project Budget (item 3.3.3 in Funbio Project Document)

188. Project budget had little adjustments when compared with the approved PIF document. MMA conducted meetings with project partners and stakeholders for project macro-activity planning and fine-tune project budget. Components 1 and 2 total budget revision is less than 2% different from PIF estimates and those two components are responsible for 81% of the whole project. Component 3 revision and planning result was 10% smaller than PIF estimates. The only Component where the revision and planning result have a significant difference was component 4, with a planned budget 51% bigger than anticipated. Although 51% seems a steep increase, component 4 is by far the smallest component and this increase only amount $ 225,000. The difference in component 4 was due to an increase in the perception of the importance of communication and public awareness for project goals.

Financial schedule (item 3.3.4 in Funbio Project Document)

Table 10 Financial schedule of the Project

Fiscal Year	YR1	YR2	YR3	YR4
Annual	3,005,427	3,653,405	3,675,322	3,100,846
Accumulated	3,005,427	6,658,832	10,334,154	13,435,000

Long-term project sustainability (item 3.3.5 in Funbio Project Document)

189. The incorporation of criteria related to threatened species into sectoral public policy instruments will ensure institutionality and longevity for actions in favor of threatened species initiated in the Pro-Species project. The change promoted by the project is more related as how existing policies and government bodies execute their work than to create additional work and should be seamlessly incorporated in daily operations. Equally relevant are the actions of awareness and engagement of civil society and especially of local communities that will give greater support and long-term sustainability to actions to prevent and combat crimes against fauna and flora.
190. The long-term sustainability of the project is based also on the maintenance of agreements between the institutions involved through technical cooperation agreements that will be signed between the Federal Government and the Executing Agency, as well as the subsidiary agreements with other participating agencies. Letters of commitment already formalize the involvement of States and their respective counterparts. These documents will effectively establish the commitments of each of the agencies (financial, technical and other), including the project execution phase. In addition, the Operational Manual of the Program (OMP) will contain the specific responsibilities of the participating agencies in providing timely technical and financial reports for the various programs under their responsibility that are part of the project's parallel funding structure. Such actions will ensure the strengthening of the coordination structure proposed by the project and the implementation of long-term activities.
191. For the effective participation and involvement of key actors, as well as the management of dialogue with multiple actors for the planning and execution of actions, a communication and education strategy is described in Component 4. It is expected that with the correct management of these processes, a sense of appropriation of the problem and solutions will be developed. These

actions will be developed under the coordination of MMA, ICMBio, JBRJ with the participation of the States in the project implementation geographical areas with the goal of sustaining activities over the long term. The same thing is planned for the IBAMA awareness campaigns on overexploitation, illegal hunting and wildlife extraction, to disseminate the potential benefits of biodiversity sustainable management practices, aiming to involve local populations, productive sectors and behavioral changes regarding biodiversity.

192. CEPA is a means to establish favorable conditions for collaboration so that policies, incentives and regulations across sectors encourage biodiversity conservation and sustainable use. CEPA develops the relationships and learning processes that sustain innovation in institutions and organizations, as well as builds trust mechanisms, understandings and shared agreements needed to act and reduce conflict. This process of change involves much more than releasing information through reports and memos. With correct management of these processes, a sense of appropriation of the problem and solutions will be developed, whereby actions can be sustained in the long term.

193. The Biodiversity Portal, which will contain data and integrated information on biodiversity and threatened species, will be maintained by ICMBio and JBRJ, who will have specific staff for this purpose.

194. IBAMA will be responsible for coordinating the actions planned for the establishment of the institutional intelligence structure to combat crimes against fauna and flora and the existing control systems (SICAFI, SisLiv and Sisfauna). They will have specific staff for systems and information management.

195. For the invasive alien species early detection system, Component 3, it is recognized that the best guarantees that the system will be sustainable is its formalization as a legal framework and public policy at the national level as well as its formalization within the existing structures of natural areas management at the federal (IBAMA, ICMBio), State and Municipal (environmental secretaries) levels. In addition, the knowledge incorporated through technical training events will act as catalysts for change and continued action, where the proposed actions touch mainly on topics of prevention and early detection, dealing, therefore, with initial or incipient invasions. There will not be the need for substantial application of resources for control measures in many cases, although, of course, it is possible that resources or materials may be lacking. The system depends, above all, on the perception of the importance of its maintenance by those directly involved, therefore, the formalization of specific management roles in prevention and early detection measures is necessary. Including these activities in the routine of the national system of protected areas and as an obligatory item in their management plans will also increase the probability that the actions will continue once the project ends. The lack of practical actions in the management of protected areas is due to the lack of legal basis for implementation of the necessary actions that use technical tools that can generate controversy and the lack of specific technical knowledge. These are two issues that the project will address in order to overcome current limitations and extend the practical actions and effectiveness of biological invasion management.

A.2. Child Project? If this is a child project under a program, describe how the components contribute to the overall program impact.

NA

A.3. Stakeholders. Identify key stakeholders and elaborate on how the key stakeholders engagement is incorporated in the preparation and implementation of the project. Do they include civil society organizations (yes ☒ /no☐)? and indigenous peoples (yes ☐ /no☒)? [124]

[124] *As per the GEF-6 Corporate Results Framework in the GEF Programming Directions and GEF-6 Gender Core Indicators in the Gender Equality Action Plan, provide information on these specific indicators on stakeholders (including civil society organization and indigenous peoples) and gender.*

Project stakeholders (item 3.2.10 in Funbio Project Document)

196. The Project was developed through a participatory process involving a broad group of actors involved in biodiversity conservation. Several actors were consulted during the drafting stage and are involved in performing certain tasks throughout the project. In some cases, these stakeholders may also be direct or indirect beneficiaries of the project. The following table (Table 7) identifies the stakeholders that have interest in or may influence the design, implementation and results of any or all the components. The role of each actor is presented following the Governance Structure proposed in item 4.1, of Component 4:

Table 7. Table with the main actors identified for the Pro-Species Project

Actors/Stakeholder	Function	Sector
Ministério do Meio Ambiente - Ministry of the Environment/MMA	Coordination	Federal Government
Instituto Chico Mendes de Conservação da Biodiversidade - Chico Mendes Institute for Biodiversity Conservation	Executive Committee	Federal Government
Instituto de Pesquisas Jardim Botânico do Rio de Janeiro - Rio de Janeiro Botanical Garden Research Institute	Executive Committee	Federal Government
Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis - Brazilian Institute of the Environment and Renewable Natural Resources	Executive Committee	Federal Government
Fundo Brasileiro para a Biodiversidade - Brazilian Biodiversity Fund	Coordination/ Implementing Agency	NGO
União Internacional para a Conservação da Natureza/UICN International Union for Conservation of Nature/IUCN	Coordination/Executive Agency	NGO
Órgãos estaduais de meio ambiente - State Environmental Agencies	Operational Centers	State Governments
Agência Nacional de Águas – National Water Agency /ANA	Partner	Federal Government
Serviço Florestal Brasileiro – Brazilian Forest Service - SFB	Partner	Federal Government
Empresa Brasileira de Pesquisa Agropecuária - Brazilian Agricultural Research Corporation /Embrapa	Partner	Federal Government
Fundação Oswaldo Cruz - Oswaldo Cruz Foundation	Partner	Federal Government
Agência de Vigilância Sanitária - Health Surveillance Agency / Anvisa	Partner	Federal Government
Secretaria de Defesa Agropecuária - Secretariat of Agricultural and Livestock Defense /MAPA	Partner	Federal Government
Centro de Pesquisas Ambientais do Nordeste - Northeast Environmental Research Center/CEPAN	Partner/Beneficiary	NGO
Conservation Biogeography Lab, Universidade de Goiás/CBLab-UFG	Partner/Beneficiary	Academic

Local communities and associations – given the scale and specificity of each PAN, it is not possible to identify each community that may be involved. Nevertheless, each PAN needs to include a participatory approach and consultation process, guaranteeing these stakeholders will participate.	Partner/Beneficiary	Local Communities
Scientific Community/ universities and researchers	Partner/Beneficiary	Academic
Confederação Nacional da Indústria – National Industry Confederation/CNI	Partner/Beneficiary	Private Sector
Confederação da Agricultura e Pecuária do Brasil - Confederation of Agriculture and Livestock of Brazil/CNA	Partner/Beneficiary	Private Sector
Biodiversitas Foundation	Partner/Beneficiary	NGO
Fundação Pró-Natureza - Pro-Nature Foundation/FUNATURA	Partner/Beneficiary	NGO
Coral Vivo Institute	Partner/Beneficiary	NGO
Instituto Hórus de Desenvolvimento e Conservação Ambiental /Hórus Institute	Partner/Beneficiary	NGO
Institutto Mamirauá para o Desenvolvimento Sustentável/Mamirauá Institute for Sustainable Development	Partner/Beneficiary	NGO
Instituto de Pesquisas Ecológicas - Ecological Research Institute/IPE	Partner/Beneficiary	NGO
Laboratório de Aquicultura Marinha - Marine Aquaculture Laboratory/LABAQUAC	Partner/Beneficiary	Academic
National Museum	Partner/Beneficiary	Academic
Ministério da Agricultura, Pecuária e Abastecimento - Ministry of Agriculture, Livestock and Food Supply/MAPA	Partner	Federal Government
Ministério de Ciência, Tecnologia, Inovação e Comunicação- Ministry of Science, Technology, Innovation and Comunication/MCTIC	Partner	Federal Government
Ministério dos Transportes, Portos e Aviação Civil - Ministry of Transport, Ports and Civil Aviation	Partner	Federal Government
Ministério Público da União - Federal Public Prosecutor Office/MPU	Partner	Federal Government
Ministério do Desenvolvimento Social e Agrário - Ministry of Social and Agrarian Development/MDS	Partner	Federal Government
Oceana Brasil	Partner/Beneficiary	NGO
Federal Police	Partner	Federal Government
Land owners implementing CAR	Partner/Beneficiary	Private Sector
Sociedade para Conservação das Aves do Brasil - Society for the Conservation of Brazilian Birds/SAVE Brazil	Partner/Beneficiary	NGO

Sociedade de Pesquisa em Vida Selvagem e Educação Ambiental - Society for Wildlife Research and Environmental Education/ SPVS	Partner/Beneficiary	NGO
Non-profit sector in PAN target areas and/or working with Invasive Alien Species	Partner/Beneficiary	NGO

197. Identifying stakeholders for this project will include a diverse distribution of actors, depending on the component, territory of action, implementation phase and degree of involvement.

198. For example, the most important stakeholders for Component 3 are representatives of state environmental agencies, NGOs, productive sectors and the technical-scientific community. All of these representatives will be involved in the project during the application of the early detection system, through participation in informational events and technical trainings.

199. Therefore, all the actors will have the opportunity to indicate which activities they can collaborate with, according to their training, knowledge and availability, creating flexibility for integration of the volunteers. The results generated by this network will be disseminated through the implementation of the project communication plan.

200. Current PAN design practice already include consultation and broad participation of local stakeholders. Within the project, this practice will continue and will be registered, including gender-segregated data. It is not possible to identify all possible stakeholders in each possible territory in advance, but during PAN design it´s not only possible but part of the current consultation process.

Indigenous Peoples and Traditional Populations (item 3.2.11 in Funbio Project Document)

201. In Brazil, people that live off the countryside, forests and water; indigenous peoples and traditional rural and urban communities have been leading biodiversity conservation throughout history. They have promoted food sovereignty and security through the sustainable use and management of natural resources, based on their specific knowledge and ways of life. Thus, this aspect was considered in the analysis carried out to choose project intervention areas.

202. According to the National Policy on Territorial and Environmental Management of Indigenous Lands (PNGATI) [125], the territories used by indigenous populations and traditional communities are protected against the expansion of economic activities and of deforestation, especially in the Amazon, reinforcing their strategic role in biodiversity conservation and the maintenance of ecosystem functions. For this reason, this project will not work in Indigenous Territories, as with protected areas, except in cases where there is indirect interference in the territory which will require actions to ensure conservation and sustainable use of biological diversity and the equitable sharing of the benefits derived from the use of traditional knowledge.

203. Nevertheless, in the two Amazon territories identified by the project, there is a small chance that non-contacted indigenous people live there. This is a classified information held by FUNAI, the Brazilian Agency for Indigenous People, and follow Brazilian policy of respect the desire of indigenous people to remain uncontacted by the non-indigenous people. Before any activity of elaborating PANs for these territories take place the Environmental Ministry will make an official consultation for FUNAI, and in the small chance those territories have uncontacted indigenous people, what should be the project approach regarding their right to be consulted and give consent and their own desire of keeping uncontacted.

Consultation processes for the project's preparation (item 3.2.12 in Funbio Project Document)

[125] Política Nacional de Gestão Territorial e Ambiental de Terras Indígenas (PNGATI), Available at: <http://www.funai.gov.br/pngati/> Accessed on: 27 Jan 2017.

204. During the conception process of the Pro-Species Project, meetings were held to ensure participation of previously identified stakeholders. Participating in these meetings were members of the government and non-governmental organizations:

a) Federal Government: MMA, JBRJ, SFB, ICMBio and IBAMA;
b) State Environmental Agencies: Bahia, Pará, Pernambuco, Piauí and Santa Catarina;
c) Non-Governmental Organizations: CBLab, CEPAN, FUNBIO, Biodiversitas Foundation, FUNATURA, Coral Vivo Institute, Hórus Institute, Mamirauá Institute, IPE, LABAQUAC, National Museum, Oceana Brazil, SAVE Brazil, SPVS and IUCN

205. These meetings resulted in the following: i) qualification of the project's logical matrix; ii) recommendations and prioritization of macro-activities regarding their impact on project results; iii) survey of parallel activities that are planned, in progress, or that could be developed with contribution from the project.

206. In addition to the information derived from the meetings with the agencies identified above, additional contributions and information were received from different sectors of MMA, JBRJ, ICMBio and IBAMA. The project document has also undergone reviews and received contributions from global and Latin American IUCN Senior Officials, as well as a senior consultant specializing in biodiversity conservation and the CBD (Attachament V).

A.4. Gender Equality and Women's Empowerment. Elaborate on how gender equality and women's empowerment issues are mainstreamed into the project implementation and monitoring, taking into account the differences, needs, roles and priorities of women and men. In addition, 1) did the project conduct a gender analysis during project preparation (yes ☒ /no☐)?; 2) did the project incorporate a gender responsive project results framework, including sex-disaggregated indicators (yes ☒ /no☐)?; and 3) what is the share of women and men direct beneficiaries (women X%, men X%)? [126]

Gender integration (item 3.2.13 in Funbio Project Document)

207. Women's contributions and knowledge should be recognized and valued in the processes of proposition, planning, construction, decision-making and in the implementation of policies, programs and activities aimed at biodiversity conservation. For this reason, this project will seek the full participation of women at all levels of planning and execution of activities. Especially through involvement in the coordination and monitoring structure of the project, formed by commissions, committees and operational centers.

208. Brazil's NBSAP also recognizes "the role of women in role of women in the conservation, preservation and recuperation and management of biodiversity" and determines women participation in all decision levels. This project will follow the NBSAPs directive.

209. Also, during trainings and information dissemination carried out in the project intervention geographical areas, specific invitations will be made to women audience in order to encourage equal participation. The need for gender equality will be considered in the technical area and in the distribution of responsibilities for the execution of activities. In the Bolsa Verde Program, for example, the beneficiary family is represented by women in all phases: registration, signing the required documentation and receipt of the benefit. Considering that one of the actions foreseen in this project is the identification of new geographical areas and new families to expand the program, it will be possible to verify the project's impact on this theme at the end of its implementation.

210. During PPG phase various meetings with stakeholders were held, women were the majority of all meetings with an average of 64% women participation. Attendees were government officials from the federal, state governments and non-profits staff. There is

[126] Same as footnote 8 above.

a general lack of gender disaggregated information in Brazil that undermines in depth gender analysis. During project discussions and Funbio inputs for gender integration, a workaround was established. All project activities with local beneficiaries will gather disaggregated data and a new assessment of gender mainstreaming will be made at the project Mid Term Review. This review will use the initial disaggregated data gathered, which are not available today, and make recommendations for action and adjustments, if needed.

A.5 Risk. Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

Project Risk Management (item 3.2.14 in Funbio Project Document)

211. A risk analysis was carried out during the document preparation phase and analyzed in a validation meeting with stakeholders to achieve an effective and sustainable resource management solution for the Pro-Species project. These are summarized on Table 8 below:

Table 8. Summary table of the risks and mitigations proposed for the Pro-Species Project

Risks	Level	Proposed mitigation
Low involvement of the state environmental agencies	Medium	Strengthening of the Pro-Species Program coordinated by MMA, with involvement of state agencies, with ABEMA support, in the elaboration and implementation of the national strategy.
Delays due to insufficient coordination between participants	Medium	The Technical Cooperation Agreement that will be signed by the Federal Government and the Executive Agency, as well as the subsidiary agreements with other participatory agencies will effectively establish the commitments of each agency (financial, technical and others), including the Project execution phase. The Operational Manual of the Program (OMP) will contain the specific responsibilities of the participating agencies in providing timely technical and financial reports for the various programs under their responsibility that are part of the project's parallel funding structure. Regular coordination meetings will be held with the implementers and partners.
Low co-financing commitments due to low prioritization and/or political support for conservation measures	Low	Commitment letters were solicited and obtained from participating agencies with much bigger co-finance pledges that were estimated at PIF stage. Nevertheless, the pledges made are not being considered at face value due to the political and economic instability Brazil is facing. Project coordination will seek to guarantee each commitment is fulfilled and co-finance will be tracked during project monitoring activities. The risk is considered low because of the strong commitment showed in the letters received and the number of

		participants, even if some may face financial difficulties.
Change in the exchange rate with the Real gaining value in relation to the US Dollar	High	There is substantial fluctuation in exchange rates in Brazil in the last year. It is difficult to forecast when the exchange rate will start to follow a steadier path and at which value. The exchange rate used for project planning are not optimistic, but close monitoring on this issue will be made and early adjustments and adaptation of the activities will be assessed every 6 months during project supervision meetings.
Delay in contracting the institution that operationalizes grants	Low	Efforts to finalize this contract are already being done and requirements for project effectiveness are already starting being prepared.
Difficulties in implementing the institutional intelligence structure to combat crimes against fauna and flora	Medium	Specific training of agents that will participate in the new intelligence system and good registration of procedures and policies to mitigate eventual staff turn over.
Resistance from the productive sector to mitigation actions related to the use or impacts in native species	Medium	Informative campaigns will be carried out to disseminate the potential benefits of sustainable management of biodiversity. This will be part of the general communication strategy of the Project. Once guidelines are published and state agencies have in house capacity to use them, it would be a legal liability not to follow the guidelines during the licensing process and non-compliance can greatly impact project financing.
Low public participation in the awareness raising campaigns about trafficking of native species	Medium	Use of diverse communication tools to increase awareness, including printed material, various media and communication outlets.
Difficulty in implementing the National List of Invasive Alien Species (IAS)	Medium	Separate the listed species in distinct categories to ensure that they can still be used for specific productive purposes, restricting secondary functions of the list.
Inability to regulate the use of IAS and difficulty in gaining approval of other pertinent legal frameworks through related to the risk analysis system	Medium	Definition of detailed protocols and records. Risk analyses to be conducted by professionals from government agencies or other authorized institutions with recognized technical responsibility.
Low collaboration with the IAS early detection system	Medium	Inclusion of many institutions and people in the network in all the Brazilian biomes and formalization of cooperation agreements, as well as promotion of the system all around the country, especially in high-priority geographical areas.
Resistance to management and control of IAS	Medium	Technical training of people ready for/interested in these actions

Capacity of executing agency	Medium	Although IUCN has an extensive experience in the subject of the project, the project itself is bigger than the usual project size executed by IUCN Brazil. This will be mitigated by close monitoring by Funbio based on a thorough due diligence. Funbio's own experience in executing GEF projects will help foresee executing obstacles.

A.6. Institutional Arrangement and Coordination. Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

Project governance and institutional Arrangement (item 3.4 in Funbio Project Document)
Institutional arrangements for implementation (item 3.4.1 in Funbio Project Document)

212. The most effective way to reduce the loss of biodiversity, conserve and implement it is to obtain the collaboration and cooperation of individuals, organizations and social groups, and involve them in conjunction with the key actors to participate actively towards a common goal. It is proposed in component 1 a governance structure whose objective will be to coordinate all other project components and institutions involved, in order to improve communication and cooperation between the different stakeholders. In addition, it is expected that new partnerships for the conservation of the species are signed throughout the project implementation, improving and strengthening the governance of the project arrangement.

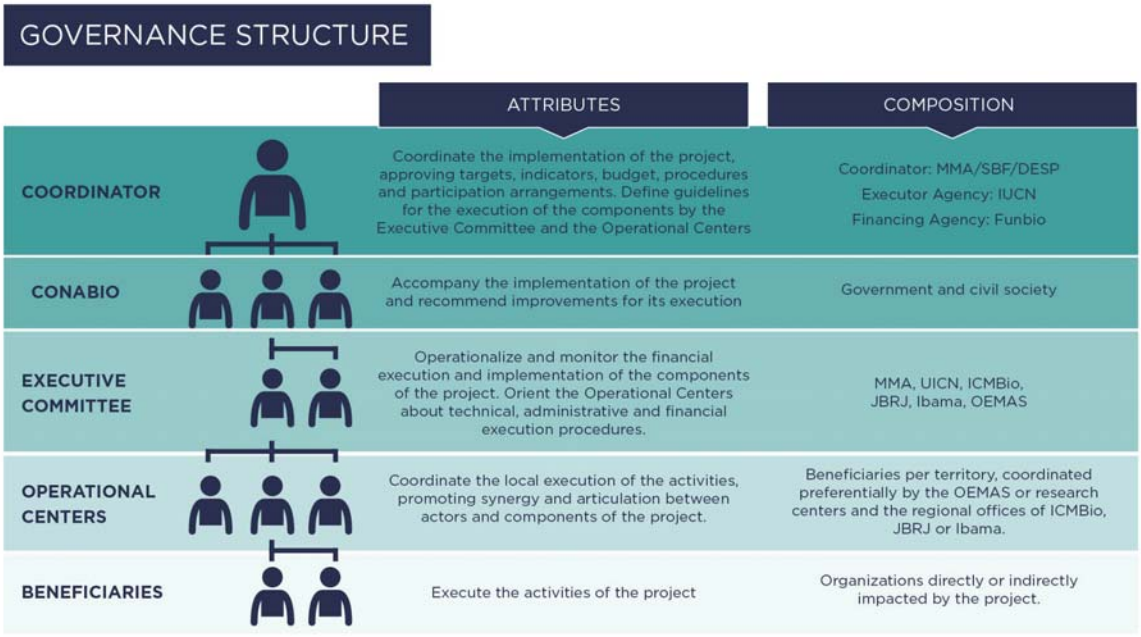
213. For the establishment of institutional intelligence structure for combating crimes against fauna and flora, component 2, will be consolidated and a network of actors from federal and State regulators, the Federal Police, Federal Highway police, military police, Civil Police and Prosecutors will be trained.

214. For the implementation of the system of early detection of invasive alien species key partnerships will involve the ICMBio, IBAMA, the Federal agencies sector, State environmental agencies, environmental NGOs, research and teaching institutions, associations of undertakings which may substantially contribute with information of occurrence (e.g. forestry) and ordinary citizens who are attending natural areas. Cooperation agreements will be established with the relevant institutions. Positions of responsibility (staff posts) shall be established or designated by the main agencies to ensure the continuity of actions after the end of the project, including the assignment of new responsibilities to existing positions (staff posts).

Coordination and monitoring mechanisms (item 3.4.2 in Funbio Project Document)

215. The Project will be coordinated by MMA, through the Biodiversity Secretariat (SBF), with involvement from IBAMA, ICMBio JBRJ and SFB, as well as state environmental agencies (OEMAs). A governance structure will be formed for this coordination, composed mainly of representatives of these agencies. They will meet periodically with the goal of planning and monitoring the activities and results of the project (Fig. 18). The project will count on the International Union for the Conservation of Nature, IUCN, as the executor agency and the National Biodiversity Fund, Funbio, as the GEF implementing agency.

216. CONABIO will be directly involved in monitoring the project. The documents produced in the PIF and Full Project phases were presented to the members of CONABIO for discussion and to incorporate suggestions. This will also be done during the execution of the project, which will



guarantee involvement of representatives of various impacted sectors, such as academia, civil society and other public agencies[127].

Figure 18. Project coordination and monitoring structure

217. The Executive Committee, composed by the MMA and ICMBio, JBRJ, SFB, IBAMA, IUCN and state environmental agencies (OEMAs), will be responsible for operationalizing and monitoring the financial execution and implementation of the components of the project. It will also have the role of orienting the Operational Centers about technical, administrative and financial procedures. The Operational Centers will be responsible for the local execution of the activities, promoting synergies and articulations between local actors and components of the project. These centers will be composed of beneficiaries per territory, coordinated, preferentially, by the OEMAs or research centers and regional offices of ICMBio, JBRJ, SFB and IBAMA.

218. The progress of the project will be evaluated by indicators directed specifically to monitor: the improvement of the national strategy and of the governance structure of the Pro-Species program, greater integration of threatened species into sectoral policies, advancement of the territorial PANs, creation of an intelligence structure to combat crimes against fauna and flora and the creation of a warning and early detection system for invasive alien species and the integration of biodiversity databases for qualified decision-making.

Coordination with other initiatives (item 3.4.3 in Funbio Project Document)

219. The Ministry of the Environment participates directly in various international treaties, agreements and conventions about biodiversity. It is essential to work with technical and financial support of international cooperation projects when dealing with this topic in order to support the Brazilian government in fulfilling the assumed commitments and creating good solutions for the global environmental problems that affect all countries.

[127] Composition of CONABIO: MMA, IBAMA, Science and Technology Ministry, Agriculture Ministry, Health Ministry, Foreign Relations Ministry, Budget and Planning Ministry, Agrarian Development Ministry, National Integration Ministry, Brazilian Association of State Enviroment Agencies, National Confederation of Agriculture Workers, Brazilian Academy of Sciences, Brazilian Non-profits and Social Movements Forum, Brazilian Amazon Indigenous Organizations Coordination, Agriculture and Cattle Confederation of Brazil, National Industry Confederation, National Fisherman Movement and Brazilian Society for the Advancement of Science.

220. Specifically regarding the theme of biodiversity, MMA, through its Biodiversity Secretariat, currently coordinates 17 projects (Table 11), the majority of which utilize GEF and Brazil-Germany cooperation resources. In order to guarantee that the supported actions complement each other, SBF establishes phases throughout the development and implementation of the projects to carry out exchanges, assessments and alignment between them.

Table 11. International Cooperation Projects coordinated by the Biodiversity Secretariat of MMA, with the greatest potential synergy with GEF Pro-Species are highlighted

- ARPA - "*Programa Áreas Protegidas da Amazônia* – Protected Areas of the Amazon Program"
- PNUD BRA/11/001 – "*Apoio para a implementação dos compromissos das Convenções internacionais que tratam da biodiversidade* – Support for implementation of the commitments of international Conventions that deal with biodiversity"
- PNUD BRA/12/G31 – "*Planejamento Nacional da Biodiversidade para Apoio à Implementação do Plano Estratégico da Biodiversidade 2011-2020 no Brasil* – National Biodiversity Planning for Implementation of the Strategic Plan 2011-2020 in Brazil"
- GEF MAR Project – "*Projeto Áreas Marinhas e Costeiras Protegidas* – Marine and Coastal Protected Areas Project"
- LifeWeb Project – "*Estruturação do Sistema Nacional de Unidades de Conservação (SNUC)* – Structuring of the National Protected Areas System"
- GEF Terrestre Project - "Conservation, Restoration and Sustainable Management Strategies to enhance Caatinga, Pampa and Pantanal Biodiversity"
- GEF Regional Project - "*Programa Paisagens Sustentáveis da Amazônia* – Sustainable Amazon Landscapes Program"
- TEEB Regional-Local Project – "*Conservação da Biodiversidade por meio da Integração de Serviços Ecossistêmicos em Políticas Públicas e na Atuação Empresarial* – Biodiversity Conservation through Integration of Ecosystem Services in Public Policies and Business Activities"
- TFCA Project – "Tropical Forest Conservation Act (TFCA)"
- "*Biodiversidade e Mudanças Climáticas na Mata Atlântica* – Biodiversity and Climate Change in the Atlantic Forest" Project
- BFN Project – "Biodiversity for Food and Nutrition"
- GEF Áreas Privadas Project - "Realizing the biodiversity conservation potential of private lands in Brazil"
- GEF ABS - "Capacity Building and Institutional Strengthening on the National Framework for Access and Benefit Sharing under the Nagoya Protocol"
- GEF Cadeias Produtivas – "Sustainable, accessible and innovative use of biodiversity resources and associated traditional knowledge in promising phytotherapic value chains in Brazil"
- USAID Project – "*Conservação dos Recursos Biológicos da Amazônia* – Conservation of the Biological Resources of the Amazon"
- PNUMA Project - "*Fortalecendo a colaboração entre o Brasil e o PNUMA em Acordos Multilaterais Ambientais relacionados à biodiversidade* – Strengthening collaboration between Brazil and the PNUMA in Multilateral Environmental Agreements related to Biodiversity"

221. The majority of these projects work across the Brazilian territory, where most of the resources are allocated to consolidating protected areas. Other projects, with a more local focus, are directed towards ecosystem recovery and sustainable biodiversity management.

222. This is why the GEF Pro-Species project was developed specifically to execute activities complementary to these projects, in a coordinated and articulated way, with a focus on conservation of threatened species with absence or low occurrences in protected areas and that don't have specific management instruments in place for their recovery. Therefore, opportunities generated by other projects are taken advantage of and costs are diminished, especially with mobilizing local actors.
223. The GEF Mar project, for example, calls for the definition of fishing exclusion areas, where the studies and knowledge generated through Component 1 of this project, especially during the assessment of the conservation status of species, will subsidize the implementation phases of the fishing exclusion areas and indication of fishing management measures.
224. Another important project is the GEF Terrestre. This project, whose goal is to support implementation of conservation, recovery and management of biodiversity in the Caatinga, Pampa and Pantanal biomes, also calls for elaboration and implementation of PANs, as does this GEF Pro-Species. Therefore, these two projects are coordinated in an integrated way, with the goal of reaching greater synergy in the activities of both, since the focus of the GEF Terrestre is restricted to three Brazilian biomes and prioritizes activities in protected areas.
225. The majority of projects coordinated by the Biodiversity Secretariat that act outside the boundaries of protected areas work with the establishment of ecological corridors. The GEF Private Areas and GEF Sustainable Amazon Landscapes, for example, as well as GEF Pro-Species, incentivize native vegetation conservation and recovery activities and work to allocate Legal Reserves in areas relevant to threatened species conservation, reestablishing the ecological flow between protected areas.
226. Specifically, the GEF Private Areas hopes to develop subsidies for the inclusion of biodiversity and ecosystem services values in the Forest Code (Sicar, PRAs, CRA, PSA etc.) by evaluating the importance of these native vegetation areas in private lands for biodiversity conservation (including from the perspective of threatened species) and provision of ecosystem services. In this context, the project also calls for the creation of incentives (for example, bank credit adjustments for access for financing of sustainable agriculture and forest management) for the conservation of biodiversity and provision of ecosystem services on private lands. Therefore, the activities developed by the GEF projects coordinated by the Biodiversity Secretariat will be complementary and will contribute to the conservation of species and ecosystems across Brazil's entire territory.

Communication (item 3.4.4 in Funbio Project Document)

227. The needs for sustained and continuous communication and integration of interventions at community, sectoral and national levels is essential for the success of the project. For this reason, a communication, education and public awareness (CEPA) strategy will be implemented to increase awareness, help with greater integration with biodiversity and ecosystem values, facilitate resource conflict resolution and management of stakeholders.
228. To guarantee consistent and sustained communication for the project, the CEPA strategy will look to cover the main information about why the project is being implemented, its actions and activities in impacted regions, the importance of the project to local communities and what has been and what will be done, including planning and results.
229. The planned communication strategy looks to integrate the relationships and learning processes that sustain innovation between decision makers, coordinators, actors, institutions and organizations, as well building trust mechanisms, understandings and shared agreements needed to act and reduce conflict. With the correct management of these processes, a sense of appropriation of the problem and solutions will be developed, whereby actions can be sustained in the long term.
230. The CEPA strategy will construct and utilize existent platforms, whenever possible, such as the Biodiversity Portal, to disseminate information about the project and develop technological interactive tools, customized for different publics, through the production of differentiated and regionalized content according to the impact areas. These will be used to disseminate information

about the project documents, activities, outputs, publications and results. The information will be focused on regional threatened species for knowledge and awareness of the local population. Campaigns regarding wildlife trafficking and invasive alien species as important threats to biological diversity will be carried out. The early detection and rapid response system will be amply promoted during these campaigns.

Additional Information not well elaborated at PIF Stage:

A.7 *Benefits.* Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?
Impacts of the project (item 3.2.6 in Funbio Project Document)

231. The impacts foreseen by the Pro-Species Project are related primarily to elements of biodiversity, with emphasis on threatened species that are not currently covered by any conservation measures, especially species currently not covered in existing protected areas and action plans. The actions planned for the project aim at improving conservation status and reducing the risk of extinction of these species, maintaining biodiversity, which, in turn, guarantees the services and functions of the ecosystems to which the species are related.

232. The Project foresees the potential for action in 24 priority geographical areas, which will benefit 2,755 threatened species, with 705 Gap-species (of these, 290 CR Gap-species). The project is expected to support measures to expand knowledge on 34 CR Gap-species that have a high degree of endemism or have only historical records. The goal is to confirm the occurrence of these species and to define measures for their protection, including the recognition of new AZE sites.

233. By the end of 2016, 2,450 threatened species were under some protection measure in Brazil. By 2021 a total of 3,108 threatened species will be covered by protection measures, which will directly impact threatened species conservation in Brazil, that is, 95% of the total threatened Brazilian species will be under some protection measure.

234. Regarding implementation of management actions, the project foresees the creation of a governance structure that will implement strategies for threatened species conservation, which will help to incorporate actions related to threatened species into sectoral policies and regulatory frameworks, both at the national level as well as the sub-national level with greater participation of the States.

235. By creating conditions for incorporating threatened species conservation into sectoral policies, it is expected that productive sector activities will be impacted by guidelines and orientations through sensitivity maps to define where projects and compensation and restoration areas may be allocated, with the goal of conserving the areas covered by the project. These actions will be supported by trained and capable licensing agencies.

236. The integration of available biodiversity databases will bring changes in the quality of information and the availability of this information to different accessibility profiles, according to users. The management of this information will be optimized and will speed-up decision making.

237. With the establishment of the system to combat illegal hunting, fishing and vegetal extraction and illegal traffic of fauna and flora, and implementation of intelligence structure, based on the ICCWC model, illegal hunting rates and illegal trade in species (including mammals, birds, fish and plants) is expected to reduce. For the application of the new system and intelligence structure, public enforcement agents and police will be trained, including agents from Ibama, ICMBio, Federal Police, Federal Highway Police, Military Police, Civil Police and OEMAs, as well as the state forestry and environmental police. In addition, awareness and sensitivity of society will be increased through educational campaigns.

238. The establishment of early detection and prevention systems for invasive alien species reduces the risk of extinction of threatened species by preventing the progression of biological invasions. This

prevents impacts of competition or predation and changes in the natural environment that could hinder the survival of native species. Climate change helps biological invasions by causing environmental disturbances that create conditions to which native species have difficulty to adapt. Invasive alien species aggravate the effects of climate change, creating a continuous feedback process to the detriment of biological diversity. Recognition of a national invasive alien species list will bring significant impacts by guiding environmental restoration efforts and promoting the qualification of economic sectors to use or produce invasive species. A significant increase in the number of people with technical knowledge on the subject is also a positive impact of the project in the country.

Local project benefits (item 3.2.7 in Funbio Project Document)

239. The actions proposed by the Project will bring a series of local benefits for the conservation of Brazilian biodiversity, especially for 290 Critically Endangered Gap-species, which will be contemplated by at least 12 PANs with a territorial approach over at least 9 million hectares. These will also include gap-species in other threat categories.
240. One project benefit will be the integration and strengthening of existing biodiversity information and database systems, which will ensure the quality and availability of information on Brazilian fauna and flora, support species assessments and keep lists of threatened species up-to-date. The quality of information will also ensure effective planning for protection and conservation actions for threatened species, such as the development and implementation of PANs. The implementation of the PANs through the Pro-Species Project will bring direct benefits to the populations of the intervention areas, by involving local communities in the adoption of environmentally friendly practices and in the protection of threatened species. On the other hand, some will be included in government programs, such as Bolsa Verde, and will receive guidelines for environmental regularization of rural properties.
241. The actions foreseen in components 2 and 3 not only benefit wildlife with actions to mitigate overexploitation, illegal extraction and illegal trafficking and prevention and combat of invasive alien species, but will benefit local agents through training for these activities. The systems envisaged for both components will contribute to the involvement of the different actors remotely and will aid in information dissemination and ensure efficient communication to articulate actions.
242. A communication strategy based on the CEPA model, which considers the intersection of the proposed components, will benefit the project through the collaboration and cooperation of individuals, organizations and social groups, as well as the engagement of key actors actively participating in pursuit of a common goal. With correct management of these processes, a sense of appropriation of the problem and the solutions will be developed, whereby actions can be sustained in the long term. The information transmitted will focus on regional threatened species, bringing knowledge and awareness to local populations.

Global environmental benefits (GEBs) (item 3.2.8 in Funbio Project Document)

243. GEF's support to the Pro-Species project will be instrumental in leveraging co-financing in the short and medium term. The project is geared towards reaching global biodiversity conservation targets and is therefore aligned with the GEF strategy 6, prioritizing the three main drivers of biodiversity loss: (i) habitat loss, (ii) overexploitation, (iii) invasive alien species, which remain the most critical to the achievement of the Aichi targets and are largely responsible for current trends in biodiversity loss.
244. The project's approach will ensure that GEF's investments reach large-scale impacts while providing global environmental benefits (GEBs): by creating conservation actions for threatened species, including strengthening conservation instruments, incorporation of protection measures for threatened species into sectoral policy instruments, institutional intelligence to combat crimes against fauna and flora, awareness and engagement of local communities to prevent and combat crimes against fauna and flora, creation of a warning and early detection system of invasive alien

species and implementation of protection actions to the most threatened species in territorial areas prioritized. Ensuring the integrity of ecosystems through these actions will help maintain the essential ecosystem services and human populations that directly benefit from them.

245. The Project foresees the potential for action in 24 priority geographical areas, which will benefit 2,755 threatened species, with 705 species being gap species (of these, 290 CR-gaps, of which 262 are endemics). The project is expected to support measures to expand knowledge on 34 species of CR-gaps that have a high degree of endemism or have only historical records.

246. The project objectives will help the Brazilian government to achieve the Aichi targets, more specifically target 1 (by 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably); target 6 (by 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on endangered species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits); target 7 (by 2020, by 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity); target 9 (by 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment); target 12 (by 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained); target 19 (by 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied).

247. In addition to the Aichi Targets, the project will contribute to other global initiatives such as: Global Strategy for Plant Conservation (GSPC) target 2 (a preliminary assessment of the conservation status of all known plant species, at national, regional and international levels); target 3 (development of models with protocols for plant conservation and sustainable use); target 4 (at least 10% of each of the world's ecological regions effectively conserved); target 7 (60% of the world's threatened species conserved *in situ*) and target 15 (the number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this strategy). Sustainable Development Goals (SDGs): Goal 14 (conserve and sustainably use the oceans, seas and marine resources for sustainable development) and Goal 15 (protect, restore and promote the sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss); Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) and Convention on the Conservation of Migratory Species of Wild Animals (CMS).

2.5 Contributions expected from the project (item 2.5 in Funbio Project Document)

Government targets (item 2.5.1 in Funbio Project Document)

Pluriannual Plan of the Union 2016-2019 (*Plano Plurianual da União 2016-2019*)- Conservation and Sustainable Use of Biodiversity Law num. 13,249, of January 13, 2016	Improve tools to prevent extinction, recover populations and promote knowledge and sustainable use of species of Brazil's biodiversity.
Pluriannual Plan of the Union 2016-2019 (*Plano Plurianual da União 2016-2019*) - Fisheries and Aquaculture Law num. 13,249, of January 13, 2016	Promote planning, monitoring and control of fishing activities
NBSAP/National Biodiversity Targets for 2020 - CONABIO Resolution num. 6, of September 3, 2013.	**National Target 1:** By 2020, at the latest, the Brazilian population will be aware of the values of biodiversity and the steps they can

	take to conserve and use it sustainably. **National Target 6:** By 2020, all aquatic organism stocks will be managed and harvested sustainably, legally and through ecosystem based approaches so that overexploitation is avoided, recovery plans and measures for depleted species are put in place, fisheries will have no significant adverse impacts on endangered species and vulnerable ecosystems, and to ensure that the impacts of fisheries on stocks, species and ecosystems remain within safe scientifically established ecological limits. **National Target 7:** By 2020, sustainable management practices will be disseminated and fostered in agriculture, livestock, aquaculture, forestry, extractivism, forest and fauna management activities, ensuring conservation of biodiversity. **National Target 9:** By 2020, the national strategy for invasive alien species will be fully implemented, with the participation and commitment of the states and formulation of a national policy, ensuring the continued and updated survey of species and effectiveness of the prevention, containment and control action plans. **National Target 12**: By 2020, the risk of threatened species extinction will have been reduced significantly, getting close to zero, and their conservation status, particularly of those most in decline, will have improved. **National Target 19:** By 2020, the scientific base and technologies required to understand biodiversity, its value, functioning, and trends as well as the consequences of its loss will have been broadened and shared. Sustainable use, technology generation and innovation from biodiversity will be supported, duly transferred and applied. By 2017, the complete compilation of existing aquatic and terrestrial fauna, flora and microbiota records will be finalized and made available in permanent and free databases, with some specific exceptions, in order to identify knowledge gaps about biomes or taxonomic groups.
Strategic Planning of the Ministry of Environment	1. National Action Plans for the Conservation of Threatened Species (*Planos de Ação Nacionais para Conservação de Espécies Ameaçadas de Extinção* - PANs) and other conservation tools implemented for 100% of endangered species by 2022. 2. National Program for Invasive Alien Species Control established, with

	prioritization of species and National Action Plans for the Control, Monitoring and Eradication of Invasive Alien Species.
National Biodiversity Policy (*Política Nacional da Biodiversidade* - PNB) Decree Num. 4,339, of August 22, 2002	Consolidation of *in situ* conservation actions for species that make up biodiversity, aiming to reduce genetic erosion, promoting conservation and sustainable use, particularly of threatened species and also the associated ecological and evolutionary processes and the maintenance of ecosystem services.
National Policy for the Sustainable Development of Aquaculture and Fisheries Law num. 11,959, of June 29, 2009	Sustainable development of fisheries and aquaculture as a source of food, employment, income and leisure, guaranteeing the sustainable use of fishery resources, as well as optimizing the resulting economic benefits, in harmony with the preservation and conservation of the environment and biodiversity.
National Forests Program (PNF) Decree num. 3,420, of April 20, of 2000	1. Increase monitoring of the use of forest resources for the entire national territory; 2. Reduce forest fires and the predatory extraction of timber and non-timber products; 3. Support the processes of decentralization of monitoring, control and inspection activities

Aichi targets (item 2.5.2 in Funbio Project Document)

Target 1 - By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	1. Implementation of communication plans and training for environmental educators, authorities and other stakeholders involved with the species conservation agenda; 2. Communication and engagement campaigns to combat illegal hunting, plant extraction and fishing and trafficking of wildlife; 3. Awarding of the National Biodiversity Prize
Target 6 - By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on endangered species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	1. Use status assessment of the main species of Brazilian aquatic biodiversity affected by fishing activities; 2. Update the list of Threatened Fish and Aquatic Invertebrates; 3. Development and publication of recovery plans for manageable threatened species and definition of control measures for their sustainable fishing; 4. Strengthening of the fishing activity monitoring system and information production.
Target 7 - By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	1. Inclusion of knowledge promotion and sustainable use of the species involved in degraded areas recovery activities; 2. Incorporation of threatened species criteria

	into sectoral policies
Target 9 - By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	1. Development of an early detection and rapid response system for invasive alien species that include pathways analysis and considers the introduction of species in the country, states, protected areas and other areas of importance for biological diversity conservation. 2. Application of early detection and rapid response actions to areas defined as priority for conservation due to the presence of threatened species.
Target 12 - By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	1. Conservation status and vulnerabilities assessment of species of Brazilian fauna and flora threatened with extinction; 2. Revision of the National Lists of Threatened Species; 3. Development and implementation of National Action Plans for the Conservation of Threatened Species (*Planos de Ação Nacional para Conservação de Espécies Ameaçadas de Extinção*); 4. Development of an institutional intelligence structure to combat crimes against fauna and flora; 5. Development and implementation of mechanisms for engaging local communities in priority areas for control of illegal hunting, fishing and plant extractivism.
Target 19 - By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	Integration of biodiversity databases for the development of a Management Panel on threatened species

Sustainable development goals (SDGs) (item 2.5.3 in Funbio Project Document)

Goal 1 - End poverty in all its forms by 2030	1. Inclusion of social programs activities in areas relevant to biodiversity conservation as a way to fight extreme poverty and hunger.
Goal 14 – Conserve and sustainably use the oceans, seas and marine resources.	1. Use status assessment of the main species of Brazilian marine biodiversity affected by fishing activities; 2. Update the list of Threatened Fish and Aquatic Invertebrates; 3. Development and publication of recovery plans for manageable threatened species and definition of control measures for their sustainable fishing and its implementation in priority areas; 4. Strengthening of the fishing activity monitoring

	system and information production. 5. Adoption of preventive measures for the involuntary introduction of marine species in accordance with international protocols, as well as the use of risk analysis to select species for production.
Goal 15 - Protect, restore and promote the sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss	1. Assessment of conservation status of Brazilian fauna and flora species with data deficiency; 2. Update of the List of threatened fauna and flora species; 3. Elaboration and publication of action plans for threatened species and implementation of plans for CR-gap species in priority geographical areas; 4. Inclusion of knowledge promotion and sustainable use of the species involved in degraded areas recovery activities; 5. Incorporation of criteria for threatened species into sectoral policies; 6. Development of an early detection and rapid response system that includes identification of pathways and vectors for introduction and dispersal of invasive alien species focusing on priority geographical areas to reduce the pressure on biodiversity and reverse the degradation of natural and productive areas.

Contributions to other goals and protocols (item 2.5.5 in Funbio Project Document)

Convention / Protocol / Initiative	Project Targets
Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) - Decree Num. 76,623 of 17 November 1975	Increased control of illegal hunting, fishing, trafficking and plant extraction, especially of threatened species
Convention on the Conservation of Migratory Species of Wild Animals (CMS)	Availability of species data in unified information systems and development of plans and implementation of conservation measures to CR-gap species.
Convention on Biological Diversity (CBD)	The project contributes to the overall goals set out in the Convention, in particular the Aichi Goals 1, 6, 7, 9, 12 and 19.
Ramsar Convention of Wetlands	The project contributes to the Ramsar targets 1, 2, 3 and 27.
Global Strategy for Plant Conservation (GSPC)	The project contributes to the GSPC targets 2, 3, 4, 7 and 15

Innovation and project potential gain in scale (item 3.2.9 in Funbio Project Document)

248. The planned actions to integrate and strengthen existing biodiversity database systems will allow managers to quickly access the information they need. This information should be available on an integrated online platform to guide management choices and also through tools that allow cross-referencing of species information with those resulting from the implementation of other public

policies. Tools for analyses from the cross-referencing of this information should also be developed and made available. Maps with sensitivity areas will be provided to define where development projects can be allocated and information material will recommendations of best practices will be distributed to companies and licensing agencies. The Brazilian species databases will be available for different user profiles and accessible to other initiatives, including international ones, enabling the dissemination of information about Brazilian species conservation status and the actions in progress. The integrated information system on biodiversity could be replicated in other places or countries.

249. With the proposed actions of Component 2 for the establishment of an institutional intelligence structure to combat crimes against fauna and flora and consequent improvement of the three existing control systems: SICAFI, SisLiv and Sisfauna, there will be greater flow of information and occurrences of trafficking and environmental crimes and those responsible for them will be more quickly and accurately identified due to more accurate data. The application of criminal sanctions will also be more effective.

250. This new dynamic will allow for spatial analysis of environmental crimes and statistical and intelligence analyses of crimes through maps, guaranteeing greater efficiency in meeting the demands, better definition of competencies and transparency in this service. With integrated databases and improved systems, a network of actors from the Federal and State regulatory agencies, Federal Police, Federal Highway Police, Military Police, Civil Police and Public Prosecutor's Office will be consolidated and trained. After this training, the agents and police will be replicators in their units and states of origin.

251. Management mechanisms and reference guides for prevention and early detection of invasive alien species developed for this project may be used by other countries and other GEF projects. Management practices and results (rapid response) will be recorded and disseminated to enhance replication. A potential gain in scale may occur through the involvement of federal and state environmental agents who disseminate this model of preventive measures as well as the early detection system throughout the network of national protected areas. Management programs established at the state level will also work as a reference for replication. To enhance replication, managers of protected areas will be included in technical training events and the guides produced as part of the project will be distributed to them specifically.

A.8 *Knowledge Management.* Elaborate on the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user-friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

Species Knowledge Management in Brazil (page 39 in Funbio Project Document)

252. The GEF Project "Improving Brazilian Capacity to Conserve and Use Biodiversity through Information Management and Use" was formulated to support the development of an electronic database system of Brazilian species and environmental research projects, called "Brazilian Biodiversity Information System (SIBBr) ". In addition, the Biodiversity Portal[17] was launched to integrate biodiversity databases, including SIBBr, and to make information on Brazilian biodiversity available to society. This portal was supported by the GEF project "PROBIO II" and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) project "Climate relevant Biodiversity Monitoring at the Conservation Areas (UCs) level". These online systems help to manage information generated about biodiversity and maintain a database to support researchers and decision-makers in assessing the risk of species extinction and establishing science-based conservation plans, indicating areas where other management and protection measures are required.

253. The Pro-Species program, as mentioned before, calls for the establishment, updating and integration of databases and information systems as tools for conservation, so that decisions regarding conservation necessarily involve good information management and are founded on robust information. The program aims to comply with global initiatives, such as GBIF[128] and GBIO[129], to promote the mobilization, access, use and analysis of primary data and provision of relevant information on biodiversity for managers and decision makers.

254. Currently, information on endangered fauna and flora species as well as information on action plans are stored in different systems or bases at the ICMBio and the JBRJ, respectively, which makes aggregating the information and carrying out general or specific analyses about threatened species difficult.

255. Whilst these initiatives represent important advances in the management of biodiversity knowledge, it is critical that information on target species be standardized and digitally accessible to facilitate species assessment and Action Plans development and monitoring. Thus, further efforts are needed to integrate the different existing databases; improve tools for robust data management, access and reporting to support policies and management; update databases that are required by law; and develop the capacity to improve decision-making processes and planning tools.

256. Therefore, it is important to create an integrated center for synthesis and analysis of biodiversity information, capable of leveraging the full potential of recent data systematization and digitization efforts (Table 3), aiming for integration of the information resources available in digital format. In addition, this information should be available on an integrated online platform to guide management actions and also enable cross-referencing of the information about the species with those resulting from the implementation of other public policies, such as the Rural Environmental Registry (CAR), of the Priority Areas and Actions for Brazilian Biodiversity Conservation, Sustainable Use and Benefit-sharing, of the Monitoring of Biodiversity in Protected Areas, and information resulting from the increasing availability of Camera Trap images and recordings of songs and calls of birds and Amphibians. These features will be available from enhancement of the Portal of Biodiversity (PortalBio) and integration with SiBBR.

Table 3. Systems and databases for biodiversity in Brazil

System	Description
Brazilian Flora 2020 [130]	*Object*: Official list of Brazilian flora species associated with synonyms, information on morphological characteristics and identification keys *Weakness*: Sustainable maintenance and evolution of the system. *Current products*: Brazilian Flora list, flora identification keys and link with the Virtual Herbarium *Reflora*.
Virtual Herbarium (Reflora)[131]	*Object*: To facilitate the access to exsicates of Brazilian plants existing in herbariums in Brazil and abroad through online availability of high resolution images. *Weakness*: Sustainable maintenance and evolution of the system. *Products*: High resolution images of exsicates of Flora do Brasil in herbaria from Brazil and abroad

[128] GLOBAL BIODIVERSITY INFORMATION FACILITY, GBIF. Available at <http://www.gbif.org/what-is-gbif> Accessed on 07 Apr. 2017

[129] GLOBAL BIODIVERSITY INFORMATICS OUTLOOK, GBIO. Available at <http://www.gbif.org/resource/80859> Accessed on 07 Apr. 2017

[130]FLORA DO BRASIL 2020. Jardim Botânico do Rio de Janeiro. Available at: <http://floradobrasil.jbrj.gov.br/> Accessed on 09 Jan 2017.

[131] HERBÁRIO VIRTUAL (Reflora). Available at: http://reflora.jbrj.gov.brhttp://reflora.jbrj.gov.br/> Accessed on 09 Jan 2017.

Fauna Catalogue [132]	*Object*: Taxonomic List of the Brazilian fauna. *Weakness*: Sustainable maintenance and evolution of the system. Lack of management capacity. Data on endemisms need urgent review and supplementation. *Current Products*: List of the Brazilian Fauna.
Biodiversity Portal[133]	*Object*: Aggregator of Brazilian fauna and flora collection records. *Weakness*: Limited information access for users. *Products*: Species distribution maps, collection records
SISPAN (ICMBio)[134]	*Object*: Wildlife Action Plans Monitoring (under development). *Weakness*: Sustainable maintenance and evolution of the system. *Products*: Execution matrix, monitoring matrix, management panel
SISBIO[135]	*Object*: Permit authorizations to collect biological material and to undertake research in federal protected areas and caves. *Weakness*: Limited information access for users. Products: Gather information on threatened fauna and flora, occurrence records from various initiatives.
CNCFLORA Portal[136]	*Object*: Evaluation of the flora conservation status and elaboration and monitoring of National Action Plans *Weakness*: Sustainable maintenance and evolution of the system. *Products*: List of Brazilian Threatened Flora,

Knowledge management in the Pro-Species Project (item 3.2.16 in Funbio Project Document)

257. During the conception and participative elaboration process of the Pro-Species Project with diverse actors, it was recognized that the only way to reduce biodiversity loss and implement actions for the conservation of threatened species is through collaboration and cooperation of people, organizations and social groups, and in working together with the key actors. Therefore, as described previously in item 4.1 of Component 4, the project aims to develop a strategic model of communication, education and public awareness, CEPA, which plays an important role in developing this collaboration and the changes needed in society. The use of the CEPA model also meets the targets established by the National Strategy and Action Plan for Biodiversity (NBSAP).

258. Communication and information dissemination on biodiversity are key steps for the involvement of society and for behavioral changes in conservation actions. For this reason, the project provides for distribution of informational material with the results of the project regarding fauna and flora, especially threatened species, in order to raise awareness among the population in the intervention geographical areas of the project and on the actions of each component. In addition to distribution of information through printed and other media, campaigns will be held about wildlife trafficking and invasive alien species as important threats to biological diversity, through which the early detection and rapid response system will be widely disseminated.

259. In addition, the establishment of effective conservation strategies requires an integrated perspective of information management on threatened species. Thus, as presented in Component 1, item 1.3.1, the need to integrate quality data and information for rapid decision-making is recognized. Several biodiversity-related issues, such as the definition of priority geographical areas for conservation, the development of action plans and the management of priority area systems, require a major previous effort to compile and qualify information. The integration of

[132] CATÁLOGO DA FAUNA. Available at <http://fauna.jbrj.gov.br/> Accessed on 09 Jan. 2017.
[133] PORTAL DA BIODIVERSIDADE. Available at https://portaldabiodiversidade.icmbio.gov.br/portal Accessed on Jan. 2017.
[134] SISTEMA DE PLANO DE AÇÃO NACIONAL, SISPAN. Available at <http://sispan.cemave.net/> Accessed on 09 Jan 2017.
[135] SISTEMA DE AUTORIZAÇÃO E INFORMAÇÃO EM BIODIVERSIDADE, SISBIO. Available at <http://www.icmbio.gov.br/sisbio/> Accessed on 09 Jan. 2017.
136 PORTAL CENTRO NACIONAL DE CONSERVAÇÃO DA FLORA. Available at <http://cncflora.jbrj.gov.br/portal> Accessed 09 Jan 2017.

existing information systems (see Table 3) with the Biodiversity Portal under the responsibility of ICMBio, MMA, JBRJ, with the participation of the OEMAS is proposed.

260. The actions proposed in Component 2 foresee the establishment of an institutional intelligence structure to combat crimes against fauna and flora and the provision of management reports within the IBAMA's existing control systems. This structure will be composed of a network of actors from federal and state regulatory agencies, involving the Federal Highway Police, Federal Police, Military and Civil Police and Public Prosecutor's Office. In parallel, awareness-raising activities against illegal trafficking and captivity will be carried out, through the elaboration and implementation of a communication plan. The goal is to disseminate essential information and bring awareness to the population about the most common environmental crimes, especially trafficking and receiving wild animals.

261. Component 3 foresees the generation of primary data provided by different actors. These data will be stored in the database of invasive alien species, which will use data from the I3N Brazil Database (GEF - IABIN Project) updated and integrated with other databases. In addition to specific databases, access to the data and the early detection system should be visible on the ICMBio's Biodiversity Portal and on other websites to increase the dissemination and transmission of information. Invasive alien species data will have an easily understandable interface, including images and names commonly used by the public, displayed in simple file form, as well as more complex interfaces for technical-scientific use.

262. The information generated by the project will be the basis for a management panel for the National Strategy for the Conservation of Threatened Species, with integration of data from other projects and related activities that will allow for constant monitoring of the impacts produced by the cooperative projects in the selected territories.

B. Description of the consistency of the project with:

B.1 *Consistency with National Priorities.* Describe the consistency of the project with national strategies and plans or reports and assessements under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.:

Consistency of the project with national priorities (item 3.2.15 in Funbio Project Document)

263. The project was development based on commitments assumed by Brazil and internalized in national standards. The Pluriannual Plan of the Union 2016-2019 [137] (PPA 2016-2019), established by Law num. 12,249 /2016, through the goals of: (i) reducing the threat of extinction of species of Brazilian biodiversity, recovering their populations and promoting knowledge and sustainable use, and ii) promoting the management, monitoring and control of fishing activities.

264. Regarding the National Biodiversity Targets for 2020 [138], instituted by the CONABIO Resolution num. 06/2013, the project contributes to the implementation of the National Strategy and Action Plan for Biodiversity 2020 (NBSAP), mainly to achieve the following national targets: **National Target 1** (by 2020, at the latest, the Brazilian population will be aware of the values of biodiversity and the steps they can take to conserve and use it sustainably); **National Target 6** (by 2020, all aquatic organism stocks will be managed and harvested sustainably, legally and through ecosystem based approaches so that overexploitation is avoided, recovery plans and

[137] Ministério do Planejamento, Orçamento e Gestão. Plano Plurianual 2016–2019: Desenvolvimento, produtividade e inclusão social. Brasília, 2015. Available at: <http://www.planejamento.gov.br/secretarias/upload/arquivo/spi-1/ppa-2016-2019/ppa-2016-2019-ascom-3.pdf> Accessed on: 13 Jan 2017

[138] MINISTÉRIO DO MEIO AMBIENTE. Estratégia e Plano de Ação Nacionais para a Biodiversidade – EPANB. Brasília, DF. Available at <http://www.mma.gov.br/images/arquivo/80049/CDB/EPANB.pdf> Accessed on: 06 Apr. 2017

measures for depleted species are put in place, fisheries will have no significant adverse impacts on threatened species and vulnerable ecosystems, and to ensure that the impacts of fisheries on stocks, species and ecosystems remain within safe scientifically established ecological limits); **National Target 7** (by 2020, sustainable management practices will be disseminated and fostered in agriculture, livestock, aquaculture, forestry, non-timber extractivism, forest and fauna management activities, ensuring conservation of biodiversity); **National Target 9** (By 2020, the national strategy for invasive alien species will be fully implemented, with the participation and commitment of the states and formulation of a national policy, ensuring the continued and updated survey of species and effectiveness of the prevention, containment and control action plans); **National Target 12** (by 2020, the risk of threatened species extinction will have been reduced significantly, getting close to zero, and their conservation status, particularly of those most in decline, will have improved) and **National Target 19** (by 2020, the scientific base and technologies required to understand biodiversity, its value, functioning, and trends as well as the consequences of its loss will have been broadened and shared. Sustainable use, technology generation and innovation from biodiversity will be supported, duly transferred and applied. By 2017, the complete compilation of existing aquatic and terrestrial fauna, flora and microbiota records will be finalized and made available in permanent and free databases, with some specific exceptions, in order to identify knowledge gaps about biomes or taxonomic groups).

265. The Pro-Species Project is integrated into the National Biodiversity Policy (PNB), Decree Num. 4,339/2002, which calls for, among other objectives, the consolidation of *in situ* conservation actions of species that make up biodiversity, with the goal of reducing genetic erosion, promoting conservation and sustainable use, in particular of threatened species, as well as the ecological and evolutionary processes associated with them, and maintaining ecosystem services; and the National Policy for the Sustainable Development of Aquaculture and Fisheries, Law num. 11,959/2009, which recommends the sustainable development of fisheries and aquaculture as a source of food, employment, income and leisure, guaranteeing the sustainable use of fishery resources, as well as optimization of the resulting economic benefits in harmony with the preservation and conservation of the environment and biodiversity. The Project is also integrated to the Brazilian Forestry Policy, in particular the Native Vegetation Protection Law, Law num. 12,651, 25 May 2012, and Law num. 11,284, 2 March 2006, which deals with the Concession and Management of Public Forests for Sustainable Production.

266. The project also includes goals of the Strategic Plan of the Ministry of the Environment, such as: i) by 2022, National Action Plans for the Conservation of Threatened Species (PANs) and other conservation instruments implemented for 100% of threatened species, and ii) institution of an invasive alien species national control program and national action plans for the control, monitoring and eradication of invasive alien species.

C. DESCRIBE THE BUDGETED M &E PLAN:

267. Semi-annual progress report will be prepared by the Executive Committee, with support from the project partners and the executing agency. Those reports will be the base for discussion during Project supervision meetings.

268. Project monitoring meetings will be held every 6 months and will check the progress of the indicators in relation to the annual milestones and the final goals of the project (Table B in annex A). Those meetings will also check on project risks (Table C in annex A) (identified during project planning and new unidentified risks), financial execution, gender disaggregated data, and co-finance.

269. At least once a year a field visit must be made by Funbio monitoring staff accompanied by IUCN and MMA staff.

270. A project midterm review (MTR) will be made close to the 24th month of project execution. This MTR will have the support of an independent analysis made by a consultant. The main goal of the

MTR is to make a reality check on the project assumptions made in the planning phase and need to address the following topics, at least:

a. Execution status and lessons learned;
b. A revision of project Operational Manual (if needed) to address bottlenecks and obstacles encountered during project execution;
c. A revision of Project risks;
d. A revision of safeguard analysis;
e. A revision of gender mainstreaming aspects of the project, using the disaggregated data produced by project activities.

271. A project Final Evaluation will be made with an independent consultant. The main goal of the Final Evaluation is to assess the ability of the project to fulfill its goals and what were the obstacles, innovations, and lessons learned during the project implementation.

272. The project operational manual will further detail monitoring and evaluation activities.

Table A – Monitoring Instruments:

Instrument	Timeframe	Responsible	Budget
Semi-annual progress report	Every 6 months	Executive Committee	Co-Finance resources
Tracking Tool indicators	24th month of project and at project completion	Executive Committee	Co-Finance resources
Mid-term review evaluation report	24th month of project	Executive Committee	Co-Finance and GEF resources
Independent terminal project evaluation	at project completion	Independent Consutant	Co-Finance and GEF resources
Financial reports	Quaterly	IUCN	GEF resources

PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)

A. GEF Agency(ies) certification

This request has been prepared in accordance with GEF policies[139] and procedures and meets the GEF criteria for CEO endorsement under GEF-6.

Agency Coordinator, Agency Name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Fabio Leite - Funbio		10/07/2017	Fabio Leite	+55 21 2123-5326	fabio.leite@funbio.org.br

[139] GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, SCCF and CBIT

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Tables B and C are part of every semi-annual progress report.

Table B: Minimum content of Semi-annual progress reports, Mid-term review evaluation report and Independent terminal project evaluation.

Component or Sub-component	Macro-Activity	Outcomes	Indicators	Annual milestones				Means of verification	Responsible
				Year 1	Year 2	Year 3	Year 4		
1.1. Elaboration and implementation of a national strategy for the conservation of threatened species	Establishment of the National Strategy	Implementation of the National Strategy for Conservation of Threatened Species	National Strategy Preparation	At least 1 meeting				Minutes of meetings between OEMAs and key-players*	MMA
			National Strategy elaboration		1 Conabio meeting			CONABIO formal approval of the National Strategy*	MMA
			Workplan for the National Strategy first evaluation			Workplan		Workplan complete with ToRs and logistics for the first evaluation approved	Executive Committee
			National Strategy implementation evaluation				Evaluation document	Evaluation document presented to CONABIO	MMA
	Elaboration and implementation of PANs	12 Action plans and other conservation initiatives incorporating 290 critically endangered species covering 9 million hectares	PANs Elaboration	3 PANs	9 PANs	12 PANs		PANS approved and published*	MMA
			PANs implementation		3 PANs	9 PANs		Activity reports on PAN implementation*	Operational Centers
			Number of critically endangered species with conservation initiatives		40	170	290	Activity reports on PAN implementation*	Operational Centers
			Area of Conservation initiatives for endangered		1,000,0	5,000,0	9,000,0	Activity reports on PAN	Operational

			species		00	00	00	implementation*	Centers
1.2. Creation of conditions to incorporate threatened species conservation into sectoral policies	Orientations and guidelines for the productive sector or licensing agencies	Guidelines elaborated with orientations about evaluating environmental impacts on threatened species for licensing agencies	Model of the guidelines defined with the licensing agencies	Guideline model				Guideline model approved	MMA
			Number of Guidelines elaborated with information about evaluating the environmental impact on threatened species		1 Guidelines	2 Guidelines	3 Guidelines	Guidelines published	MMA
			Number of guideline trainings for licensing agencies officials			1 training covering 1 guideline	2 trainings covering 2 guidelines	Training reports*	MMA
		Territories evaluated regarding applicability of public policies	Number of territories evaluated for the implementation of Endangered Species responsive public policies	3 territories	9 territories	12 territories		Territory evaluation published	Executive Committee
			Number of territories with policies implemented				3 territories	Reports on the implementation of Endangered Species responsive public policies	Executive Committee
1.3. Threatened species information management	Assessment of the conservation status of threatened species	Updated National Lists of Threatened Species published in Ordinances.	Number of Species conservation status covered by evaluations		3,500 species evaluations	7,000 species evaluations	Updated Red List	Completed Species Evaluations and Updated Red List formally approved*	Executive Committee
		Updated and interlinked information portals	Updated and interlinked information portals				Updated and interlinked informa	Interconnected databases and updated information system	Executive Committee

							tion portals		
2. Component - Control and Prevention of Illegal Hunting, Fishing and Plant Extraction and Illegal Trafficking of Wild Species	Development of the institutional intelligence structure to combat crimes against fauna and flora	Development of tools for combating environmental illegal activity (based on the ICCWC)	Application of the Indicator Framework for Combating Wildlife and Forest Crime, ICCWC	Application of ICCWC				ICCWC Framework applied and presented	MMA and Ibama
			Improvement of existing control systems			3 systems improved and integrated		3 systems improved (SICAFI, SISLIV and SISFAUNA and integrated	MMA and Ibama
			Development of tools for combating illegal environmental activities (based on the ICCWC)				New Tools	Tools developed	MMA and Ibama
	Training of public agents about the new intelligence structure	Completion of the training courses by the students	Development of training content	Training modules				Training modules elaborated	MMA and Ibama
					Manual			Publication of the "Basic manual for enforcement and policing of wildlife"	MMA and Ibama
			Number of Agents trained (multipliers)			100 agents	200 agents	Training reports*	MMA and Ibama
	Mechanisms for sensitizing and engaging local communities to	Awareness and engagement campaigns implemented in at least 1 priority territorial area	Awareness and engagement campaign	Communication proposals				Communication proposals approved by Executive Committee	Executive Committee

	prevent and combat crimes against fauna and flora, created or adapted and implemented				Communication materials			Awareness and engagement communication materials developed and tested	Executive Committee
			Awareness-raising and engagement actions being implemented			Campaign Start		Local communities selected for the promotion of awareness and engagement actions being implemented	Executive Committee
			Evaluation of the results of the awareness and engagement actions implemented				Evaluation	Evaluation of the results of the awareness and engagement actions implemented*	Executive Committee
3. Component - Prevention, Early Detection of and Rapid Response to Invasive Alien Species	Structured management of invasive alien species at a national and sub-national level, including the national reference list and procedures for risk analysis for species introduction	Established Combat Network against invasive alien species and Warning and Early Detection system established	Establishment of Prevention and combat network against invasive alien species implemented		Formal Meeting			Prevention and combat network against invasive alien species implemented in a official meeting*	MMA
			Development of Warning and Early Detection system implemented				System Deployed	Warning and Early Detection system implemented	MMA
	Risk analysis and management risk system of invasive alien species created and implemented	Protocols defined for risk analyses and rapid response to invasive alien species	Number of Protocols elaborated to analyze the risk of introduction of invasive alien species	2	4			Protocols defined and shared with the Prevention and combat network against invasive alien species	MMA
			Development of protocol for the analysis of dispersion pathways and vectors			Protocol for the analysis of dispersion pathwa		Protocol defined and shared with the Prevention and combat network against invasive alien species	MMA

						ys			
			Development of protocols applied for rapid response				3 Protocols elaborated	Protocols defined and shared with the Prevention and combat network against invasive alien species	MMA
	Risk analysis and management risk system of invasive alien species created and implemented	At least one geographic area selected for the implementation of actions to prevent, control and eradicate IAS.	Number of geographic areas selected for the implementation of actions to prevent, control and eradicate IAS.			1 area		Area Defined and Selected	MMA
			Implementation of actions on selected area				Report	Report on status of implementation	MMA
4. Component - Coordination, Monitoring and Communication	Governance framework of the project	Alignment meetings with the Project Coordinating Committee	Number of Project Coordinating Committee	2 meetings	4 meetings	6 meetings	8 meetings	Minutes of Meeting Decisions*	Executive Committee
		Increased capacity for regional management of threatened species	Number of regional centers for threatened species management	3	9	12		Established regional centers	Executive Committee
			Effectiveness of regional centers				Assessment	Assessment of effectiveness of regional centers conducted	Executive Committee
	Strategic Communication Plan	Strategic Communication Plan consolidated based on CEPA	Increase in public perception about threatened species	Survey and CEPA	*	*	*	Survey on the perception of the population about threatened species Project Communication Plan**	Executive Committee

*Gender disaggregated data will be collected and women participation in meetings will be strengthened.

**The Project Communication Plan will define the implementation indicators for years 2, 3 and 4.

Table C: Risks monitoring

Identified Risks	Risk Level	Proposed mitigation	It happened? Mitigation measures are being implemented?	Should the risk level or mitigation measures be updated?	If it happened, there are impacts on project outcomes, schedule and budget?
Low involvement of the state environmental agencies	Medium	Strengthening of the Pro-Species Program coordinated by MMA, with involvement of state agencies, with ABEMA support, in the elaboration and implementation of the national strategy.			
Delays due to insufficient coordination between participants	Medium	The Technical Cooperation Agreement that will be signed by the Federal Government and the Executive Agency, as well as the subsidiary agreements with other participatory agencies will effectively establish the commitments of each agency (financial, technical and others), including the Project execution phase. The Operational Manual of the Program (OMP) will contain the specific responsibilities of the participating agencies in providing timely technical and financial reports for the various programs under their responsibility that are part of the project's parallel funding structure. Regular coordination meetings will be held with the implementers and partners.			
Low co-financing commitments due to low prioritization and/or political support for conservation measures	Low	Commitment letters were solicited and obtained from participating agencies with much bigger co-finance pledges that were estimated at PIF stage. Nevertheless, the pledges made are not being considered at face value due to the political and economic instability Brazil is facing. Project coordination will seek to guarantee each commitment is fulfilled and co-finance will be tracked during project monitoring activities. The risk is considered low because of the strong commitment showed in the letters received and the number of participants, even if some may face financial difficulties.			
Change in the exchange rate with the Real gaining value in relation to the US	High	There is substantial fluctuation in exchange rates in Brazil in the last year. It is difficult to forecast when the exchange rate will start to follow a steadier path and at which value. The exchange rate used for			

Dollar		project planning are not optimistic, but close monitoring on this issue will be made and early adjustments and adaptation of the activities will be assessed every 6 months during project supervision meetings.			
Delay in contracting the institution that operationalizes grants	Low	Efforts to finalize this contract are already being done and requirements for project effectiveness are already starting being prepared.			
Difficulties in implementing the institutional intelligence structure to combat crimes against fauna and flora	Medium	Specific training of agents that will participate in the new intelligence system and good registration of procedures and policies to mitigate eventual staff turn over.			
Resistance from the productive sector to mitigation actions related to the use or impacts in native species	Medium	Informative campaigns will be carried out to disseminate the potential benefits of sustainable management of biodiversity. This will be part of the general communication strategy of the Project. Once guidelines are published and state agencies have in house capacity to use them, it would be a legal liability not to follow the guidelines during the licensing process and non-compliance can greatly impact project financing.			
Low public participation in the awareness raising campaigns about trafficking of native species	Medium	Use of diverse communication tools to increase awareness, including printed material, various media and communication outlets.			
Difficulty in implementing the National List of Invasive Alien Species (IAS)	Medium	Separate the listed species in distinct categories to ensure that they can still be used for specific productive purposes, restricting secondary functions of the list.			
Inability to regulate the use of IAS and difficulty in gaining approval of other pertinent legal frameworks through related to the risk analysis system	Medium	Definition of detailed protocols and records. Risk analyses to be conducted by professionals from government agencies or other authorized institutions with recognized technical responsibility.			

Low collaboration with the IAS early detection system	Medium	Inclusion of many institutions and people in the network in all the Brazilian biomes and formalization of cooperation agreements, as well as promotion of the system all around the country, especially in high-priority geographical areas.			
Resistance to management and control of IAS	Medium	Technical training of people ready for/interested in these actions			
Capacity of executing agency	Medium	Although IUCN has an extensive experience in the subject of the project, the project itself is bigger than the usual project size executed by IUCN Brazil. This will be mitigated by close monitoring by Funbio based on a thorough due diligence. Funbio's own experience in executing GEF projects will help foresee executing obstacles.			
New Risks (identified during project execution)	**Risk Level**	**Proposed mitigation**	**It happened? Mitigation measures are being implemented?**	**Should the risk level or mitigation measures be updated?**	**If it happened, there are impacts on project outcomes, schedule and finance?**

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Funbio and the project partners welcome the comments received at PIF stage, the following table summarizes our responses.

Comments From:	Response
GEFSEC- At time of CEO endorsement, please provide a more explicit description of project design alignment with GEF biodiversity programs.	The full proposal better described the project components and the alignment with Gef Biodiversity programs as well as the links with the Aichi Targets and Brazilian NBSAP.
GEFSEC- At time of CEO endorsement, please provide a more explicit description of project design alignment with the Brazil NBSAP.	The full proposal better described the project components and the alignment with Gef Biodiversity programs as well as the links with the Aichi Targets and Brazilian NBSAP.
STAP- Baseline - there is little indication of the quantifiable impact of past (GEF) investments or what has been learned which informs the proposed strategy. The alternative scenario would appear to be suggesting that continued investments similar to past GEF and bilateral donor investments are required in order to ensure the sustainability of past investments and to support Brazil's national and international commitments to biodiversity conservation	The proposed project builts from past experiences, as the development of the territorial PANs in Probio II and the experience investing in improving public policies by establishing new planning tools, like the Biodiversity Priority Maps. The project should not suggest a need for similar investments to ensure sustainability of past investments. Actually, the third phase of Arpa (Transition Fund) and the beginning of the development of the Brazilian Blue Plataform (or Blue Fund) are strategies to ensure long term sustainability for past international investments. What the project acknowledges is that are still steps further to be taken in many areas. For example, the investment on inter-operability of information systems is key to make better planning tools, that can increase the full potential of the existing systems to a new level, and those investments will be made mostly from co-finance resources. We hope the full proposal made those aspects more clear.
STAP notes that the barriers to addressing the challenges described appear to be inadequate institutional coordination and coherence on national policies regarding biodiversity, inadequate institutional frameworks for management of biodiversity, and weaknesses regarding national capacity for knowledge management in this domain. STAP also notes from inferences in the baseline assessment that past investments have also addressed these issues.	Most of past investments were targeted at the federal level, which is, by the outcomes of those investiments and national investments, much more capable and coordinated than regional and local governments. The proposed project will mainly invest in the capacities of regional level government, strengthening state environmental agencies which, in the last years, became responsible for a larger share of the environmental regulation by decisions taken in the Brazilian Congress. This will also enable more inter-government level coordination. The project offers a new approach to target endangered species that lack any form of protection and more species sensitive public policies as a response for the knowledge generated by the elaboration of the new Brazilian Red List in 2014. Some past investments did addressed some of those issues, but not with endangered species centered approach. Also, some of the past investment were small first steps as the ones addressing invasive alien species.
STAP - Overall, there is no apparent logic	The full project has included a theory of change but it is impossible to include local communities at

structure or theory of change which together would provide a clear rationale for this initiative beyond the descriptions of the 3 main substantive components of the project and to allow an assessment of the likelihood of success	this level because it would take much more time and more resources than we have (surely more than 18 months). The strategy for the project cames directly from the Brazilian NBSAP which have a participatory process including NGOs and grassroots organizations. Also, the NBSAP was also built from past discussion in CONABIO (National Committee on Biodiversity) which also has civil society as permanent members. In this sense, we don't believe it is a top-down approach, but the development of many years of discussion, catalized by the new Brazilian Red List and the urge to take further actions. Nevertheless, local communities will have opportunities to participate in the PANs elaboration, which is the project activity that can potentially have more impact in their livehoods. To stress how important this is perceived, for each PAN, an additional social and environmental safeguards assessment will be made, taking into account the proposed activities and ensuring they are align with the social and environmental policies. Annex 2 have detailed socio-economic data for all the potential project sites.
STAP - Given that GEF funding is typically meant to be catalytic, there is no description of how this investment will be transformative and ensure sustainability in policy coherence and delivery over the long term while minimizing needs for ongoing outside investment. In addition, the document is silent regarding how implementation of the components proposed will deliver the suggested target of 9 million ha of landscapes/seascapes preserved, or how this figure was determined.	Long term sustainability is better described now at paragraphs 189 to 195. The suggested target was much better described after a detailed assessment of potential areas for project focus which was only possible with Proejct Preparation Grant. The explanation of this exercise and it's results are described in the project.
STAP - The risk analysis is weak and appears to be significantly under-estimating potential risks, particularly with respect to economic drivers as well as concerning the willingness of other government ministries overseeing production sectors to work proactively with project stakeholders	The risk analysis was improved.
STAP strongly recommends a thorough multi-stakeholder engagement strategy that is built on an objective analysis of past experience/success likely partners, both government and non-government. This will be important because the project will work across multiple sectors and scales, which increases the chances that diverse knowledge and governance arrangements will exist	During the project preparation period multi-stakeholders meetings were made and the response from state agencies was greater than anticipated.

Germany comments – The full proposal should identify more clearly opportunities and obstacles/ risks in mainstreaming threatened species into the regulatory framework for existing and established public sectorial policies to promote species conservation (component 1.2). It is recommended to liaise with the Brazilian Forest Service SFB and international cooperation initiatives on biodiversity and land management, in particular in relation to the Rural Environmental Registry (CAR).	The full proposal described component 1.2 in more detail. The Brazilian Forest Service (SFB) is part of the project, being included as a project partner in more than one component. CAR related agencies were approached and discussion on how to include endangered species sensitive data into CAR (and Car further developments as compensation quotas schemes) are already started during the preparation phase.
USA Comments - The proposal would benefit from additional detail on the nature of the governance framework to be established; • The structure of the proposal should be revised to reduce duplication and more clearly distinguish among different actions to be taken, such as to combat poaching and address invasive species; • The proposal should strengthen linkages with Aichi targets; • The proposal should strengthen the justification of a global environmental benefit	More detail on the governance framework was included in the full proposal. Also, better described components made the distinguish among the components more clear. Aichi Targets and Brazilian NBSAP targets links were included in the full proposal in tables after paragraph 247. Global environmental benefits were better described in the full proposal.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS[140]

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: **300,000**			
Project Preparation Activities Implemented	***GETF/LDCF/SCCF/CBIT Amount ($)***		
	Budgeted Amount	***Amount Spent Todate***	***Amount Committed***
Consultants	224,009	73,779	150,230
Meetings	24,989	11,239	13,750
Travel	45,112	29,362	15,750
Other services	2,042	887	1,155
Prints, office suplies	3,848	348	3,500
Total	300,000	115,615	184,385

[140] If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities. Agencies should also report closing of PPG to Trustee in its Quarterly Report.

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used**)**

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/CBIT Trust Funds or to your Agency (and/or revolving fund that will be set up)