

Profile on Environmental and Social Considerations in Brazil

March 2014

Japan International Cooperation Agency

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Abbreviations and Acronyms

	Portuguese	English
ABETRE	Associação Brasileira De Empresas de Tratamento de Resíduos	Brazilian Association of Hazardous Waste Treatment
ABGLT		Associação Brasileira de Gays, Lésbicas, Bissexuais, Travestis e Transexuais
ABNT	Associação Brasileira de Normas Técnicas	Brazilian Association of Technical Standards
ACHR		American Convention on Human Rights
AI		Amnesty International
AIDS		Acquired ImmunoDeficiency Syndrome
ANA	Agencia Nacional de Aguas	National Water Agency
AZE		Alliance for Zero Extinction
BFP	Bolsa Família Program	
BM&F	Bolsa Mercantil e de Futuros	Futures and Commodities Exchange
BSH	Brasil Sem Homofobia	
CadUnico	Cadastro Único	
CCA		Common Country Assessment
CCT		Conditional cash transfer
CDM		Clean Development Mechanism
CDRU	Contrato de Direito Real de Uso	Contract of Real Right to Use
CER		Certified Emission Reduction
CETESB	Companhia Ambiental Do Estado de Sao Paulo	Sao Paulo State Environment Agency
CGEN		Genetic Heritage Management National Council
CI		Conservation International
CIDES		UN Framework Convention on Climate Change
CIM	Comite interministerial sobre Mudanca do Clima	Inter-Ministerial Committee on Climate Change
CITES		Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS		Convention on Migratory Species of Wild Animals
CNBS		Biosafety National Commission
CNCD	Conselho Nacional de Combate à Discriminação	
CNIR		National Cadastre of Rural Properties
CNRH		National Water Resources Council
COMHURB		Municipal Housing and Urban Planning Council
CONAMA	Concelho Nacional do Meio Ambiente	National Environmental Council
CONIB	Confederação Israelita do Brasil	
CONTRAN		National Traffic Council
CRAS		Social Assistance Reference Center
CREAS		Specialized Social Assistance Reference Center
CSMA		High Council on the Environment
CVM	Comissao de Valores Mobiliarios	Brazilian Securities and Exchange Commission
EBA		Endemic Bird Area
EIA		Environmental Impact Assessment
EMP		Environmental Management Plan

EORTC		European Organization for Research and Treatment of Cancer
FAO		Food and Agriculture Organization of the United Nations
FEEMA		State Environmental Engineering Foundation
FHC	Fernando Henrique Cardoso	
FMBC		Forum Brasileiro de Mudancas Climaticas
FUNAI	Fundação Nacional do Índio	National Indian Foundation
FUNDEF	Fundo de Manutenção e Desenvolvimento do Ensino Fundamental e de Valorização do Magistério	
GDP	Gross Domestic Product	
GEF		Global Environmental Facility
Gex	Grupo Executivo sobre Mudanca do Climat	Executive Group on Climate Change
GHG		Greenhouse Gases
GLBT		Gay, lesbian, bisexual, transsexual and transgender
GMO		Genetic Modified Organism
HDI		Human Development Index
HRW		Human Rights Watch
IBA		Important Bird Areas
IBAMA		Brazilian Institute for Environment and Renewable Resources
IBGE		Brazilian Institute of Geography and Statistics
IBRA		Brazilian Agrarian Reform Institute
ICMBio		Chico Mendes Institute for Preservation of the Environment and Biodiversity
IEE		Initial Environmental Examination
IEPA		Institue of Applied Economic Researc
IGD		Indexes of performance for municipal and state Governments
ILGA		International Lesbian and Gay Association
ILO		International Labor Organization
INCRA		Institute of Agrarian Reform and Colonisation
INSS		National Social Securitu Institue
INTERAGUAS		Program for Development of the Water Sector
IPHAN	Instituto do Patrimônio Historico e Artístico Nacional	National Historic and Artistic Heritage Institute
IPTU		Urban Land and Buildings Tax
ISER		Institute for Religious Studies
ITBI		Real Estate Transfer Tax
ITR		Tax on Rural Land
IUCN		Internation Union for Conservation of Nature
LI		Construction Permit
LO		Operating Permit
LP		Preliminary licece
MA		Ministry of Agriculture
MDG		Millennium Development Goals
MDIC		Ministry of the Industry and Foreign Trade Development
MF		Ministry of Finance
MMA	Ministerio do Meio Ambiente	Ministry of the Environment
MP	Ministerio Publico	Procecution Office
MS		Ministry of Health
MST		Landless Workers Movement

NBR		National Brazilian Standards
NCA		Noise Control Act
NEP		National Environmental Policy
NGO		Non-governmental organization
NIS		Social Identification Number
NSCU		National System of Conservation Units
OAS		Organization of American States
PA		Protected Area
PAC		Growth Acceleration Programme
PDE		Educational Development Plan
PL		Public Law
PM		Particulate Matter
PNDH		Programa Nacional de Direitos Humanos
PNLGBT	Plano Nacional para Promoção da Cidadania e Direitos Humanos de LGBTs	
PNQA		National Program of Water Quality Evaluation
PNSB	Pesquisa Nacional de Saneamento Básico	National Basic Sanitation Research
POPs		Persistent Organic Pollutants
PRAD		Recovering Plan of Damaged Areas
PRO-ALCOOL		National Alcohol Fuel Program
PROCEL		National Electricity Conservation Program
PRODES		River Basin Clean-up Program
PROGESTAO		Consolidation Program of the National Pact for Water Management
PROINFA		Program for Incentive of Alternative Electric Energy Sources
PRONAR		National Program of Air Quality Control
PT	Partido dos Trabalhadores	
REDD		Reducing Emission From Deforestation and Forest Degradation program
RIMA	Relatório de Impacto Ambiental	Corresponding Environmental Impact Statement
SA		Secondary Area
SEA		Strategic Environmental Assessment
SEDH	Secretaria de Estado dos Direitos Humanos	
SEPPIR		Special Secretariat for the Promotion of Racial Equality
SIGERH		Integrated Water Resources Management System
SINGREH		National Water Resource Management System
SISNAMA		National Environmental System
SNIS	Sistema Nacional de Informações sobre Saneamento	The National Information System on Water, Sanitation, and Solid Waste

STAQ		Sustainable Transport and Air Quality
SVS	Secretaria de Vigilancia Sanitaria	Health Surveillance Secretariat
TAC	Termos de Ajustamento de Conduta	Conduct Adjustment Terms
UN		United Nations
UNCT		United Nations Country Teams
UNCRPD		UN Convention on the Rights of Persons with Disabilities
UNDAF		United Nations Development Assistance Framework
UNDP		United Nations Development Programme
UNFCCC		United Nations Framework Convention on Climate Change
UNHCHR		United Nations Commission on Human Rights
UNICEF		United Nations Children's Fund
UNODC		The UN Office on Drugs and Crime
US		United States
WEEE		Waste of Electric Electronic Equipment
WHO		World Health Organization

Executive Summary

Japan International Cooperation Agency (JICA) introduced new "JICA guidelines for environmental and social considerations" in 2010. These guidelines encourage project proponents to give an appropriate consideration towards environmental and social impacts of JICA-supported projects. It also aims at ensuring JICA's support of its project proponents in order to help environmental and social considerations (ESC). This will help to define JICA's responsibilities and procedures of ESC.

In order to facilitate an appropriate ESC, JICA prepares a "country profile for environmental and social considerations" for each proposed country. This profile serves as a source of information that will implement the necessary measures of ESC in JICA-supported projects. The next review of a "country profile" is Brazil. In which we will discuss its literature, potential projects, interviews with local experts, and consultations and interviews with local experts and relevant agencies. This country profile will provide: 1) basic information on the state of Brazil's environment, 2) legal and administrative frameworks with procedural details of ESC in Brazil, and 3) Gap analysis between JICA's ESC and the ESC of Brazil along with its other development partners.

To verify collected baseline information, a technical tour of this site was conducted (January 05, 2014 – January 28, 2014). On this tour, a series of interviews were conducted in various locations. Including some federal government agencies located in Brasilia, including a few state environmental governments in the following six (6) states: DF, Amazonas, Para, Sao Paulo, Parana and Santa Catarina. The following is a key summary of the study results conducted on environmental and social considerations of Brazil.

1. Summary of Environmental Considerations

Brazil occupies most of the eastern part of the South American continent, which is considered to be its geographic heartland. This is also including the various islands in the Atlantic Ocean. The national territory extends 4,395 km from north to south and 4,319 km from east to west. Brazil's climate varies considerably from the tropical north (where the equator traverses the mouth of the Amazon) to the temperate zones below the Tropic of Capricorn. Temperatures below the equator are fairly high, averaging above 25 °C (77 °F). However, it does not reach the summer extremes of up to 40 °C (104 °F) in the temperate zones. There is little seasonal variation near the equator, although at times it can get cool enough for wearing a light jacket, especially in the rain.

Brazil has six major ecosystems: the Amazon Basin, a tropical rainforest system; the Pantanal, bordering Paraguay and Bolivia, a tropical wetland system; the Cerrado, a savanna system

covering much of the center of the country; the Caatinga, or thorny scrubland habitat of the Northeast; the Atlantic Forest (Mata Atlântica), extending along the entire coast from the Northeast to the South; and finally, the Pampas, or fertile lowland plains of the far South (Chapter 1).

Brazil is classified among one of the world's 17 mega-diverse countries, incorporating 70% of the world's known animal and plant species. It is estimated that Brazil hosts between 15-20% of all the world's biological diversity, and hosts the greatest number of endemic species on a global scale. These resources are not only important for the environmental services provided, but also for the development and usage of sustainable investment opportunities. The main threats concerning this biodiversity are: fragmentation and loss of habitats, introduction of alien species and/or exotic illnesses, overexploitation of plants and animals, use of hybrids and monoculture in agro-industry and reforestation programs, pollution, and climate change (Chapter 2).

Rapid urbanisation and industrial development are also creating such problems in Brazil as the increase of air, water, and soil pollution. The population growth has also forced cities to expand without consideration for these environmental impacts. Not only are infrastructures built by using products and methods that release harmful pollution into the air, but there is an increase of vehicles which take part in the degradation of air quality, as well. The discharge coming from urban and/or industrial waste, are filling the waters of Brazil's reservoirs, lakes, and rivers. Therefore, having both air and water pollution problems is currently leading to the pollution of Brazil's soil. The enormous amounts of solid waste generated and the lack of proper disposal are poisoning Brazil's entire ecosystem (Chapter 3).

However, Brazil is now trying to tackle these issues through a new effort of enforcing their rules and changing to different National Policies and Programs. The real challenge for Brazil remains as to how they can learn to manage and maintain economic development and still having environmental responsibility creating a more sustainable economic growth (Chapter 3).

Environmental Impact Assessment (EIA) was established in 1981 with the enactment of the National Environmental Policy (NEP) created through Law 6.938/81. CONAMA's Resolutions 01/86 and 237/97 define basic characteristics of the EIA process of Brazil. EIA is associated with the licensing of activities which have the potential to significantly impact the environment.

The environmental licensing procedure in Brazil includes the analysis of documents, projects, and environmental studies to be submitted by an entrepreneur. Licensing procedures of certain activities deemed to significantly impact the environment requires EIA and a corresponding environmental impact statement, RIMA. The EIA and RIMA (EIA/RIMA) both must submit approval of gaining the appropriate licenses and using the appropriate authorities (CONAMA

Resolution No. 1/1986). The authorities responsible for the EIA review at Federal level are the IBAMA; at State level are the Environment Office/Environmental Council of the respective State.

Although several legal improvements of Brazilian EIA framework are recognized, some gaps still exist among these regulations. The following are major gaps recognized between JICA guidelines and Brazilian laws.

- JICA guidelines stress that measures for environmental and social considerations are to be implemented by ensuring a wide range of relevant stakeholder participation, and keeping transparency of decision-making. This also includes working towards information disclosure and ensuring efficiency. However, under the Brazilian regulation, public consultation and information disclosure tend to be conducted at a late planning stage.
- So, the ToR development of relevant environmental studies, usually conducted at the early planning stage, where upon subsuming advice and/or comments of competent agencies such as FUNAI, will occasionally become inadequate.

Project proponents should undertake an environmental assessment which fits in line with both governmental laws and JICA guidelines. Particularly with the involvement of competent agencies and/or organizations, there should be an assessment held in the earlier part of its project planning stage. Then, potential critical environmental and social factors can be identified through intra-disciplinary discussions and add more suitable management program. This will include mitigation measures are better developed in order to make the design of this projects concerns more environmentally sound and sustainable (Chapter 5).

2. Summary of Social Considerations

According to World Bank, the estimated population of Brazil was 198.7 million in 2012. The average rate of annual population growth between 2009 and 2013 was 0.9 %. Its population density was 23 people per km². Its GDP was \$2.253 trillion. The UNESCO Brasilia office says, ‘the ever accelerating rate of economic growth in Brazil may lead the country to become the fifth largest economy in the world within the next decade.’ In addition, GDP is expected to grow between 5.5 % and 6 % in the next few years. Brazil is structurally consolidating as an emerging country and regional leader. However, there are other indexes hidden behind economic development that show a country still bound to its past. Despite lifting approximately 25 million Brazilians out of poverty, there are still 54 million people that need assistance. This is reflected in the Human Development Index (HDI), where Brazil is ranked 73rd amongst 169 countries. The same can be noted on the income distribution indicator (Gini per capita), which ranks Brazil in 75th position among the 183 countries surveyed.

Beyond material wealth and economic growth, Brazilian diversity (regional, cultural and

environmental) offers a rich experience, unique opportunities, and challenges related to fundamental elements of citizenship. These elements include: access to basic health care, education, housing, safety, sanitation, and drinking water. However Brazil, on average, plans to attain their Millennium Development Goals by 2015. It will take most states in the North and Northeast regions a few more decades to reach that same developmental level. More equitable development, between these regions, requires better territorial planning along with further qualification of the state and municipal public sector. Today, over 80 % of the Brazilian population resides in urban areas, with 45 % living in the metropolis. This has created much tension where there is a great divide between the rich and poor. According to UN-Habitat, approximately 100 million people live in the slums of Latin America and the Caribbean. There are 1.96 million homes considered to be inadequate living quarters in such Brazilian slums (Chapter 4).

According to the Instituto Brasileiro de Geografia e Estatística, Anglo-Saxons are reported to make up 48 % of entire population, then Mulato (43 %), African-descendants (8 %), Asians (1 %), and Indigenous groups (0.4 %). Here, Mixed Heritage is a term used to refer to a person who is born of any proportion of European and African ancestry. Currently, there are 197 forest-dwelling indigenous groups living either on reservations or in one of the four national parks (Chapter 7).

As for consideration towards indigenous people, the Brazilian 1988 Constitution along with the Law 7716 of 1989 and the Law 9459 of 1997 states that any acts of racism will have high consequences of penalties such as imprisonment. This is to ensure the protection of the existence of indigenous minorities. Basically, any development projects that could affect properties and/or lands of indigenous tribes shall conduct an EIA/RIMA study with consultation from FUNAI (Section 7.7). The following are major gaps recognized between JICA guidelines and Brazilian laws.

- Most public participation processes organized before relocation events tend to be held later in the planning stage, when the design framework is consolidated and there is no possibility to conduct design amendments to mitigate negative impacts.
- Also, ToR development of relevant social studies involved with agencies, such as FUNAI, become inadequate because they waited until after the planning stages are complete.

Current practices of JICA and other donors are keeping within their respective guidelines. Project proponents are also taking into consideration the indigenous people of Brazil in order to keep in with both governmental laws and JICA guidelines.

Land acquisition and involuntary resettlement are regulated by the 1964 Land Statute (Law No. 4504), the Law on Union Land (Law No. 9,636), City Statute (2001) and Civil Code (2002) (Chapter 6). In Brazil, there is no specific legislation regulating these resettlement issues. The

following are major gaps recognized between JICA guidelines and Brazilian laws.

- Brazil's Constitution and Land Statute allow for the compulsory acquisition of idle or underutilized land, following in their public's interest. Relevant compensation is paid to PAPs, to some extent. Although that compensation scheme does not fully cover such instances like, the loss of businesses and/or job opportunities associated with the relocation to such new sites.
- Regarding involuntary resettlement, WB, IDB, and JICA have similar principles or policies to create sustainable assistance per case, and request project proponents to pay attention to those policies throughout the entire project implementation cycle. In Brazil, the involuntary resettlement of vulnerable people, such as illegal squatters, without proper land title is a continuing controversy.

Currently, the practices of JICA and other donors are keeping within their respective guidelines. Project proponents will be undertaking the land acquisition and involuntary resettlement issues with both governmental laws and JICA's guidelines.

Chapter 1 Country Overview

1.1 Overview

1.1.1 Map of Brazil



Figure 1.1.1 Map of Brazil

(Source: Guia Geografico, <http://www.guiageografico.com/mapas/mapa-brasil.htm>)

1.1.2 Location and Topography



Figure 1.1.2 Location of Brazil



Figure 1.1.3 Topography of Brazil

(Source: University of Texas Library, http://www.lib.utexas.edu/maps/americas/brazil_re194.jpg)

Brazil occupies most of the eastern part of the South American continent and its geographic heartland, as well as various islands in the Atlantic Ocean. The only countries in the world that are larger are Russia, Canada, the People's Republic of China, and the United States. The national territory extends 4,395 km from north to south ($5^{\circ}16'20''$ N to $33^{\circ}44'32''$ S latitude) and 4,319 km from east to west ($34^{\circ}47'30''$ W to $73^{\circ}59'32''$ W longitude). It spans three time zones, the easternmost of which is one hour ahead of Eastern Standard Time in the United States. The time zone of the capital (Brasília) and of the most populated part of Brazil along the east coast (UTC-3) is two hours ahead of Eastern Standard Time, except when it is on its own daylight saving time, from October to February. The Atlantic islands are in the easternmost time zone.

Brazil possesses the archipelago of Fernando de Noronha, located 350 km northeast of its

"horn", and several small islands and atolls in the Atlantic - Abrolhos, Atol das Rocas, Penedos de São Pedro e São Paulo, Trindade, and Martim Vaz. In the early 1970s, Brazil claimed a territorial sea extending 362 km from the country's shores, including those of the islands.

On Brazil's east coast, the Atlantic coastline extends 7,367 km. In the west, in clockwise order from the south, Brazil has 15,719 km of borders with Uruguay, Argentina, Paraguay, Bolivia, Peru, Colombia, Venezuela, Guyana, Suriname, and French Guiana. The only South American countries with which Brazil does not share borders are Chile and Ecuador. A few short sections are in question, but there are no true major boundary controversies with any of the neighboring countries.

Brazil has six major ecosystems (see Table 1.1.1): the Amazon Basin, a tropical rainforest system; the Pantanal bordering Paraguay and Bolivia, a tropical wetland system; the Cerrado, a savanna system that covers much of the center of the country; the Caatinga or thorny scrubland habitat of the Northeast; the Atlantic Forest (Mata Atlântica) that extends along the entire coast from the Northeast to the South; and the Pampas or fertile lowland plains of the far South.

Table 1.1.1 Summary of Major Ecosystem in Brazil

Ecosystem Type		Main Features
1	Amazon Basin	Area of nearly 5 million km ² , occupies nearly the whole northern part of South America up to the Andes. Amazon forest is a tropical rainforest with one of the world highest rates of biodiversity and also the most intact areas.
2	Pantanal	The largest wetlands in the world, lying South of the Amazon and to the Southwest of the Cerrado, show influences of both these ecosystems. Considered to have the highest concentration of wildlife in the Americas.
3	Cerrado	Plant community structure similar to the African savanna, but is much richer in biodiversity. Running diagonally from southwest to northeast, the Cerrado is also important as a corridor for animal and plant species to other ecosystems Brazil. The rapid expansion of Brazilian agriculture has greatly reduced the cerrado, which occupies 25% of Brazilian territory and makes it a conservation hotspot.
4	Caatinga	Located in the bulge of north-eastern Brazil, too far from the moist Amazon inland and the ocean currents on the west lies the Caatinga characterized by scrubs, thorns, magnificent cactus formations and small contorted trees. Though this ancient land is also one of the poorest regions of the country, where years of drought can occur, its flora and fauna is surprisingly rich and it is home to some of Brazil's most important pre-historic sites. The disappearance of the Atlantic Rainforest, amongst other factors, is increasing the desertification pressures on this unique ecosystem.
5	Atlantic Forest	Once covered an area of 1.1 million km ² has been diminishing since the discovery of Brazil. Only 5% of the original forest area remains and it is one of the most endangered areas in the world. However, the remaining forest is still a biodiversity hotspot.
6	Pampas	Located in the very South of Brazil. Apart from grasslands associated with 'Cerrado' and Atlantic Forest, there are also the Pampas of southern Brazil. Unfortunately, the Pampas have largely been destroyed for pasture and rice plantations.

In contrast to the Andes, which rose to elevations of nearly 7,000 m in a relatively recent epoch and inverted the Amazon's direction of flow from westward to eastward, Brazil's geological formation is very old. Precambrian crystalline shields cover 36% of the territory, especially its

central area. The dramatic granite sugarloaf mountains in the city of Rio de Janeiro are an example of the terrain of the Brazilian shield regions, where continental basement rock has been sculpted into towering domes and columns by tens of millions of years of erosion, untouched by mountain-building events.

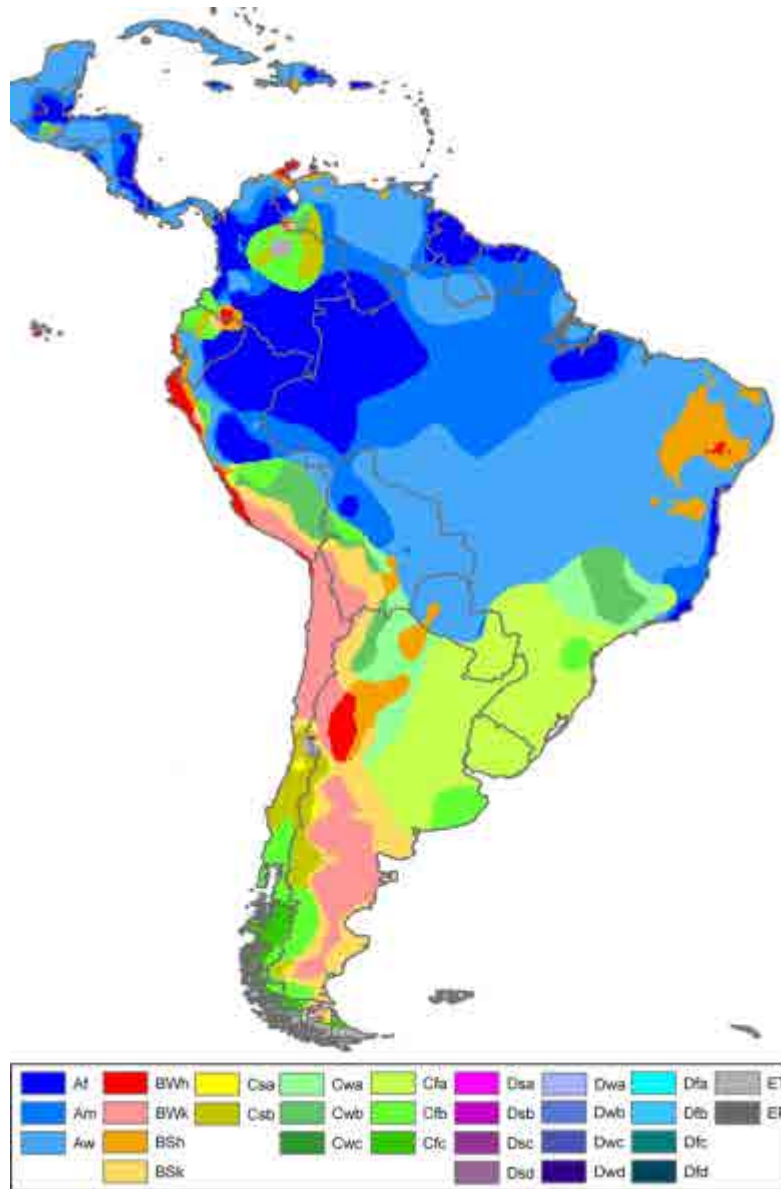
The principal mountain ranges average elevations just under 2,000 m. The Serra do Mar Range hugs the Atlantic coast, and the Serra do Espinhaço Range, the largest in area, extends through the south-central part of the country. The highest mountains are in the Tumucumaque, Pacaraima, and Imeri ranges, among others, which traverse the northern border with the Guianas and Venezuela.

In addition to mountain ranges (about 0.5 % of the country is above 1,200 m, Brazil's Central Highlands include a vast central plateau (Planalto Central). The plateau's uneven terrain has an average elevation of 1,000 m. The rest of the territory is made up primarily of sedimentary basins, the largest of which is drained by the Amazon and its tributaries. Of the total territory, 41 % averages less than 200 m in elevation. The coastal zone is noted for thousands of kilometers of tropical beaches interspersed with mangroves, lagoons, and dunes, as well as numerous coral reefs.

1.1.3 Climate

(1) General Climate

Figure 1.1.4 shows the general climate distribution across the entire South America. The climate of Brazil varies considerably mostly from tropical north (the equator traverses the mouth of the Amazon) to temperate zones below the Tropic of Capricorn (23°27' S latitude). Temperatures below the equator are high, averaging above 25 °C (77 °F), but not reaching the summer extremes of up to 40 °C (104 °F) in the temperate zones. There is little seasonal variation near the equator, although at times it can get cool enough for wearing a jacket, especially in the rain. Figure 1.1.5 shows the annual temperature and rain fall distribution in Brazil.



Note: Af: equatorial, Am: monsoon, Aw: tropical savannah
 BWh: warm desert, BWk: cold desert, Bsh: warm semi-arid, Bsk: cold semi-arid
 Csa: warm Mediterranean, Csb: temperate Mediterranean, Cwa: humid subtropical
 Cwb: humid subtropical climate/subtropical oceanic highland climate
 Cwc: oceanic sub-polar, Cfa: warm oceanic climate/humid subtropical
 Cfb: temperate oceanic, Cfc: cool oceanic, Dsa: warm continental/Mediterranean continental
 Dsb: temperate continental/Mediterranean continental
 Dsc: cool continental, Dsd: cold continental, Dwa: warm continental/humid continental
 Dwb: temperate continental/humid continental, Dwc: cool continental/subarctic
 Dwd: cold continental/subarctic, Dfa: warm continental/humid continental
 Dfb: temperate continental/humid continental, Dfc: cool continental/subarctic
 Dfd: cold continental/subarctic
 ET: tundra, EF: ice cap

Figure 1.1.4 General Climate of South America

(Source: Wikimedia, http://commons.wikimedia.org/wiki/File:South-America_Koppen_Map.png)

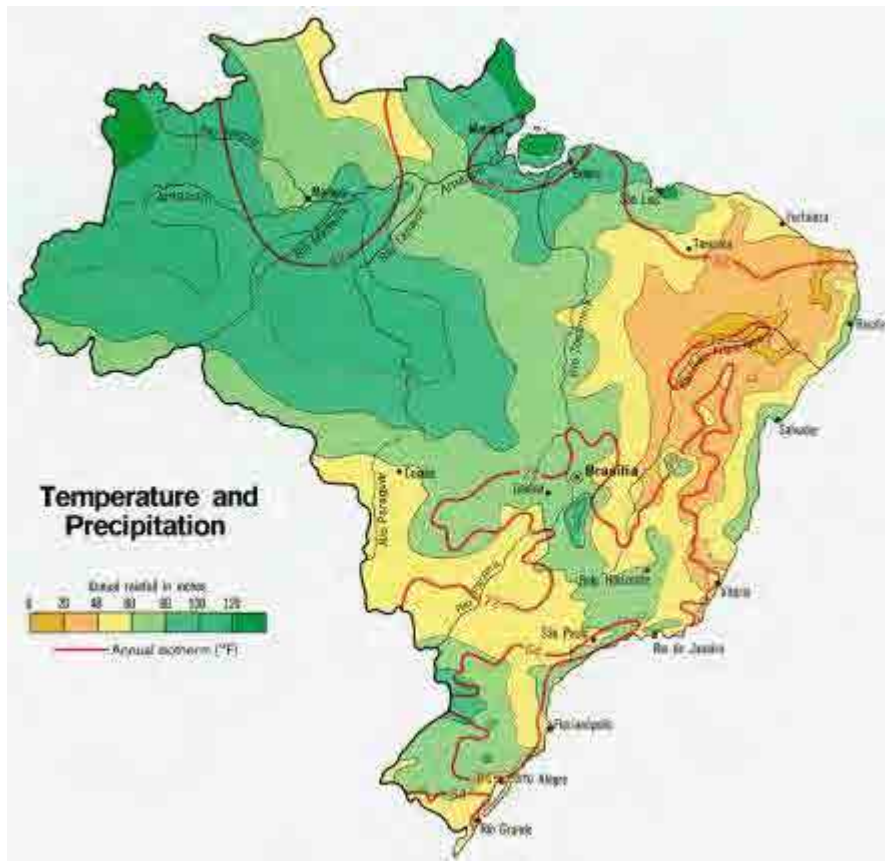


Figure 1.1.5 Annual Temperature and Rain Fall in Brazil

(Source: University of Texas Library, <http://www.lib.utexas.edu/maps/brazil.html>)

At the country's other extreme, there are frosts south of the Tropic of Capricorn and during the winter (June–September), and in some years there are snowfalls on the high plateau and mountainous areas of some regions. Snow falls more frequently in the states of Rio Grande do Sul, Santa Catarina, and Paraná and less frequently in the states of São Paulo, Rio de Janeiro, Minas Gerais, and Espírito Santo. Temperatures in the cities of Belo Horizonte and Brasília are moderate, usually between 15 °C and 30 °C, because of their elevation of approximately 1,000 m. Rio de Janeiro, Recife, and Salvador on the coast have warm climates, with average temperatures of each month ranging from 23 to 27 °C, but enjoy constant trade winds. The cities of São Paulo, Curitiba, Florianópolis and Porto Alegre have a subtropical climate similar to that of southern United States, and temperatures can fall below freezing in winter.

Precipitation levels vary widely. Most of Brazil has moderate rainfall of between 1,000 and 1,500 mm a year, with most of the rain falling in the summer (between December and April) south of the Equator. The Amazon region is notoriously humid, with rainfall generally more than 2,000 mm/year and reaching as high as 3,000 mm in parts of the western Amazon and near Belém. It is less widely known that, despite high annual precipitation, the Amazon rain forest has a three-to five-month dry season, the timing of which varies according to location north or

south of the equator.

High and relatively regular levels of precipitation in the Amazon contrast sharply with the dryness of the semiarid Northeast, where rainfall is highly erratic and there are severe droughts in cycles averaging seven years. The Northeast is the driest part of the country. The region also constitutes the hottest part of Brazil, where during the dry season between May and November, temperatures of more than 38 °C have been recorded. However, the sertão, a region of semi-desert vegetation used primarily for low-density ranching, turns green when there is rain. Most of the Center-West has 1,500 to 2,000 mm of rain per year, with a pronounced dry season in the middle of the year, while the South and most of the East is without a distinct dry season.

Although most of Brazil lies in the tropics, more than 60 % of the population live in areas which are cooled either by altitude, sea winds or polar fronts. While the coastal cities of Rio de Janeiro, Recife and Salvador can get extremely hot, plateau cities such as São Paulo, Brasília and Belo Horizonte have mild climates, and the southern cities of Porto Alegre and Curitiba have mild winters, but while Curitiba has a warm summer due to the average elevation of 934.6 m, Porto Alegre has a hot summer, with an average elevation of only 10 m.

Despite the popular image of the Amazon as a region of blistering heat, temperatures of more than 32 °C (90 °F) are in fact rare. The annual average temperature in the region is 22–26 °C, with not much variation between the warmest and the coldest months. The hottest part of Brazil is the northeast, where temperatures of more than 38 °C are frequently recorded during the dry season between May and November. Along the Atlantic coast from Recife to Rio de Janeiro, average temperatures range from 23 to 27 °C. Inland, on higher ground, temperatures are lower, ranging from 18 to 21 °C. South of Rio the seasons are more defined and the range of temperatures significantly wider, with the annual average falling between 17 and 19 °C.

Brazil's most intense rain falls around the mouth of the Amazon near the city of Belém, and also in the upper regions of Amazonia where more than 2,000 mm of rain fall every year. Most of Brazil has moderate rainfall of between 1,000 and 1,500 mm/year, most of it coming between December and April. The driest part of the country is the northeast, where rainfall is erratic and the evaporation rate very high, making it difficult to grow crops.

The highest temperature officially registered in Brazil was 44.7 °C in Bom Jesus, Piauí state, on November 21, 2005. On the other hand, the lowest temperature officially recorded in Brazil was -14 °C in Caçador, Santa Catarina state, on June 11, 1952. However, the summit of Morro da Igreja, a mountain situated in the municipality of Urubici, also in Santa Catarina, recorded a temperature of -17.8 °C on June 30, 1996, unofficially.

Because the South Atlantic basin is generally not a favorable environment for their development,

Brazil has only rarely experienced tropical cyclones. The country's coastal population centers are therefore not as burdened with the need to prepare for cyclones, as are cities at similar latitudes in the United States and Asia. Table 1.1.2 summarizes main features of regional climate in Brazil. More detailed descriptions for the regional climate are presented in next section, separately.

Table 1.1.2 Summary of Climate by Region

	Annual Temperature	Rainfall (mm/year)
1. South East	20 °C around the border between São Paulo and Paraná - 24 °C in north of Minas Gerais. Sometime, below 18 °C in elevated areas of Serra do Espinhaço, Serra da Mantiqueira and Serra do Mar.	Excess of 1,500 mm in general. Surpass 1,750 mm in elevated areas of Serra da Mantiqueira.
2. North-East	Temperatures are high, with annual averages between 20 and 28 °C, maxima of around 40 °C having been observed in the south of Maranhão and Piauí. The months of winter, mainly June and July, produce minimum temperatures between 12 and 16 °C in the coastal regions.	Annual totals vary from 2,000 mm to values even lower than 500 mm. In a general way, the annual medium precipitation in the northeast area is lower than 1,000 mm (39.4 in). Besides, the rainy period is usually of just two months in the year, sometimes not coming in some years, causing then the denominated regional droughts in the interior of this area.
3. South	Annual medium temperatures range from 14 to 22 °C, and in places with altitudes above 1,100 m, drops to approximately 10 °C. Some parts of the southern region also have an oceanic climate.	Annual medium rainfall oscillates from 1,250 to 2,000 mm, except along the coast of Paraná and west of Santa Catarina, where the values are in excess of 2,000 mm (78.7 in), and in the north of Paraná and in a small coastal area of Santa Catarina, which have lower recordings down to 1,250 mm.
4. North	In general, weather is hot, with annual medium temperatures ranging from 24 to 26 °C.	Annual rainfall exceeds 3,000 mm. Around Roraima to east of Pará, there is less rain, with annual totals in the order of 1,500 to 1,700 mm.
5. Middle West	Annual medium temperature is 22 °C. In spring and summer, temperatures are commonly high, the average of the hottest month varying from 24 to 26 °C. Average of the maximum temperatures of September (hotter month) oscillates between 30 and 36 °C.	Annual medium rainfall varies from 2,000 to 3,000 mm in north of Mato Grosso, to 1,250 mm in Pantanal mato-grossense.

(2) Climate by Region

1) South East Region

The latitudinal position around the Tropic of Capricorn, the very uneven topography and disturbed circulation systems greatly influence the climatology of the Southeast and it is quite diverse in temperature. The annual medium temperature ranges from 20 °C as seen on the border between São Paulo and Paraná to 24 °C in the north of Minas Gerais, while in the elevated areas of the Serra do Espinhaço, Serra da Mantiqueira and Serra do Mar the average medium temperature can be below 18 °C due to the combined effect of the latitude with the frequency of the polar currents.

In the summer, mainly in the month of January, the normal average temperatures range from 30 to 32 °C in the valleys of the rivers São Francisco and Jequitinhonha, in the Zona da Mata (Forest Zone) of Minas Gerais, in the coastal lowlands and to the west of the state of São Paulo. In the winter, the normal average temperatures range from 6 to 20 °C with minimum absolute from -4 to 8 °C, the lowest temperatures being at the highest elevations. Vast areas of Minas Gerais and São Paulo register occurrences of frosts, after the passage of the polar fronts.

As far as the incidence of rain is concerned, there are two areas with heavy precipitation: one following the coast and the Serra do Mar, where the rains are precipitated by the southerly currents; and the other from the west of Minas Gerais to the Municipal district of Rio de Janeiro, where the rains are brought by the Westerly system. The annual precipitation total in these areas is in excess of 1,500 mm. In the Serra da Mantiqueira these indexes surpass 1,750 mm, and at the summit of Itatiaia, 2,340 mm.

In the Serra do Mar, in São Paulo, it rains on the average more than 3,600 mm. Near Paranapiacaba and Itapanhaú maximum rainfall was measured at 4,457.8 mm in one year. In the valleys of the rivers Jequitinhonha and Doce the smallest annual pluviometric indexes are recorded at around 900 mm.

The maximum pluviometric index of the Southeast area usually occurs in January and the minimum in July, while the dry period is usually concentrated in the winter, lasting six months in the case of the valleys of the rivers Jequitinhonha and São Francisco, to as little as two months in the Serra do Mar and Serra da Mantiqueira.

2) North-East Region

The climatic characterization of the Northeast area is a little complex, and the four systems of circulation that influence the region are denominated Systems of Disturbed Currents of South, North, East and West. The System of disturbed currents of South is represented by the polar masses that reach the area in the spring-summer, acts in the coastal areas until the south of Bahia, bringing frontal and back-frontals rains. In the winter the polar masses reach even the coast of Pernambuco, while the hinterlands regions remain under the influence of the tropical mass.

The system of disturbed currents of North, represented by Convergence Intertropical (CIT), produces rain from the summer to the autumn even in Pernambuco, in the vicinity of the Raso da Catarina. On the other hand, the currents of the East are more frequent in the winter and they usually produce abundant rains in the coastal regions, rarely reaching the scarps of the Plateau

of Borborema (800 m) and of Chapada Diamantina (1,200 m).

Finally, the system of currents of the West, brought by the lines of Tropical Instability (IT), occur from the end of spring to the beginning of autumn, rarely reaching the states of Piauí and Maranhão.

Temperatures are high, with annual averages between 20 and 28 °C, maxima of around 40 °C having been observed in the south of Maranhão and Piauí. The months of winter, mainly June and July, produce minimum temperatures between 12 and 16 °C in the coastal regions, much lower in the plateau regions where temperatures of 1 °C have been recorded in Chapada Diamantina after the passage of a polar front.

The pluviosity of the area is complex and is source of concern: its annual totals vary from 2,000 mm to values even lower than 500 mm, as verified in the Raso da Catarina, between Bahia and Pernambuco, and in the depression of Patos in Paraíba. In a general way, the annual medium precipitation in the northeast area is lower than 1,000 mm - in the city of Cabaceiras, interior of Paraíba, was observed the smallest annual pluviometric index registered in Brazil, 278 mm/year. Besides it in the interior of this area the rainy period is usually of just two months every year, sometimes not coming in some years, causing then the denominated regional droughts.

3) South Region

The South region is located below the Tropic of Capricorn, in a temperate zone. It is influenced by the system of disturbed circulation of the South, which produces the rains, mainly in the summer. It is also influenced by the system of disturbed circulation of the West, that brings rains and storms, sometimes hail, producing winds with bursts of 60 to 90 km/h. Regarding temperatures: the winter is mild and the summer is hot. The annual medium temperatures range from 14 to 22 °C, and in places with altitudes above 1,100 m, drops to approximately 10 °C. Some parts of the southern region also have an oceanic climate.

In the summer, mainly in January, in the valleys of the rivers Paranapanema, Paraná and Ibicuí-Jacuí, the medium temperature is in excess of 24 °C, and the medium temperature of the river Uruguay surpasses 26 °C. The average maximum temperature stays around 24 to 27 °C on the elevated surfaces of the plateau and, in the lowest areas, between 30 and 32 °C.

In the winter, mainly in July, the medium temperature stays relatively low, oscillating between 10 and 15 °C, except for the valleys of the rivers Paranapanema and Paraná, besides the coast of Paraná and Santa Catarina, where the averages are approximately 15 to 18 °C. The average maximum temperature is also low, around 20 to 24 °C, in the big valleys and in the coast, and 16 to 20 °C in the plateau region. The average minimum temperature varies from 6 to 12 °C,

and the thermometer frequently registers temperatures near 0°C or below, accompanied by frost and snow, in consequence of the invasion of polar masses.

The annual medium pluviosity oscillates from 1,250 to 2,000 mm, except along the coast of Paraná and west of Santa Catarina, where the values are in excess of 2,000 mm, and in the north of Paraná and in a small coastal area of Santa Catarina, which have lower recordings down to 1,250 mm. The maximum pluviometric indexes occur in the winter and the minimum in the summer throughout almost the whole area.

4) North Region

The north area of Brazil embraces a great part of the Amazon Basin, representing the largest extension of hot and humid forest on the planet. The region has a low elevation (0 to 200 m) and is crossed by the Equator. There are four main systems of atmospheric circulation that act in the area, they are: system of winds of Northeast (NE) to East (E) of the Atlantic South and Azores, subtropical anticyclones, generally stable in nature; system of winds of West (W) of the mass equatorial continental (mEc); system of winds of North (N) of CIT; and system of winds of South (S) of the Polar anticyclone. These last three systems are responsible for variability of the climate and for the rains in the area. With regard to temperatures, the climate is hot, with annual medium temperatures ranging from 24 to 26 °C.

Regarding pluviosity, there is not a homogeneity as it occur with the temperature. In the mouth of the river Amazonas, in the coast of Pará and in the western section of the area, the total annual pluviometric index exceeds 3,000 mm in general. In the direction NO-SE, of Roraima to east of Pará there is less rain, with annual totals in the order of 1,500 to 1,700 mm.

The rainy period of the area occurs in summer & autumn, the exception being Roraima and of the north part of Amazonas, where the maximum pluviometric indexes occurs in winter, due to influence of the climatic conditions of the Northern Hemisphere.

5) Middle-West Region

Three systems of circulation occur in the Middle-West region: the system of disturbed currents of the West, represented by unstable events during the summer; system of disturbed currents of the North, represented by CIT, that produces rains in the summer, autumn and winter in the north of the region; and the system of disturbed currents of the South, represented by the polar fronts, invading the area in the winter with great frequency, producing rains of one to three days duration. In the north and south extremes of the region, the annual medium temperature is 22 °C and in the Chapadas it varies from 20 to 22 °C. In the spring and summer, temperatures are

commonly high, the average of the hottest month varying from 24 to 26 °C. The average of the maximum temperatures of September (hotter month) oscillates between 30 and 36 °C.

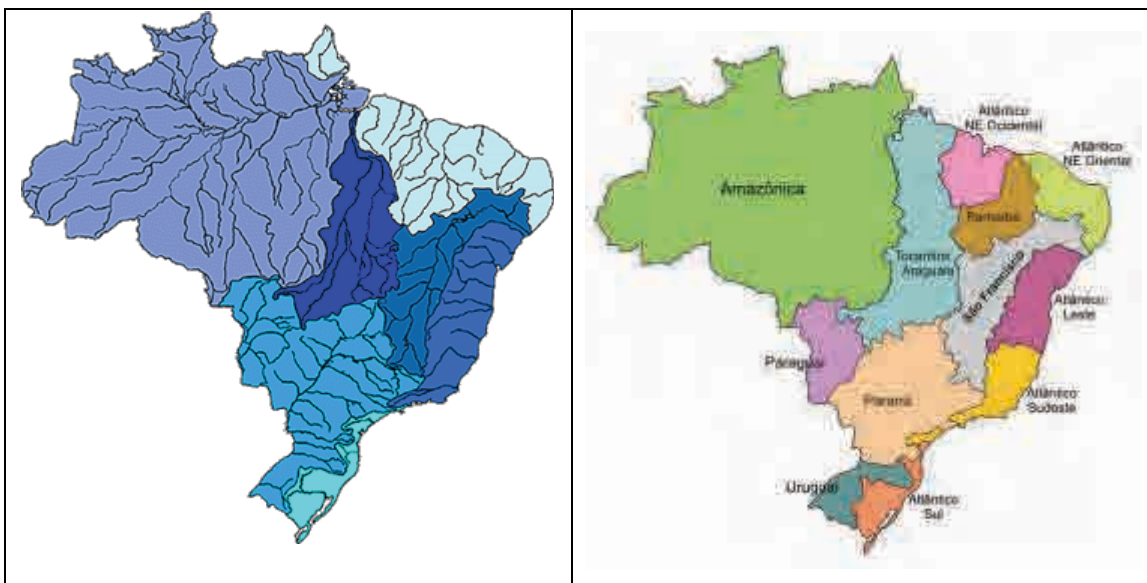
Winter is an interesting season, low temperatures occurring quite frequently. This is caused by the polar invasion, that produces the cold weather which is very common at this time of the year. The medium temperature of the coldest month oscillates between 15 and 24 °C, and the average of the minimum temperatures ranges from 8 to 18 °C. Minimum temperatures are sometimes negative.

The characterization of the pluviosity of the region is almost exclusively due to the system of atmospheric circulation. The annual medium pluviosity varies from 2,000 to 3,000 mm in the north of Mato Grosso, to 1,250 mm in the Pantanal mato-grossense.

In spite of this inequality, the region is well provided with rain. Its seasonality is typically tropical, with maximum in the summer and minimum in the winter. More than 70 % of the total rain that is accumulated during the year falls from November to March. The winter is excessively dry, because the rains are very rare.

1.1.4 River System

Figure 1.1.6 shows the major river system and major hydrographic basins in Brazil.



Nationwide River System (Source: Brazilian Cacti Project, http://www.bractaceae.org/hydrography.html)	Hydrographic Basin System (Source: Wikipedia, http://en.wikipedia.org/wiki/File:Brasil_Bacias_hidrograficas.svg)
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Figure 1.1.6 River System and Hydrographic Basins of Brazil

Brazil has one of the world's most extensive river systems, with eight major drainage basins, all of which drain into the Atlantic Ocean. Two of these basins—the Amazon and Tocantins-Araguaia account for more than half the total drainage area. The largest river system in Brazil is the Amazon, which originates in the Andes and receives tributaries from a basin that covers 45.7 % of the country, principally the north and west. The main Amazon River system is the Amazonas-Solimões-Ucayali axis (the 6,762 km-long Ucayali is a Peruvian tributary), flowing from west to east. Through the Amazon Basin flows one-fifth of the world's fresh water. A total of 3,615 km of the Amazon are in Brazilian territory. Over this distance, the waters decline only about 100 m. The major tributaries on the southern side are, from west to east, the Javari, Juruá, Purus (all three of which flow into the western section of the Amazon called the Solimões), Madeira, Tapajós, Xingu, and Tocantins. On the northern side, the largest tributaries are the Branco, Japurá, Jari, and Rio Negro. The above-mentioned tributaries carry more water than the Mississippi (its discharge is less than one-tenth that of the Amazon). The Amazon and some of its tributaries, called "white" rivers, bear rich sediments and hydro-biological elements. The black-white and clear rivers—such as the Negro, Tapajós, and Xingu—have clear (greenish) or dark water with few nutrients and little sediment.

The major river system in the Northeast is the Rio São Francisco, which flows 1,609 km northeast from the south-central region. Its basin covers 7.6 % of the national territory. Only 277 km of the lower river are navigable for oceangoing ships. The Paraná system covers 14.5 % of the country. The Paraná flows south among the Río de la Plata Basin, reaching the Atlantic between Argentina and Uruguay. The headwaters of the Paraguai, the Paraná's major eastern tributary, constitute the Pantanal, the largest contiguous wetlands in the world, covering as much as 230,000 km².

Below their descent from the highlands, many of the tributaries of the Amazon are navigable. Upstream, they generally have rapids or waterfalls, and boats and barges also must face sandbars, trees, and other obstacles. Nevertheless, the Amazon is navigable by oceangoing vessels as far as 3,885 km upstream, reaching Iquitos in Peru. The Amazon River system was the principal means of access until new roads became more important. Hydroelectric projects are Itaipu, in Paraná, with 12,600 MW; Tucuruí, in Pará, with 7,746 MW; and Paulo Afonso, in Bahia, with 3,986 MW.

According to organs of the Brazilian government there are 12 major hydrographic regions in Brazil. Seven of these are river basins named after their main rivers; the other five are groupings

of various river basins in areas which have no dominant river.

Seven (7) Hydrographic Regions named after their dominant rivers are (i) Amazonas, (ii) Paraguai, (iii) Paraná, (iv) Parnaíba, (v) São Francisco, (vi) Tocantins and (vii) Uruguai. Table 1.1.3 summarizes the major hydrological information of those major river basins.

Table 1.1.3 Summary of Hydrological Information of major River Basin

Name	Basin Area (km ²)	Discharge (m ³ /sec)		
		Average	Max	Min
1. Amazonas	6,915,000	N/A	N/A	N/A
2. Paraguai	365,592	2,700	N/A	N/A
3. Paraná	2,582,672	17,290	65,000	2,450
4. Parnaíba	344,112	N/A	N/A	N/A
5. São Francisco	641,000	2,943	11,718	1,480
6. Tocantins	More than 800,000	13,598	N/A	N/A
7. Uruguai.	365,000	5,500	N/A	N/A

(Source: Wikipedia, http://en.wikipedia.org/wiki/Geography_of_Brazil)

Besides, there are five (5) coastal Hydrographic Regions based on regional groupings of minor river basins (listed from north to south) such as (i) Atlântico Nordeste Ocidental (Western North-east Atlantic), (ii) Atlântico Nordeste Oriental (Eastern North-east Atlantic), (iii) Atlântico Leste (Eastern Atlantic), (iv) Atlântico Sudeste (South-east Atlantic) and (v) Atlântico Sul (South Atlantic).

The Amazon River is the widest and second longest river (behind the Nile) in the world. This huge river drains the greater part of the world's rainforests. Another major river, the Paraná, has its source in Brazil. It forms the border of Paraguay and Argentina, then winds its way through Argentina and into the Atlantic Ocean, along the southern coast of Uruguay.

1.1.5 Land Use



Figure 1.1.7 Land Use of Brazil

(Source: University of Texas Library, <http://www.lib.utexas.edu/maps/brazil.html>)

(1) General View

From the viewpoint of relations between land use and global changes, Brazil has an important position on the world stage. Firstly, its territorial and demographic dimensions place it among the 10 largest nations in the world. Secondly, the existence of its immense, and as yet largely untouched, rainforest, place Brazil in the front line in terms of the planet's remaining natural vegetation cover. Thirdly, the extreme inequality of income distribution within the country, in both social and territorial terms, limits the options for social improvement and contributes towards the great mobility of Brazil's population, one of the main factors in determining the

speed and size of land use changes.

Accelerated industrialization and territorial expansion processes implemented by the Brazilian Government was engaged in the beginning of the 70's, by means of the 1st and 2nd National Development Plans. These were decisive in redesigning the spatial distribution of the Brazilian productive base, and speeding up the use of resources in the Amazon frontier.

In historic terms, the expansion of farming and cattle raising has been responsible for the main alterations in land use and cover in Brazil. The new frontiers, already well described in Brazilian scientific publications, constitute the main cause for the increase of cleared areas for agricultural and cattle raising. The advance of agriculture over areas of natural forest, together with extensive cattle raising on open lands and savannas, lead to the cutting down and burning of natural forests. These have been the principal causes for the loss of natural vegetation cover and for the large-scale changes in land use in Brazil over the last 50 years

(2) Amazon Forest Area

Ecosystems in the Amazon take up a surface area of 4,005,082 km². Water and native vegetation still cover approximately 92 % of the area. Land use and occupation in the Amazon concentrate on plant and animal extraction - including and dominated by: the lumber industry, cattle raising, and subsistence farming, as well as the cultivation of some tree and bush species with medium-to-long life cycles. Continued use of traditional exploitation methods will lead to more deforestation, leaving the region's main environmental problem still unresolved. The large ranch owners consider deforestation and cattle raising to be activities that confirm their legitimate right over the properties; for the smallholders, cattle raising is a fast way to increase the value of the land, as it is unable to recycle nutrients after the first few years of cultivation. The substitution of woodland by pasture leads to a build-up of phosphorous in the soil, with more erosion – as water runs off pastures 10 times faster than in the forest – leading to more intense flooding during the rainy season and less water for the rivers during the dry season.

The practice of lumbering opens up routes for land settlement and representing an increased risk from fires set to renew pastures, or for other agricultural practices. This new phenomenon is introducing fire as part of the evolution of the landscape in populated areas of the Amazon. The dry, recently cleared areas, around the forest are burned every year for planting and most of the heat sources are found there. However, this dryness, resulting from the clearing of the native forest, brings the possibility for disastrous fires such as the one in Roraima in 1998. The introduction of grain crops to the Amazon is a new thing for a region that has always lived from the extraction of the forest's wealth, and more recently from large-scale cattle raising. The leading culture for this new model is the soy bean, which, together with rice and corn, have

conquered the savannas of the Amazon region and now advance to the north along roads cut through the forest. The largest grain plantations are in the State of Mato Grosso, mainly on the Parecis Plain, where the weather and topography are especially favorable for mechanized farming. The high productivity obtained in the Pre-Amazon region are unlikely to be repeated at competitive costs in the forested areas, due to the high rainfall, which facilitates the proliferation of insects and fungus, and to the high acidity of the leached forest soil.

(3) Savannas (Cerrados)

The savannas cover some 2.04 million km² (about 23% of the area of Brazil), occupying a large part of the country's central region, bordering on all the other main ecosystems in Brazil. The savannas covers most of the territory of the states of Goiás, Tocantins, Mato Grosso and Mato Grosso do Sul, and also the Federal District. The savannas are among the largest land areas still available in the world, and could in the short term, increase grain production and supply grazing land to meet present demand. The region has thus become a new frontier in agricultural terms, with high settlement growth rates. This intensive exploitation of the savannas has led to various types of environmental problems. The rapid expansion of farming and cattle raising that is happening in the region is causing large-scale environmental damage: erosion and compacting of soil, chemical contamination of waterways and the 'biota' by the use of pest controls, unsuitable irrigation techniques, and cut-and-burn clearing. The use of technologies designed for different environments, such as the irrigation of the so-called highlands using intensive, pivoted irrigation systems, require water volumes which the savannas is, at the moment at least, unable to supply. Questions are being asked about the use of this type of equipment on the savannas, as when used improperly, they can cause the water table to go down significantly and generate serious future water supply problems, including for human consumption. The pivot method is also not very efficient as it causes high water losses due to dispersion. The cut-and-burn clearing method is used, mainly, to create large areas of pasture for cattle. During the preparation of the pastures, which are a single crop, various instruments are used intensively, such as soil correction, fertilizers, herbicides, pesticides and a lot of heavy machinery. The immediate effect is to make the ecosystem poorer through the loss of native species of vegetation, creating the conditions for the proliferation of pests, insects and weeds.

Technological innovations incorporated into the production systems for soy beans, corn and rice have led to new forms of production in the savannas. The value of the crops has been enhanced by the industrialized production of chaff, feed-cake and vegetable oil, which enter the economy, leading cattlemen to modernize their practices through the use of balanced feeds, made from chaff and grain residuals, which also effect pig and chicken farming. Production of soy beans in the savannas rose, by the end of the 90's, to about 4 % of total production in Brazil, with higher than national average productivity rates, especially in Mato Grosso. Corn production is also

important in the region, with productivity rates 47 % above national average (3,476 kg/ha versus 2,362 kg/ha), as seen in Goiás State. Cotton and rice are also important crops in the region, being responsible for up to 23 % of the total produced in the country, with productivity higher than the national average.

Cattle raising in the region has also experienced improvements due to new technology, increasing its participation in national production. In 1970, the Center-West had 17.2 million head of cattle, growing to 39.6 million in head in 1985, and to 52.2 million in 1993, or 34 % of all the cattle in Brazil in that year. Cattle raising is to be found all over the region, although increased numbers and more intensive methods are more frequently seen in the eastern part of the region, especially in Mato Grosso do Sul, along the border with São Paulo, and in the central part of Goiás.

(4) Caatingas

The Caatingas or the deciduous forests of the semi-arid Northeast cover an area of 939,391 km². Approximately 60 % of that area is covered by native vegetation that has been altered to some extents. This degradation – which must affect more than 50 % of the natural areas – continues to be caused by the production of firewood; by overgrazing; and sometimes by fire. It should be noted that, as the herb cover disappears during the dry season – different to the savannas – fire isn't used to improve natural grassland. Man's use and occupation of land is mainly for farming, using short-cycle methods, and cattle raising. Medium and long-term methods are only used in a few locations and are not representative. Fruit and grain are produced in certain irrigated areas. Mining and the areas destined for regional infrastructure represent only a very small part of the region. The agriculture practiced in this part of the semi-arid was organized around the cattle-cotton-food crop complex in vigor up to the middle of the 70's. Labor productivity has always been low, although the population that took their living from the activities of this complex, such as smallholders, residents and workers with no land title, managed to survive, making their living from cotton and food crops. Any disorganization of these activities, such as the drought of 1979-83, or the 'bicudo' pest that has attacked cotton plantations since 1980, and agriculture in the Northeast loses one of its main sources of income and employment, and on which those categories of rural workers depend. Modern agriculture, whilst expanding in the semi-arid region, has not yet attained sufficient volume or area, to be an option for the workers that are losing their source of income because of the gradual extinction of the activities of the cattle-cotton-food crop complex. The attempts to introduce higher production varieties of herb cotton, a single crop culture, haven't been successful. The cultivation of fruit, which has started to appear in the interior, around the few irrigation projects - public and private – are an alternative of great importance. It is, however, still restricted to small extensions of the irrigated lands along the humid valleys of the semi-arid region, and requires capital and a qualified

workforce, both of which are in short supply among the workers from the areas of the cattle-cotton-food crop complex. Cattle raising, restricted, for technical reasons, to farms of at least 200 ha, but preferably with more than 500 ha, continues to be carried out using traditional methods.

Environmental degradation of the semi-arid region, has been happening for a long time, due mainly to the continued extensive cutting down of tree cover and the resulting soil erosion. This is the most visible sign, marks especially on the rocks, the semi-arid region having lost its capability to retain water in the soil or sub-soil. Consequently, the runoff of rainwater, year after year, feeds the process whereby the remaining fine layers of soil are swept away. The small streams and rivers used to run, during a few months of the year, with water from the water tables that were replenished during the rainy season. They no longer exist. A number of factors contribute to this degradation. Among them, the high population density of the semi-arid Northeast, resulting in the occupation of large areas by subsistence farming, with even greater areas being used to raise cattle, sheep and goats, with no preoccupation with the need to conserve soil and water. This shows clearly the lack of any sustainability. The situation tends to get even worse as the local population continue to ignore the need to conserve soil and water in the Drought Polygon (Polígono das Secas).

(5) Pantanal

The Pantanal region takes up an area of 165,000 km². Native vegetation covers more than 97 % of the area, already partly altered by cattle raising and improvements made to the native pastures. Land use and occupation is almost exclusively related to cattle raising. At a secondary level, fishing and the (not always legal) capture of wild animals, tourism and leisure activities, and mining, which is found only at Corumbá. The productive system in the Pantanal works with those in adjoining areas. As a counterpart, the use and occupation of these adjoining lands have a negative effect on the ecosystems of the Pantanal.

The Pantanal has certain peculiarities that characterize it as a specific sub-region, and is considered to be the largest wet plain on the planet. The sub-region extrapolates Brazil's frontiers, and occupies an area equivalent to 165,000 km², of which 130,000 km² are in Mato Grosso do Sul and 35,000 km² in Mato Grosso. It is one of the largest natural hatcheries in the world, with its own geomorphological formation, and has the largest fauna of the Americas. Its large expanses of water are a traditional fishing area, attracting sportsmen from around the world.

Economically, the region is a cattle area, using intensive predatory methods. Although this activity has, in a way, become adapted to the environment, the indiscriminate increase in the

number of cattle and their constant movements have unbalanced the regional ecosystem, based on alternating floods and dry periods.

(6) Atlantic Forest (Mata Atlântica)

The agricultural exploitation of the group of ecosystems that make up the Atlantic Forest intensified at the start of the last decades of the 1700s and beginning of the 20th.C. During this period, seeds were planted on the ashes of the recently burned forest, dispensing with the need to plough the soil, to weed, or to use organic or chemical fertilizers. This soil gave a very good return for about two or three years, after which time the area was left fallow. A secondary natural growth would then cover this land and some years later, it too would be burned to give way to crops for two or three more years.

However, the increasing population and the resulting demand for crops, forced a reduction in the 10 year period land was left fallow, with the result that the forest didn't have time to grow back. The limits of this type of productive system, where the recovery of the soil depended, fundamentally, on land rotation, became more and more evident. At the end of the 1960's, the use of chemical fertilizers rejuvenated the tired soil, and later, with the arrival of the Green Revolution, a homogeneous group of new technological procedures were put in use. This substitution at the technical base of farming and cattle raising, permitted the implementation of large-scale, single-crop systems, starting a period of radical change in the South and Southeast of Brazil. This modernization process was also helped by the existence of subsidized credit for agriculture, and by very large investments by the public sector in research and teaching in the field of agronomy. Improvements in international agricultural processes also helped, as did the so-called 'miracle' period for the Brazilian economy. During the initial years, the new technologies resulted in surprising increases in yields for almost all crop types. However, the euphoria of the large yields was undermined by the social and environmental problems that, even today, are evident in the agriculture practiced in these ecosystems.

Another characteristic of the end of the 20th century is the advance of agribusiness in almost all the South - Southeast regional complex. The production of soy beans; sugar cane; oranges; coffee; corn; and fowls and pigs, are among the most important examples of this process: not only because of changes they brought to the farming community, but also because of their very strong dependence on chemical, mechanical and genetic industrialized inputs, and the fact that most of the production is now destined for industrialization. These same 'giants' of the agribusiness are also major 'consumers' of the natural resources of the ecosystems of these regions, and in some cases, are responsible for environmental depletion on a similar scale.

(7) Coastal Zone

The original vegetation cover, mainly mangroves and the primitive vegetation found on sand shelves, was seriously affected by human occupation, especially when you consider that 45 % of the Brazilian population lives, works and plays in the Coastal Zone. The association of power generating plant with specialized terminals and industrial plants, increases significantly the risk of accidents, as well as the long-term exposure of the population to toxic substances in the water and air.

The concentration of industries along the Coastal Zone, where you find oil and natural gas fields, terminals and pipelines, thermoelectric and nuclear power generators, and large concentrations of chemical and other plant. Accidents involving oil spills and leakage of gas and toxic effluent are recurrent events along various stretches of the Brazilian coastline, with serious results, affecting people's lives at every level.

1.1.6 Demographics

According to the 2010 revision of the World Population Prospects the total population was 194,946,000 in 2010, compared to only 53,975,000 in 1950. The proportion of children below the age of 15 in 2010 was 25.5 %, 67.5 % was between 15 and 65 years of age, while 7 % was 65 years or older. Figure 1.1.9 shows the ethnic and minority composition of Brazil. As shown in this figure, white people shares 48 % of entire population, and then, Mulato (43 %), Afro-descendants (8 %), Asian (1 %) and indigenous groups (0.4 %).

Table 1.1.4 Demographic Composition of Brazil

Year	Total population (x 1000)	Population aged 0-14 (%)	Population aged 15- 64 (%)	Population aged 65+ (%)
1950	53,975	41.6	55.5	3.0
1960	62,880	42.0	55.0	3.0
1965	84,389	43.6	53.0	3.4
1970	96,078	42.3	54.2	3.5
1975	108,224	40.2	56.0	3.8
1980	121,712	38.0	58.0	4.0
1985	136,247	36.9	59.0	4.1
1990	149,650	35.2	60.4	4.5
1995	161,848	32.4	62.6	5.0
2000	174,425	29.5	64.9	5.6
2005	185,987	27.5	66.2	6.3
2010	194,946	25.5	67.5	7.0

(Source: United Nation, Department of Economics and Social Affair,
<http://esa.un.org/unpd/wpp/index.htm>)

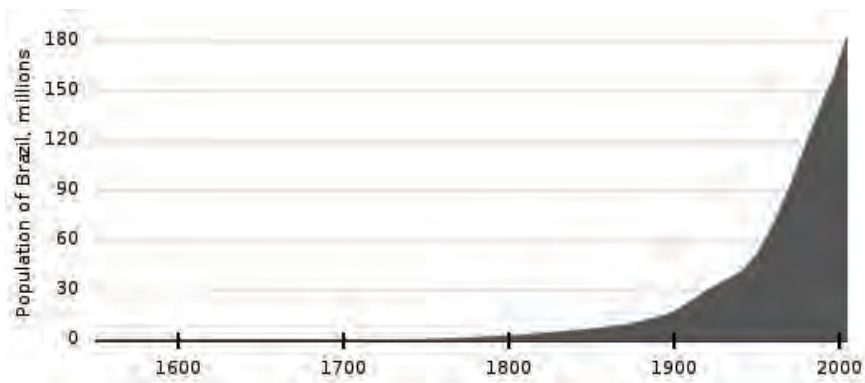
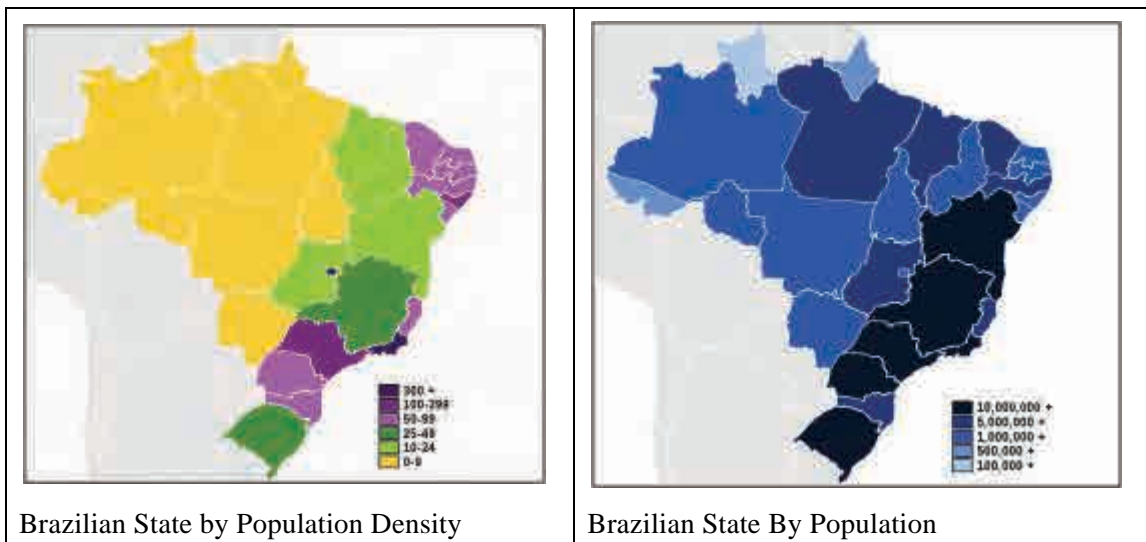


Figure 1.1.8 Entire Population Trend of Brazil (1550 – 2005)

(Source: Wikimedia, http://upload.wikimedia.org/wikipedia/commons/7/75/Population_of_brazil.svg)



Brazilian State by Population Density

Brazilian State By Population

Figure 1.1.9 Brazilian Population Statistics

(Source: Wikipedia, http://en.wikipedia.org/wiki/Demographics_of_Brazil#cite_note-WPP_2010-5)

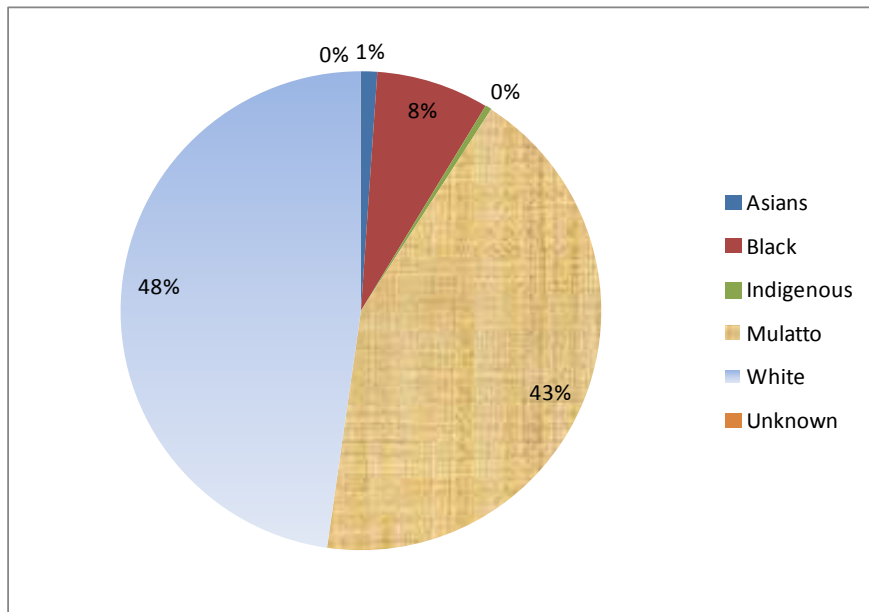


Figure 1.1.10 Percentage of Racial and/or Ethnic Groups

Note: total population is of 1,90,755,799 (see Table 7.4.1 of Chapter 7 for more detailed information)

Source: UN Statistics Division, 2011

1.2 Legal and Political Systems: Environmental and Social Considerations

1.2.1 Calendar and Time Zone

As mentioned earlier, there are three (3) time zones in Brazil such as (i) BRT - Brasilia (Standard) Time / BRST - Brasilia Summer Time, (ii) AMT - Amazon (Standard) Time / AMST - Amazon Summer Time, and (iii) FNT - Fernando de Noronha Archipelago Time.

The time, shown in most part of Brazil is Brasilia Time (BRT) which is 3 hours behind Greenwich Mean Time (GMT-3). Basically, the time in Brazil is determined at the state level.

1.2.2 Cabinet of Brazil¹

The Cabinet of Brazil is composed of the Ministers of State and senior advisors of the executive branch of the federal government of Brazil. Cabinet officers are appointed and dismissed by the President. There are currently twenty-four (24) Ministries of State and fourteen (14) other cabinet-level offices. Among of them, Ministry of Environment (Portuguese: Ministério do Meio Ambiente, MMA) is a cabinet-level federal ministry in Brazil. Major roles and activities of MMA are described in Section 1.2.5 of this chapter.

¹ Wikipedia, http://en.wikipedia.org/wiki/Cabinet_of_Brazil

1.2.3 Administrative Division

The Federative Republic of Brazil is a union of twenty-seven (27) Federative Units (Portuguese: Unidades Federativas (UF)): twenty-six (26) states (estados; singular estado) and one (1) federal district (distrito federal), where the federal capital, Brasília, is located. The states are generally based on historical, conventional borders which have developed over time. The federal district is not a state in its own right, but shares some characteristics of a state as well as some of a municipality.

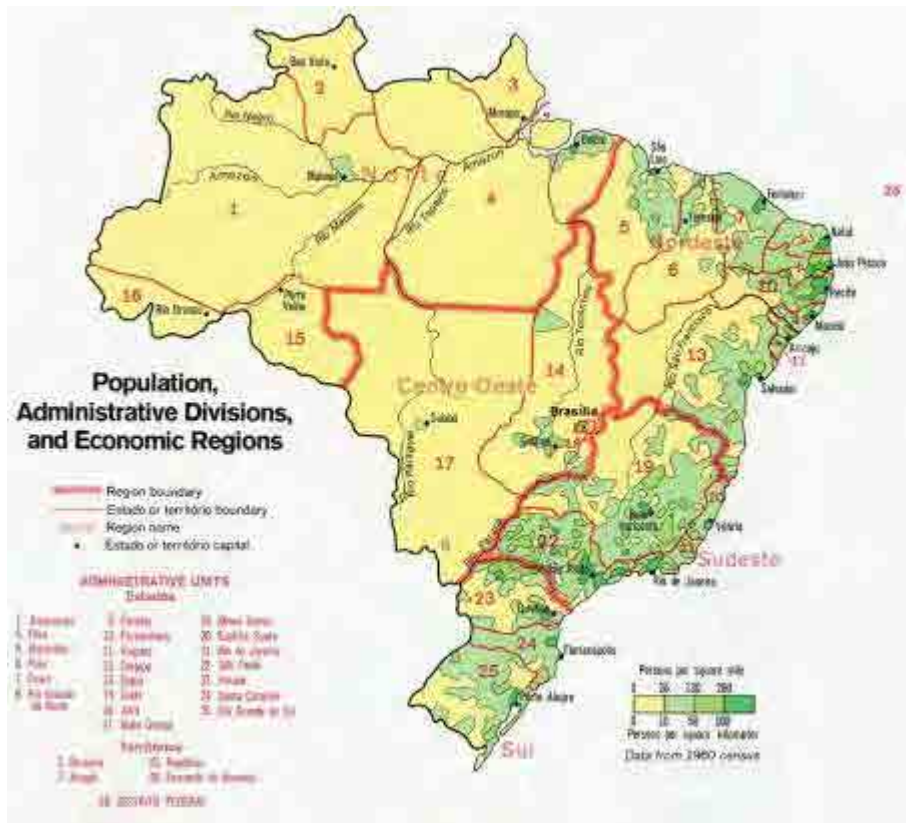


Figure 1.2.1 Administrative Division of Brazil

(Source: CIA, <https://www.cia.gov/library/publications/the-world-factbook/geos/br.html>)

Basically, entire country is classified into following five (5) regions, i.e., (i) North Region, (ii) North-East Region, (iii) Central West Region, (iv) South-West Region, and (v) South Region (see Table 1.2.1).

Table 1.2.1 Regional Composition

Region	Number of states	States
North	7	Acre, Amapá, Amazonas, Pará, Rondônia, Roraima and Tocantins.

North-East	9	Maranhão, Piauí, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe and Bahia,
Central West	3(4)	Goiás, Mato Grosso, Mato Grosso do Sul; along with Distrito Federal (Federal District)
South East	4	Espírito Santo, Minas Gerais, Rio de Janeiro and São Paulo.
South	3	Paraná, Santa Catarina and Rio Grande do Sul

Note: Number shown in parenthesis indicates the total state number including DF.

Source: Wikipedia,

http://en.wikipedia.org/wiki/North_Region,_Brazil

http://en.wikipedia.org/wiki/Northeast_Region,_Brazil

http://en.wikipedia.org/wiki/Central-West_Region,_Brazil

http://en.wikipedia.org/wiki/Southeast_Region,_Brazil

http://en.wikipedia.org/wiki/South_Region,_Brazil

1.2.4 Fiver Year Development Plan

In 1954, then Brazilian, President Juscelino Kubitschek commissioned a five-year development plan in which the government set specific targets. His successor, President João Goulart, established a dedicated Ministry of Planning. Following spectacular success, Goulart transformed the plan into a three-year plan, which was then partially undermined by political upheaval in Brazil. Military regimes thereafter interrupted Brazil's planning effort.

✓ **PAC (Programa de Aceleração do Crescimento, Growth Acceleration Program)**

The Programa de Aceleração do Crescimento (Growth Acceleration Program), better known as PAC, is a major infrastructure program of the Federal government of Brazil. The program was launched on January 28, 2007, by the Lula da Silva administration, consisting of a set of economic policies and investment projects with the objective of accelerating economic growth in Brazil, i.e., the increase of investment in infrastructure and provision of tax incentives for faster and more robust economic growth. PAC is a strategic investment program that combines management initiatives and public works and forecasts investments by the Federal government, state enterprises and the private sector in construction, sanitation, energy, transport and logistics. In its first phase, launched in 2007, the program called for investments of US\$ 349 billion (R\$ 638 billion), of which 63.3% has been applied for the 2007-2010 quadriennium.

✓ **PAC 2**

The Rouseff administration has continued the program under the name PAC 2. PAC 2 includes new investment projects for the periods 2011 to 2014 and post-2014, as well as projects initiated during PAC 1 with activities that will conclude after 2010. For the period following 2014, the estimated investment is US\$ 346.4 billion (R\$ 631.6 billion). The two periods combined reach an amount of US\$ 872.3 billion (R\$ 1.59 trillion, see Table 1.2.2).

Similar to the first phase of the program, PAC 2 focuses on investments in the areas of logistics, energy and social development, organized under following six major initiatives: (i) Better Cities (urban infrastructure), (ii) Bringing Citizenship to the Community (safety and social inclusion), (iii) My House, My Life (housing), (iv) Water and Light for All (sanitation and access to electricity), (v) Energy (renewable energy, oil and gas); and (vi) Transportation (highways, railways, airports). Table 1.2.3 summarizes objective and focused areas of each initiative.

Table 1.2.2 Breakdown of PAC 2

PAC 2 INVESTMENTS in US\$ billion (R\$ billion)			
PAC 2 INITIATIVES	2011-2014	POST-2014	TOTAL
BETTER CITY	31.3 (57.1)	-	31.3 (57.1)
BRINGING CITIZENSHIP TO THE COMMUNITY	12.6 (23.0)	-	12.6 (23.0)
HOUSING	152.5 (278.2)	-	152.5 (278.2)
WATER AND LIGHT FOR ALL	16.6 (30.6)	-	16.6 (30.6)
TRANSPORTATION	57.3 (104.5)	2.4 (4.5)	59.7 (109.0)
ENERGY	255.3 (465.5)	343.9 (627.1)	599.2 (1,092.6)
TOTAL	526.0 (958.9)	346.4 (631.6)	872.3 (1,590.5)

Source: World Bank,
<http://blogs.worldbank.org/growth/brazil-announces-phase-two-growth-acceleration-program>

Table 1.2.3 Objective and Focused Areas of each Initiatives (PAC 2)

	Initiative	Objective	Area of Focus
1	BETTER CITY	Tackle the major challenges facing large urban areas to improve quality of life.	Sanitation, crime prevention in high-risk areas, urban mobility, paving.
2	CITIZEN COMMUNITY	Increase the availability of State services in poorer districts.	Emergency care units, basic health clinics, daycare and pre-school centers, school sports facilities, community police stations.
3	MY HOUSE, MY LIFE	Reduce the housing deficit, stimulate the civil construction sector, and generate jobs and income.	“My House, My Life” program, SBPE financing (Brazilian savings and loans system), urbanization of informal settlements.
4	WATER AND LIGHT FOR ALL	Provide general access to water and electricity.	“Light for All” program, water supply in urban areas, water resources.
5	TRANSPORTATION	Consolidate, expand and integrate logistics network to ensure quality and safety.	Highways, railways, ports, waterways, airports, local roads
6	ENERGY	Secure reliable supply of energy through a mix of clean, renewable sources; expand production of oil in pre-salt region.	Electricity, oil and natural gas, shipbuilding, renewable fuels, energy efficiency, mineral research.

In 2012, the Government launched a range of initiatives to reduce energy costs, restructure oil royalty payments, strengthen investment in infrastructure through foreign participation, and reform the sub-national value-added tax.

Brazil experiences extreme regional differences, especially in social indicators such as health, infant mortality and nutrition. The richer South and Southeast regions enjoy much better indicators than the poorer North and Northeast.

Poverty (people living with US\$ 2.0 per day) has fallen markedly, from 21 % of the population in 2003 to 11 % in 2009. Extreme poverty (people living with US\$1.25 per day) also dropped dramatically, from 10 % in 2004 to 2.2 % in 2009.

Between 2001 and 2009, the income growth rate of the poorest 10 % of the population was 7 % per year, while that of the richest 10 % was 1.7 %. This helped decrease income inequality (measured by the Gini index) to reach a 50-year low of 0.519 in 2011.

Despite these achievements, inequality remains at relatively high levels for a middle income country. After having reached universal coverage in primary education, Brazil is now struggling to improve the quality and outcome of the system, especially at the basic and secondary levels.

There has been enormous progress in decreasing the deforestation of the rain forest and other sensitive biomes, but the country faces important development challenges in combining the benefits of agricultural growth, environmental protection and the sustainable development.

As one of the leading nations on climate negotiations, Brazil has committed voluntarily to reducing its greenhouse gas emissions by between 36.1 % and 38.9 % until 2020.

1.2.5 Relevant Organizations

(1) SISNAMA (National System of Environment).

By the Law No.6.938 of 1981, the National Council of Environment (CONAMA) and National System of Environment (SISNAMA) were established. Figure 1.2.2 shows the organization chart of SISNAMA. Main objectives of SISNAMA are as follows: (1) supporting environmental protection activities and those relevant technology registration policies therein, (2) insuring the right of every individuals to enjoy healthy environment, and (3) protecting the natural heritage and the sovereignty of the nation. The Ministry of Urban Development and Environment was established by the Law No. 91.145 of 1985, and re-organized as the Ministry of Environment in 1999.

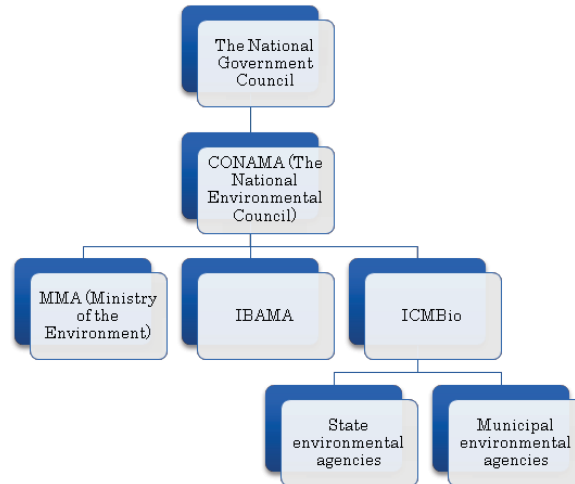


Figure 1.2.2 Organization Chart of SISNAMA.

(2) Organizations on National Level

Table 1.2.4 summarizes administrative functions of major environmental organizations on the national level. Figure 1.2.3 shows the organization diagram of MMA.

Table 1.2.4 Administrative Function of Major Environmental Organizations

Organization	Functions
1. Ministry of Environment (MMA)	The supreme organization of environmental administration mainly engaged in establishment of environmental policy on national level. Mainly, the Ministry consists of following five bureaus such as (i) Environment of Human Society, (ii) Bio-Diversity and Forest, (iii) Water Resources, (iv) Sustainable Development, and (v) Development of Amazon Region.
1-1 CONAMA (National Environmental Board)	One of the MMA's organizations engaged in environmental administration.
1-2 CONAMAZ (National Council of Amazon Region)	One of MMA's organizations engaged in biological, social and ecological investigations in the Amazon Region.
1-3 National Council of Water Resources	One of MMA's organizations engaged in water resources development and conservation of water resources.
1-4 National Committee of Environmental Fund	One of MMA's organization engaged in the administration of environmental protection fund.
1-5 IBAMA (Brazilian Institute of Environment and Renewable Natural Resources)	The supreme organization, belonging to MMA, mainly engaged in the implementation of the environmental protection and pollution control activity within the current environmental legal system on national level.
1-6 ICMBio (Instituto Chico Mendes de Conservação da Biodiversidade)	Mainly Responsible for the analysis and procedures for requests and concession of Authorization for Environmental Licensing to activities or enterprises which affect federal protected areas, its buffer zones or surroundings

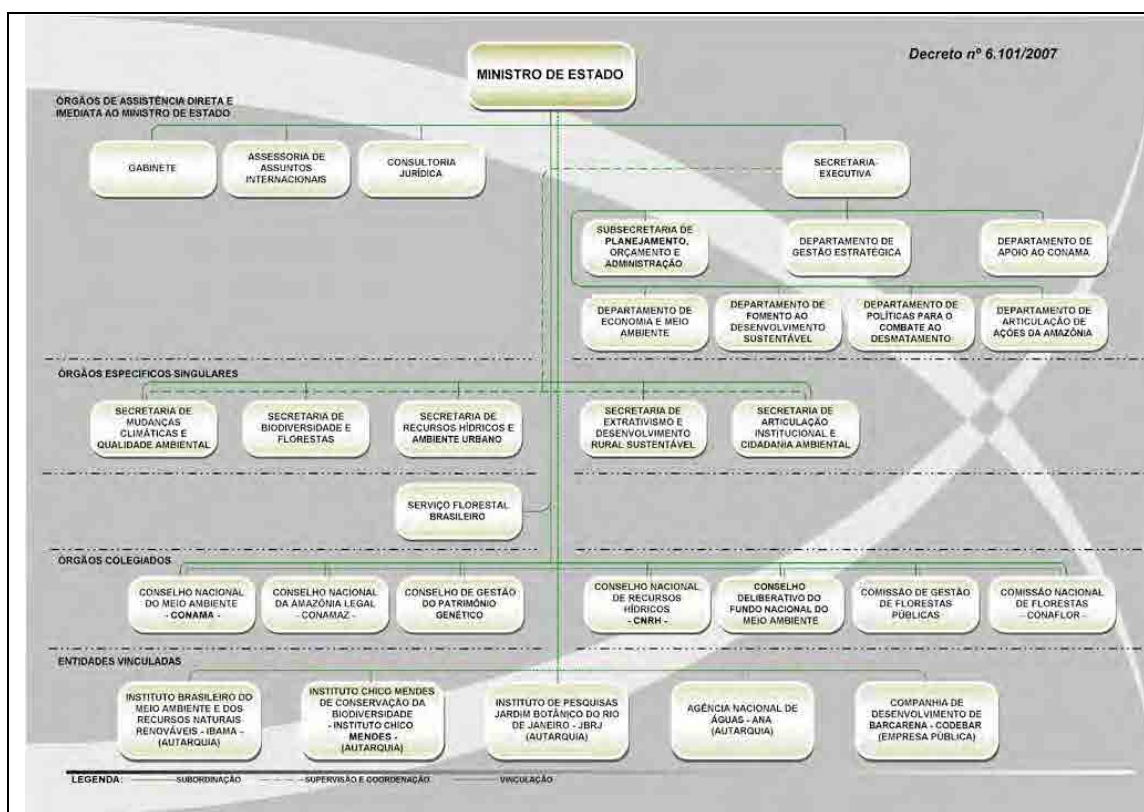


Figure 1.2.3 Organization Diagram of MMA

Source: MMA, <http://www.mma.gov.br/o-ministerio/organograma>

Table 1.2.5 summarizes other governmental agencies involved in the federal process of the environmental licensing in Brazil

Table 1.2.5 Administrative Function of Major Organizations involved with Environmental Licensing in Brazil

Organization	Functions
1. FUNAI (Fundação Nacional do Índio)	Mainly responsible for the analysis and evaluation of impacts caused by activity in lands which belong to natives/indigenous communities, as well as appreciation of adequate proposals with measures to control and mitigate those impacts.
2. FCP (Fundação Cultural Palmares):	Mainly responsible for the analysis and evaluation of impacts caused by activity in lands which belong to escaped slave communities, as well as appreciation of adequate proposals with measures to control and mitigate those impacts.
3. Ministry of Culture	The supreme organization mainly engaged in the implementation of the conservation of historical/architectural and cultural Heritage on national level. Some institute of this ministry, in particular, IPHAN (National Institute of Historical/Architectural and Cultural Heritage) performs archaeological/historical and cultural research, engage in conservation works, and conduct other relevant activities.
4. Ministry of Health (MS, Ministério da Saúde)	Mainly responsible for the analysis, evaluation and recommendation concerning the impacts and their influence factor to the occurrence of malaria cases, if the activity is located in endemic areas of malaria.
5. ANA (Agência Nacional de Águas)	Determines and grants an authorization for use of water according to surface distribution and mediate its multiple uses (water for drinking, irrigation, industry demands etc).

(3) Organization on Regional Level

In Brazil, the process of decentralization including the environmental licensing is on-going, and each state has its own licensing agency and processes can have specific interpretations based on local peculiarities. Basically, no discrimination within the importance of environmental EIA/RIMA ruling, made by either of municipality, state and federal exist. For instance, IBAMA always respects State decision and vice versa, and does not intervene the ruling made by others one another.

Table 1.2.6 presents the environmental agencies of each state in Brazil and Figure 1.2.4 shows the political map of Brazil. Table 1.2.7 summarizes major index such as state capital, area and population of each state in Brazil.

Table 1.2.6 Environmental Agencies of Each State in Brazil

State	Abbreviation	Agency Name
Acre (AC)	SEIAM	Sistema Estadual de Informações Ambientais
Amazonas (AM)	SDS	Secretaria de Estado de Meio Ambiente e Desenvolvimento Sustentável
Roraima (RR)	FEMACT	Fundação do Meio Ambiente e Recursos Hídricos
Rondônia (RO)	SEDAM	Secretaria de Desenvolvimento Ambiental
Pará (PA)	SEMA	Secretaria de Estado de Meio Ambiente*1
Amapá (AP)	SEMA/AP	Secretaria de Estado do Meio Ambiente
Mato Grosso (MT)	SEMA/MT	Secretaria de Estado do Meio Ambiente
Mato Grosso do Sul (MS)	SEMAC	Secretaria de Estado de Meio Ambiente e Recursos Hídricos do Mato Grosso do Sul
Maranhão (MA)	SEMA/MA	Secretaria de Estado de Meio Ambiente e Recursos Naturais
Tocantins (TO)	SEPLAM	Secretaria do Planejamento e Meio Ambiente
Goiás (GO)	SEMARH/GO	Secretaria do Meio Ambiente e dos Recursos Hídricos
Distrito Federal (DF)	SEMARH/DF	
Minas Gerais (MG)	SEMAD	Secretaria de Estado de Meio Ambiente e Desenvolvimento sustentável
São Paulo (SP)	CETESB	Companhia de Tecnologia e Saneamento Ambiental
Paraná (PR)	SEMA/PR	Secretaria de Estado do Meio Ambiente e Recursos Hídricos
Santa Catarina (SC)	FATMA	Fundação do Meio Ambiente
Rio Grande do Sul (RS)	SEMA/RS	Secretaria Estadual do Meio Ambiente
Rio de Janeiro (RJ)	SEMADUR	Secretaria de Estado de Meio Ambiente e Desenvolvimento Urbano
Espírito Santo (ES)	IEMA	Instituto Estadual de Meio Ambiente e Recursos Hídricos
Piauí (PI)	SEMAR	Secretaria de Meio Ambiente e Recursos Naturais
Ceará (CE)	SEMACE	Superintendência Estadual do Meio Ambiente
Rio Grande do Norte (RN)	IDEMA	Instituto de Desenvolvimento Econômico e Meio Ambiente
Paraíba (PB)	SUDEMA	Superintendência de Administração do Meio Ambiente
Pernambuco (PE)	SECTMA	Secretaria de Ciência, Tecnologia e Meio Ambiente
Alagoas (AL)	SEMARHN	Secretaria Executiva de Meio Ambiente, Recursos Hídricos e Naturais
Sergipe (SE)	SEMA/SE	Secretaria do Meio Ambiente
Bahia (BA)	SEMA/BA	Secretaria de Meio Ambiente e Recursos Hídricos

*1: former SECTAM

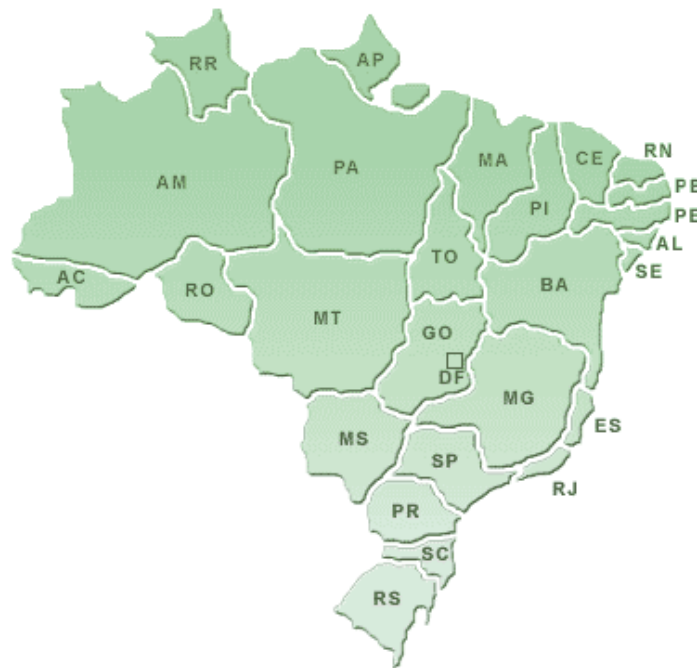


Figure 1.2.4 Political Map of Brazil

Source: BNDES, 2006

Table 1.2.7 Summary of States in Brazil

State (Abbreviation)	State Capital	Area (km ²)	Population
Acre (AC)	Rio Branco	152,581.4	790,500
Amazonas (AM)	Manaus	1,570,745.7	3,859,700
Roraima (RR)	Boa Vista	224,299.0	497,000
Rondônia (RO)	Porto Velho	237,576.2	1,752,000
Pará (PA)	Belém	1,247,689.5	8,075,000
Amapá (AP)	Macapá	142,814.6	751,000
Mato Grosso (MT)	Cuiabá	903,357.9	3,225,000
Mato Grosso do Sul (MS)	Campo Grande	357,125.0	2,620,300
Maranhão (MA)	São Luís	331,983.3	6,851,000
Tocantins (TO)	Palmas	277,620.9	1,500,000
Goiás (GO)	Goiânia	340,086.7	6,524,000
Distrito Federal (DF)	Brasília	5,822.1	2,886,520
Minas Gerais (MG)	Belo Horizonte	586,528.3	20,736,000
São Paulo (SP)	São Paulo	248,209.4	44,065,000
Paraná (PR)	Curitiba	199,314.9	11,084,000
Santa Catarina (SC)	Florianópolis	95,346.2	6,668,250
Rio Grande do Sul (RS)	Porto Alegre	281,748.5	11,352,000
Rio de Janeiro (RJ)	Rio de Janeiro	43,696.1	16,385,000
Espírito Santo (ES)	Vitória	46,077.5	3,511,672
Piauí (PI)	Teresina	251,529.2	3,119,015
Ceará (CE)	Fortaleza	148,825.6	8,448,055
Rio Grande do Norte (RN)	Natal	52,796.8	3,421,000
Paraíba (PB)	João Pessoa	56,439.8	3,945,000
Pernambuco (PE)	Recife	98,311.6	9,279,000
Alagoas (AL)	Maceió	27,767.7	3,322,000
Sergipe (SE)	Aracaju	21,910.3	2,225,000
Bahia (BA)	Salvador	564,692.7	15,127,000

(Source: Wikipedia, http://en.wikipedia.org/wiki/States_of_Brazil)

1.3 Overview and Contact detail of Relevant Organizations

1.3.1 Governmental Organization and Research Institute

(1) Central Government

Table 1.3.1 summarizes major function of environmental agencies within the central government.

Table 1.3.1 Environmental Administration at Central Level

Organization	Contact Address
Ministry of Environment (Ministério do Meio Ambiente, MMA)	Esplanada dos Ministérios, Bloco B - 70068-900, Brasília - DF, Brazil Phone (61) 2028-2228 / 2028-2483 / 2028-2199 E-mail: sic@mma.gov.br
CONAMA (Conselho Nacional do Meio Ambiente)	Departamento de Apoio ao Conselho Nacional do Meio Ambiente - DCONAMA Edifício Sede do Ministério do Meio Ambiente, Esplanada dos Ministérios - Bloco B, 9º andar, sala 950 70068-901 - Brasília/DF Phone: (61) 2028-2207 E-mail: conama@mma.gov.br
IBAMA	SCEN Trecho 2 - Ed. Sede - Cx. Postal nº 09566 - CEP 70818-900 - Brasília-DF Phone: (61)3316-1212 Website: http://servicos.ibama.gov.br
FUNAI (Fundação Nacional do Índio)	FUNAI - SBS Quadra 02 Lote 14 Ed. Cleto Meireles 70070-120 - Brasília/DF Phone: (61) 3247-6000 E-mail: sic@funai.gov.br , nesse Website: http://www.funai.gov.br
FCP (Fundação Cultural Palmares)	Quadra 601 Norte – SGAN – Lote L CEP: 70830-010 – Ed. ATP – Brasília/DF Ms Carolina Nascimento Coordenação Geral de Gestão Interna Secretária: Janaína Lima de Oliveira Phone: (61) 3424-0111 E-mail: carolina.nascimento@palmares.gov.br Website: http://www.palmares.gov.br
IPHAN (Instituto do Patrimônio Histórico e Artístico Nacional)	SEPS Quadra 713/913 Sul, Bloco D, Edifício IPHAN – 4º Andar CEP 70390-135 Brasília DF Phone: (61)2024-5440 Website: http://portal.iphan.gov.br
MS (Ministério da Saúde)	Esplanada dos Ministérios Bloco G Brasília-DF / CEP: 70058-900 Phone: (61) 3315-2425 Website: http://portalsaude.saude.gov.br
ICMBio (Instituto Chico Mendes de Conservação da Biodiversidade)	EQSW 103/104, Bloco “C”, Complexo Administrativo - Setor Sudoeste CEP: 70.670-350 - Brasília - DF Phone: (61) 3341-9101 Website: http://www.icmbio.gov.br

Organization	Contact Address
ANA (National Council of Water Resource)	Agência Nacional de Águas - ANA Setor Policial, área 5, Quadra 3, Blocos "B", "L", "M" e "T". Brasília-DF CEP:70610-200 Phone: (61) 2109-5400/(61) 2109-5252 E-mail:asint@ana.gov.br Website:

(2) Environmental Agencies at State Level

In Brazil, each state has its own environmental agency while abiding the federal laws. Table 1.3.2 summarizes the contact list of Brasilia, Amazonas, Para, Sao Paulo, Parana and Santa Catalina States, that are great concerns within this study.

Table 1.3.2 Environmental Agencies at six (6) states (Brasilia, Amazonas, Para, Parana, Sao Paulo and Santa Catarina)

Organization	Contact Address
SDS (Amazonas)	Av. Mario Ypiranga Monteiro, 3280, Parque Dez Manaus Amazonas 69057-002 Phone: (92)3236-5740 Fax: (92) 3659-1821 Website: http://www.sds.am.gov.br
SEMA (former-SECTAM) (Para)	Travessa Lomas Valentinas, 2717, CEP: 66095-770. Belém Phone: (91) 3184-3300 Website: http://www.sema.pa.gov.br
SEMARH/DF (DF)	SEPN 511 - Bloco C - Ed. Bittar - CEP: 70.750-543, Brasília Phone: 3214-5682 E-mail: ascommeioambiente@gmail.com Website: http://www.semarh.df.gov.br
CETESB (Sao Paulo)	Sede: Av. Prof. Frederico Hermann Jr., 345 – CEP 05459-900 – São Paulo Phone: (11)3133-3000 Website: http://www.ctesb.gov.br
SEMA/PR (Parana)	Rua Desembargador Motta, 3384 - 80430-200 – Curitiba Phone: (41) 3304-7700 Website: http://www.meioambiente.pr.gov.br
FATMA (Santa Catalina)	Rua: Felipe Schmidt, 485 - Centro/Florianópolis/SC - CEP: 88010-001 Phone: (48) 3216-1700 Fax: (48) 3216-1753 Website: http://www.fatma.sc.gov.br

1.3.2 Donors

Table 1.3.3 summarizes major international donors, working in Brazil.

Table 1.3.3 Major Donor Agencies in Brazil

Organization	Summary	Contact Address
World Bank	<p>Established in 1944. Headquartered in Washington, D.C. The World Bank is a vital source of financial and technical assistance to developing countries around the world and a unique partnership to reduce poverty and support development. The World Bank Group comprises following five institutions managed by their member countries,</p> <ol style="list-style-type: none"> 1. The International Bank for Reconstruction and Development (IBRD) lends to governments of middle-income and creditworthy low-income countries 2. The International Development Association (IDA) provides interest-free loans—called credits—and grants to governments of the poorest countries. 3. The International Finance Corporation (IFC), a member of the World Bank Group, is the largest global development institution focused exclusively on the private sector. We help developing countries achieve sustainable growth by financing investment, mobilizing capital in international financial markets, and providing advisory services to businesses and governments. 4. The Multilateral Investment Guarantee Agency (MIGA) was created in 1988 as a member of the World Bank Group to promote foreign direct investment into developing countries to support economic growth, reduce poverty, and improve people’s lives. MIGA fulfils this mandate by offering political risk insurance (guarantees) to investors and lenders. 5. The International Centre for Settlement of Investment Disputes (ICSID) provides international facilities for conciliation and arbitration of investment disputes. 	<p>Brazil Office SCN, Qd. 2, Lt. A, Ed. Corporate Financial Center, Cj. 702/703, Brasília, DF 70712-900 Phone: (61) 3329-1000 E-mail: pteklenburg@worldbank.org</p>
IDB	<p>Established in 1959 . One of leading sources of development financing for Latin America and the Caribbean, with a strong commitment to achieve measurable results, increased integrity, transparency and accountability.</p> <p>Besides loans, IDB also provide grants, technical assistance and do research. IDB’s shareholders are 48 member countries, including 26 Latin American and Caribbean borrowing members, who have a majority ownership of the IDB.</p>	<p>Representative :Daniela Carrera Marquis Address: Setor de Embaixadas NorteQuadra 802 Conjunto FLote 39 - Asa Norte Brasília, D.F. 70800-400, Brasil Mailing Address :Setor de Embaixadas NorteQuadra 802 Conjunto FLote 39 - Asa Norte Brasília, D.F. 70800-400, Brasil Phone: (61) 3317-4200 Fax:(61) 3321-3112 E-mail :BIDBrasil@iadb.org</p>
UNDP	<p>Mission is to support countries build and share solutions to achieve Poverty Reduction and the Millennium Development Goals, Democratic Governance, Crisis Prevention and Recovery, Environment and Energy for Sustainable Development. UNDP helps developing countries attract and use aid effectively. In all our activities, we encourage the protection of human rights, capacity development and the empowerment of women.</p>	<p>Casa das Nações Unidas no Brasil Complexo Sergio Vieira de Mello, Módulo I, Prédio Zilda Arns Setor de Embaixadas Norte, Quadra 802, Conjunto C, Lote 17 Brasilia CEP: 70800-400 Phone: (61) 3038-9300</p>
UNEP	<p>Established in 1972. UNEP acts as a catalyst, advocate, educator and facilitator to promote the wise use and sustainable development of the global environment.</p> <p>UNEP work encompasses i) Assessing global, regional and national environmental conditions and trends, ii) Developing international and national environmental instruments, and (iii) Strengthening institutions for the wise management of the environment.</p>	<p>Ms. Denise HamA°, Coordinator, UNEP Brazil Office, EQSW 103/104 Lote 1 Bloco C, 1Â° andar, Setor Sudoeste, Brasília - DF Brazil. Zip Code: 70670-350 Phone:+55 61 3038 9233</p>

Organization	Summary	Contact Address
		Fax: +55 61 3038 9239 E-mail: pnuma.brasil@pnuma.org Website: www.unep.org.br Or www.pnuma.org.br
US-AID	<p>U.S. foreign assistance has always had the twofold purpose of furthering America's interests while improving lives in the developing world. USAID carries out U.S. foreign policy by promoting broad-scale human progress at the same time it expands stable, free societies, creates markets and trade partners for the United States, and fosters good will abroad.</p> <p>Spending less than 1 percent of the total federal budget, USAID works in over 100 countries to:</p> <ul style="list-style-type: none"> · Promote broadly shared economic prosperity; · Strengthen democracy and good governance; · Protect human rights; · Improve global health, · Advance food security and agriculture · Improve environmental sustainability; · Further education; · Help societies prevent and recover from conflicts; and · Provide humanitarian assistance in the wake of natural and man-made disasters. 	<p>Mission Contact American Embassy/Brasilia Unit 3500 USAID APO AA Brazil Postal Code - M 34030 Phone: 55-61-3312-7248. Fax: 55-61-3312-7648 Ms Adriana Hayes Email: pahayes@usaid.gov</p>

1.3.3 NGOs

It is estimated that Brazil has 276,000 NGOs. Of this total, approximately 29,000 receive federal funds. Of the 100,000 that work in the Amazon region, only 320 are registered with the Federal government, a fact which indicates the total lack of control over the actions and management of the private and public funds that finance these organizations. Table 1.3.4 summarizes major environmental and social NGO, registered in Brazil.

Table 1.3.4 Major Environmental and Social NGOs in Brazil

Organization	Mission	Contact Address
1. Fundação SOS Mata Atlântica (SOS Atlantic Forest Foundation)	<p>Established in 1986. Mission is to promote the conservation of biological and cultural diversity of the Atlantic Forest Biome ecosystems and under its influence, encouraging actions for sustainable development as well as promote education and knowledge about Mata Atlantic, mobilizing, empowering and encouraging environmental citizenship. The organization develops environmental conservation projects, production data, mapping and monitoring of forest cover Biome, campaigns, strategies for action in the area of public policies, programs of environmental education and forest restoration, volunteering, sustainable development and protection and ecosystem management.</p>	<p>Avenida Paulista, 2073, Cj. 1318 Cd. Conjunto Nacional, Torre Horsa 1 - 13º andar Bela Vista, São Paulo - SP CEP: 01311-300 Phone: (11) 3262-4088 E-mail: info@sosma.org.br Website: http://www.sosma.org.br</p>
2. Fundação Abrinq (ABRINQ Foundation)	<p>Established in 1990. Mission is to work for the rights of children and adolescents are respected. The stage that the organization has achieved allowed from 2010, firmasse partnership with the largest and oldest NGO defending the rights of children in the world, Save the Children International.</p> <p>Projects that both develop in the area of education, health and protection in Brazil continue to be operated , but the program network was expanded nationwide , which is to give voice to issues involving the scenario of Brazilian</p>	<p>Av Santo Amaro, 1386 - 1º Andar Vila Nova Conceição 04506-001 - São Paulo SP Phone: (11) 3848-8799 or 0300 - 10 - 12345 E-mail: doador@fundabrinq.org.br Website: http://www.fundabrinq.org.br</p>

Organization	Mission	Contact Address
	children to the world and will cause the number of children and adolescents leap from the current 260,000 to about one million per year in the coming years. Also from the partnership based on international methodologies, the organization began operating in the area of Emergency, and implemented activities ranging from immediate relief to action to reduce disaster risk.	
3. Instituto Akatu (Akatu Institute)	<p>Founded on March 15, 2001 (International Consumer Day). Created with a mission to educate and mobilize society for conscious consumption, the Akatu Institute endeavors to make consumers aware of the importance of their consumption choices as an instrument to transform society and the environment.</p> <p>Since its foundation, Akatu has been working with opinion-makers – mass media, advertising campaigns, corporate partners, community leaders, volunteer groups, and educational leaders – so that they can disseminate the concept and practice of conscious consumption among the general public.</p> <p>The word “Akatu” comes from the Tupi language and means both “good seed” and a “better world”. It conveys the idea that the better world is contained in each person’s actions.</p>	<p>Avenida Brigadeiro Faria Lima, 2.601, 9º andar - Jardim Paulistano – São Paulo/SP 01451-001 Website: http://akatu.org.br</p>
4. Instituto Ethos (Ethos Institute)	<p>Founded in 1998, Its mission to mobilize, encourage, and help companies manage their business in a socially responsible way, making them partners in building a sustainable and fair society.</p> <p>Ethos prioritizes the strengthening of democratic institutions with improved regulations, and provides for the creation of social control mechanisms for the government and the market.</p>	<p>Rua Dr. Fernandes Coelho, 85 – 10º andar Pinheiros – São Paulo – SP – Brasil CEP: 05423-040 Phone: (11) 3897-2400 E-mail: atendimento@ethos.org.br Website: http://www3.ethos.org.br</p>
5. Instituto de Pesquisa da Amazônia (IPAM: Amazon Environmental Research Institute)	<p>Founded on May 29, 1995, in Belem (PA). Mission to come up with an innovative proposal at the time: engaging science and environmental activism in the Amazon region, building bases for the action of social movements and the formulation of public policies .</p> <p>Formed by scientists and educators , the Institute has historically mission combat the three evils that threaten the survival of the forest and its population: landscape degraded, unsustainable economies and social injustice. In this sense, another important premise IPAM is the idea that the solutions to the problems Amazonian need, necessarily, include the active participation of people living in the region, particularly forest peoples: indigenous, extractive, riverine and maroons, among others.</p> <p>Throughout the history of IPAM, this style of doing science is cemented in the notion of participatory research. Measure and evaluate both the point of view of scientific research and conservation of the environment and from the point of view of the community. Another feature of community work IPAM is the concern with social organization.</p>	<p>Altamira Office Rua Floriano Peixoto, 3338 Bairro: Esplanada do Xingu Altamira - PA 68.372-862 Phone: (93) 3515-3510</p> <p>Belém Office Trav. Mauriti, 3398 - Altos Bairro: Marco Belém - PA 66093-180 Phone: (91) 3239-6500</p> <p>Brasília Office SHIN CA 5, Bloco J2 – Salas 306,308,309 Bairro: Lago Norte Brasília-DF 71503-505 Phone: (61) 3468-2206 / 2109-4150</p> <p>Website: http://www.ipam.org.br/contato</p>
6. CENPEC (Centre for Studies and Research in Education, Culture and Community Action)	<p>Established in 1987. Aims to develop actions for improvement of the quality of public education and participation in the improvement of social policy. Also, have focused on public school, the educational spaces of public character and the policies and initiatives to solve the inequalities</p>	<p>Rua Minas Gerais, 228 São Paulo - SP CEP: 01244-010 Phone/fax: (11) 2132-9000 Website: http://www.cenpec.org.br</p>
7. Criança Segura (Child	<p>Safe Kids Worldwide is a global organization dedicated to preventing injuries in children, the number one killer</p>	

Organization	Mission	Contact Address
Safe)	of kids in the United States. Around the world, a child dies from an unintentional injury every 30 seconds. And millions of children are injured in ways that can affect them for a lifetime.	Phone: (11)3371-2381 Website: http://criancasegura.org.br
8. Saúde Criança (Child Health)	Founded in 1991 by Dr. Vera Cordeiro. Aim is to work with a pioneering methodology to restructure and promote the self-support of the families of children at social risk from public health units.	New York Office Brazil Child Health 161 West 61st Street, Suite 28B New York, NY 10023 Phone: +1 (212) 399-5689 brazilchildhealth@saudecrianca.org.br São Paulo Office Rua Fortunato, 123. Santa Cecília São Paulo (SP) - Brasil CEP 01224-030 Phone: + 55 11 3459 1885 saopaulo@saudecrianca.org.br Website: http://www.saudecrianca.org.br
9. Viva Rio	Founded in December 1993 by representatives of various sectors of civil society, as a response to the growing violence plaguing Rio de Janeiro. Aim to commit to the research, field work and the formulation of public policies aimed at promoting the culture of peace and social inclusion.	Rio de Janeiro Headquarter Rua do Russel, 76 - Glória Rio de Janeiro - RJ 22210-010 Phone: +55 21 2555-3750 Website: http://vivario.org.br
10. ABEAD (The Brazilian Association of Studies on Alcohol and other Drugs)	Founded in 1989. Headquartered in Porto Alegre. ABEAD (The Brazilian Association of Studies on Alcohol and other Drugs) is an association that brings together professionals working in the field of chemical dependency in Brazil, with affiliates and representations in the country and abroad.	Phone: (21) 7130 3898 (11) 3062.9696 E-mail: secretaria@abead.com.br Website: http://www.abead.com.br
11. Florescer	Founded in 1990 in São Manuel (São Paulo) by Nadia Bacchi and settled in the community Paraisópolis - Morumbi (2nd largest community of São Paulo with 85,000 inhabitants) in 1995. Aims to contribute to the social community Paraisópolis, providing services related to education, sport, leisure, culture and professionalism, restoring dignity, respect and the family and community. Besides collaborating for educational and psychological development of children, support to discover hidden talents and new professions.	Rua Manoel Antônio Pinto, 500 - Paraisópolis - São Paulo - SP Phone: (11) 3746-9846 Email: projflorescer@uol.com.br Website: http://www.ongflorescer.com.br
12. Doe Vida	Founded on August 16, 2003. Aims at the expansion of the work in support of people who need an organ transplant, as well as those who suffer from illness related in order to contribute to improving the quality of life of these people and assist in the painful process of waiting for a transplant. Also, aim to contribute to raising awareness of the population about the importance of organ donation and transplantation, through talks at schools, businesses and other institutions to thereby mitigate the large waiting list for a transplantation, which for many Brazilians is the only way to continue living. In addition, provide continuous care to patients who are waiting for an organ transplant recipients and their families.	E-mail: doevida@doevida.org.br Phone: 3307-5010/3307-5070 (12) Website: http://www.doevida.org.br
13. Doe seu Lixo	Founded in 2003. Aims to reduce environmental impacts, caused by improper waste disposal, encourage civic awareness and provide education to contribute with increasing dignity and quality of life for professional recycling.	Rua Pedro Alves, 240 Galapao 8 Santo Cristo 20220-284 RJ E-mail: atendimento@doeseulixo.org.br Phone: 21-3177-6101 Website:

Organization	Mission	Contact Address
		http://www.doeseulixo.org.br
14. Instituto de Pesquisas Tecnológicas (IPÊ)	Founded in 1992. Currently one of the largest environmental NGOs in Brazil. Headquartered in Nazaré Paulista (São Paulo State) with a staff of over ninety professionals working in more than forty projects throughout Brazil. These include the Pontal do Paranapanema and Nazaré Paulista (São Paulo State), Ariri (São Paulo and Parana states), the Lower Rio Negro (Amazonas State), the Pantanal (Mato Grosso do Sul State), and a private area in Portel (Pará State). IPÊ undertakes an integrated action model, developed through years of experience, that combines research, environmental education, habitat restoration, community involvement with sustainable development, landscape conservation and policy-making.	Nazaré Headquarters Rod. Dom Pedro I, km 47 Nazaré Paulista, SP, Brasil Caixa Postal 47 - 12960-000 Phone: (11) 4597-1327, (11) 4597-7155 / 4597-7161 E-mail: General: ipe@ipe.org.br Courses: cbbc@ipe.org.br Website: http://www.ipe.org.br
15. Repórter Brasil	Founded in 2001 by journalists, social scientists and educators in order to foster reflection and action on the violation of the fundamental rights of people and workers in Brazil. One of the most important sources of information about slave labor in the country.	Phone: (11) 4873-7646. E-mail: contato@reporterbrasil.org.br Website: http://reporterbrasil.org.br
16. ABGLT	The Brazilian Gay, Lesbian, Bisexual, Transvestite and Transexual Association – ABGLT, was founded on January 31st 1995, by 31 founding member groups. A national network of 203 organizations, of which 141 are gay, lesbian, and trans groups, and the remaining 62 are “collaborating” organizations involved with human rights and AIDS. ABGLT is the largest GLBT network in Latin America. Aim to promote the citizenship and defend the rights of gay men, lesbians, bisexuals and trans persons, in order to contribute towards the construction of a democracy free from any forms of discrimination, affirming the freedom of sexual orientation and gender identities. Currently ABGLT’s main work fronts include: - Monitoring the implantation and implementation of the federal government Brazil without Homophobia programme; - Combating AIDS and other sexually transmitted diseases; - Sexual Orientation and Human Rights in the Mercosur; - Advocacy for the approval of legislation and ensuring government budgets for affirmative policies for GLBT; - Capacity-building for lesbians and bisexual women on human rights issues and advocacy; - Capacity-building for legal professionals on issues relating to LGBT citizenship.	ABGLT Presidência Av. Afonso Pena, 867 Sala 2207 Belo Horizonte - MG - CEP: 30130-905 Phone: (31) 8817-1170/ (31)9285-7161 / (61) 8250-1682 1ª Vice-Presidência: Keila Simpson (Bahia) atrasba@yahoo.com.br 2ª Vice-Presidência: Guilhermina Cunha (Santa Catarina) guilherminacunha@gmail.com Secretário-Geral: Victor De Wolf (Rio de Janeiro) vdwrm@hotmail.com ; secretariageral@abgl.org.br Website: http://www.abgl.org.br/port/contatos.php
17. Instituto Ayrton Senna	Founded in 1994, as the dream of Ayrton Senna, a three-time world Formula 1 champion, the Institute works to develop the potential of new generations and benefits students to be successful at school in order to be able to respond to the professional, economic, cultural and political demands of the 21st century. The Institute prepares more than 75,000 teachers and managers every year, and almost 2 million children and young people benefit directly from the work of these teachers, who are trained by the organization, in more than 1300 municipalities in various regions in Brazil.	Rua Dr. Fernandes Coelho, 85 - 15º andar Pinheiros - São Paulo - SP 05423-040 Phone: (11) 2974-3000 Website: http://senna.globo.com/institutoayrtonenna
18. Pense Brasil (Think Brazil)	Aim to promotes various educational, vocational, artistic, cultural and sporting activities for children, adolescents, adults and the community best age, stating their identity and fostering local development.	Rua João Florêncio , 75 - Centro Barra de São Miguel (AL) CEP 57180-000 Phone: (82) 3272-1838 E-mail:

Organization	Mission	Contact Address
		pensebrasil@pensebrasil.org Website: http://www.pensebrasil.org/
19. AACD (Association for Assistance to Deficient Children)	Founded in 1950 through the dream of doctor in Brazil who wanted to create a rehabilitation center with the same quality of centers that knew abroad to treat children and adolescents with disabilities and reintegrate them into society. Dr. Renato da Costa Bomfim assembled a group of idealistic.	Website: http://www.aacd.org.br
20. Turma do Bem	Founded in 2002. Aim to change society's perception on the issue of oral health and the dental profession regarding the social impact of its activity.	Rua Sousa Ramos, 311 CEP 04120-080 – Vila Mariana – São Paulo Phone/Fax: 11 5084-7276 5084-1399 E-mail: PRESIDENTE turmadobem@tdb.org.br COMUNICAÇÃO comunicacao@tdb.org.br DÚVIDAS, CRÍTICAS OU SUGESTÕES faleconosco@tdb.org.br Website: http://turmadobem.com.br
21. Banco de Alimentos	Founded in April 1998. Aim to minimize hunger by combating food waste while promoting community education.	Rua Atibaia, 218 - Pacaembu - CEP: 01235-010 - São Paulo -SP Phone: (11) 3674-0080 Fax: (11) 3674-0081 E-mail: info@bancodealimentos.org.br Website: http://www.bancodealimentos.org.br
22. Pastoral da Criança	Aim at the "full development of children, promoting in their function, also their families and communities, regardless of race, color, profession, nationality, sex, creed, religious or political.	Endereço: Rua Jacarezinho 1691 - Mercês :: CEP: 80810-900 - Curitiba - Paraná - Brasil Phone: (41) 2105-0250 Fax: (41) 2105-0201 e 2105-0299 Website: http://www.pastoralda crianca.org.br

Source: The Brazil Business,
<http://thebrazilbusiness.com/article/forming-a-non-governmental-organization-in-brazil>

Chapter 2 Natural Environment

2.1 Overview

Brazil is classified among one of the world's 17 mega-diverse countries, incorporating 70% of the world's catalogued animal and plant species¹. It is estimated that Brazil hosts between 15-20% of all the world's biological diversity, and the greatest number of endemic species on a global scale. This is an important resource, not only for the environmental services provided, but also for the development and sustainable use opportunities available. The main threats to biodiversity are: fragmentation and loss of habitats, introduction of alien species and exotic illnesses, overexploitation of plants and animals, use of hybrids and monoculture in agro-industry and reforestation programs, pollution and climate change.²

From the geographical point of view, Brazil's huge territory can be divided into rain forests covering much of the Amazon drainage basin, swampland considered to be the world largest fresh water swamp, savannah grasslands (cerrado) covering Brazil's Highlands, and semi-desert (caatinga) in the north. These different ecosystems sustain together the world's highest biodiversity. Many endemic species are living in these different types of land and some of them, animals and plants, can only be found in specific regions of Brazil. Tables 2.1.1 and 2.1.2 summarize conservation status, administered by federal and state level, respectively. As summarized in both tables, about 130 km² in total are protected at the federal and state level. Besides, there are conservation areas, protected at municipality level (note that statistical information of entire protected areas at municipality level is unknown within this study). Figure 2.1.1 shows the distribution of the conservation units in Brazil.

In order to protect these natural environments and its biodiversity, Brazil is not only part of a number of international conventions, but is also enforcing domestic environmental law dealing directly with the preservation of nature and biodiversity. Its participation in international environmental regulation and its National Environmental Policy have made it possible to define several Brazilian areas as protected areas³ and to have rules to protect a great number of species.

¹ Currently around 1.9 million extant species are believed to have been described, but some scientists believe 20% are synonyms, reducing the total valid described species to 1.5 million, http://en.wikipedia.org/wiki/Global_biodiversity.

² <https://www.cbd.int/countries/profile/default.shtml?country=br#status>

³ According to the United Nations Environment Program's Global Biodiversity Outlook 3, nearly 75 % of protected areas created around the world since 2003 (700,000 km²) are located in Brazil.

Table 2.1.1 Federal Conservation Units by group and management categories

Group/Category	Number	Area (km ²)
Strict Protection		
National Park	67	245,756
Biological Reserve	29	38,091
Ecological Station	31	69,019
Natural Monument	3	442
Wildlife Refuge	7	1,840
Subtotal	137	335,147
Sustainable Use		
Environmental Protection Area	16	445
Area of special Ecological Interest	32	90,486
Extractive Reserve	59	117,552
National Forest	65	190,314
Sustainable Development Reserve	1	644
Subtotal	173	399,441
Total	310	754,588

Source: UNEP-WCMC, 2011

Table 2.1.2 State Conservation Units by group and management categories

Group/Category	Number	Area (km ²)
Strict Protection		
State Park	144	67,786
Biological Reserve	14	12,513
Ecological Station	47	44,771
Natural Monument	11	602
Wildlife Refuge	6	1,252
Subtotal	222	126,923
Sustainable Use		
Area of special ecological interest	19	103
Environmental Protection Area	109	186,510
Extractive Reserve	3	6,674
State Forest	17	93,959
Sustainable Development Reserve	18	95,288
Subtotal	166	382,534
Total	388	509,457

Source: UNEP-WCMC, 2011

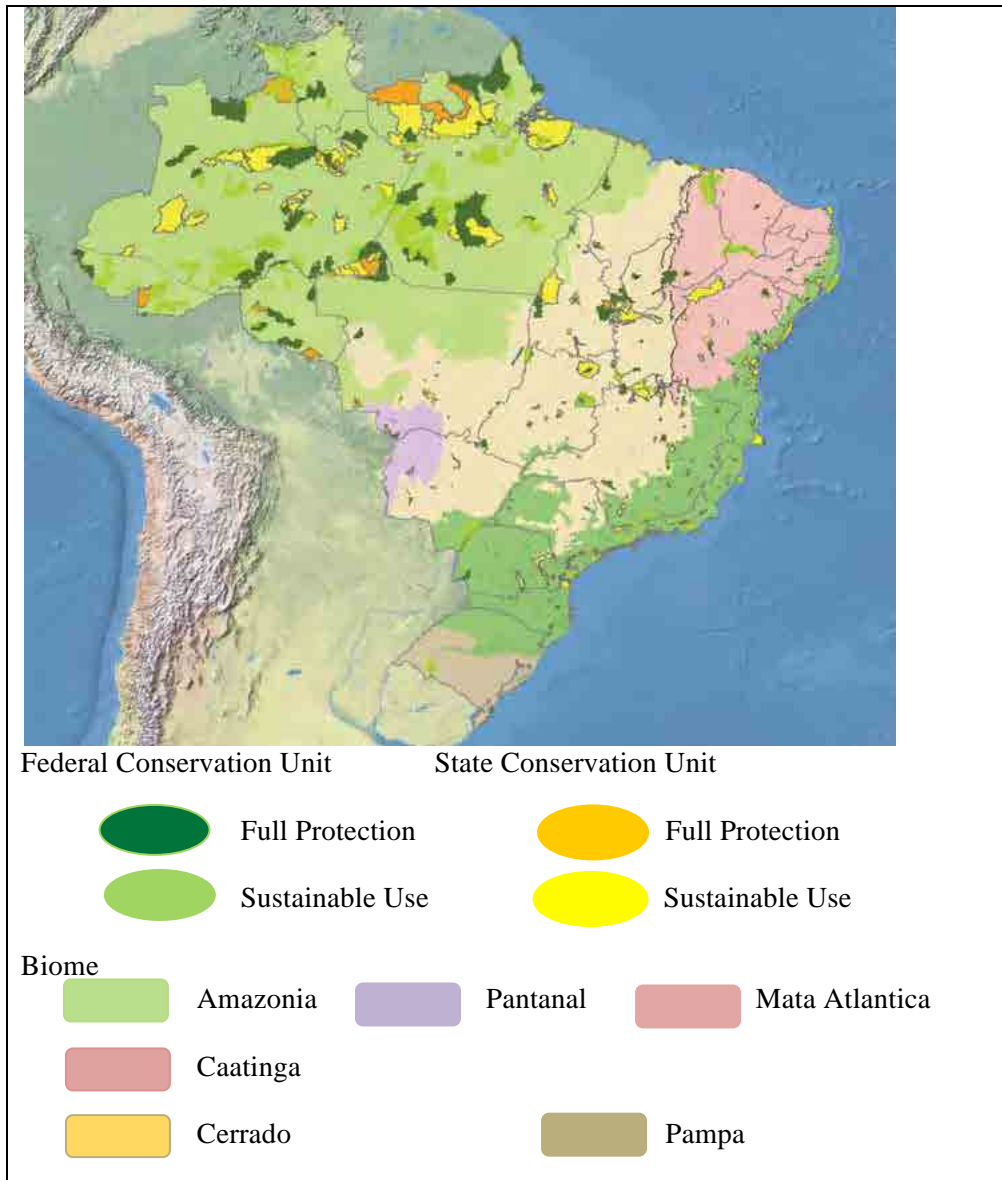


Figure 2.1.1 Distribution of conservation units in the Brazil

Source: UNEP-WCMC, 2011

2.2 Regulation and Policies

2.2.1 International Conventions

Brazil assumes a key and strategic role on the global stage since it is part of several international environmental treaties that has been consecrated through the enactment of Federal Laws. Among the main environmental conventions that Brazil has ratified:

- The Convention on Biological Diversity (ratified in 1994);
- The United Nations Convention Framework Convention on Climate Change (ratified in 1994);

- The United Nations Convention to Combat Desertification in those Countries experiencing serious Drought and/or Desertification (ratified in 1997);
- The Convention on the International Trade in Endangered Species of Wild Flora and Fauna (ratified in 1995);
- Others.

Overall status of the ratification and the application of international environmental agreements is summarized in Appendix 1.

In addition to its participation in those international conventions, Brazil takes part actively in international conferences on the environment. In 1992, it held the Conference on Environment and Development resulting in the draft of Brazilian Agenda 21 redefining the country development's model and introducing the concept of sustainability.

2.2.2 Domestic Law

Following its environmental principles that are linked to sustainable development, social participation and control, strengthening the National Environment System, and transversality, Brazil's government has passed several environmental laws, summarized in Table 2.2.1.

Table 2.2.1 Key Environmental Legislation of Brazil

Legislation	Short definition
Federal Constitution in 1988	Providing the main framework and provisions for environmental protection.
Federal Law 6,938 in 1981	Establishing the National Environmental Policy.
Federal Law 7,735 in 1989	Creating the federal environmental protection agency IBAMA (Brazilian Institute for Environment and Renewable Resources).
Federal Law 9,433 in 1997	Stating the National Policy on Water Resources and regulating the regime of water use.
Federal Law 9,605 in 1998 (Environmental Crime Law)	Establishing sanctions applicable to different crimes against environment.
Federal Law 9,966 in 2000	Governing the prevention, control, oversight of oil pollution and others hazardous substances in Brazilian waters.
Federal Law 9,985 in 2000	Establishing the Protected Areas National System for the protection of biodiversity.
Provisional Measure 2, 186-16 in 2001	Regulating the access of genetic heritage and its protection for associated traditional knowledge.
Federal Law 11,105 in 2005	Regulating bio-safety and genetically modified organisms.
Federal Law 11,516 in 2007	Creating the federal agency responsible for the management of federal conservation units ICMBio (Chico Mendes Institute for Preservation of the Environment and Biodiversity).
Federal Law 12,187 in 2009	To represent Brazil's commitment to addressing greenhouse gas emission and to state the National Program of Climate Change.
Federal Law 12,305 in 2010	Establishing the National Policy for Solid Waste.
Complementary Federal Law 140 in 2011	Coordinating the constitutional jurisdiction for protecting the environment and natural resources.
Federal Law 12,651 in 2012	Establishing the new Brazilian Forest Code to regulate the protection of Legal Forestry Reserves and the Permanent Protected Areas.

Source latinlawyer.com, us.practicallaw.com

2.2.3 National Environmental Policy (1981)

In August 31 1981, the National Environmental Policy (NEP) through the Federal Law 6.938 was put into force by the Brazilian government. Its main objective is to ensure a greater protection of the environment by establishing standards that make sustainable development possible. Its objectives, described in Article 4, are as follows:

- To ensure that the socio-economic development takes place in harmony with the preservation of environmental quality and ecological equilibrium;
- To define priority areas for governmental action concerning ecological quality and equilibrium, in agreement with the interests of the Federal Government, the states, the federal district, the territories and the municipal districts;
- To establish criteria and standards for the quality of the environment and norms related to the use and management of environmental resources;
- To develop national research and technologies aimed at rationalizing the use of environmental resources;
- To divulge environmental management technologies and environmental data and information, and to develop a public conscience regarding the importance of protecting the environmental quality and the ecological equilibrium;
- To preserve and restore the environmental resources with a view to their rational use and permanent availability, ensuring the maintenance of the ecological equilibrium;
- To obligate the polluter or any other harmful agent to recover or pay an indemnity for the damage caused, and the usually to financially contribute in view of the commercial utilization of environmental resources;

To promote environment protection, the Article 9 presents 12 instruments:

- The establishment of environmental quality standards;
- The environmental zoning;
- The assessment of environmental impacts;
- The licensing and revision of polluting activities;
- The incentives to the production and installation of equipment and the development or incorporation of technologies for the improvement of the environment;
- The establishment of ecological reserves and stations, animal and ecological protection areas, by the federal, states and municipal public authorities;
- The national environmental information system;
- The Federal Technical Register of the Activities and Instruments of Environmental Protection;
- The disciplinary and compensatory penalties resulting from the non- compliance with the measures required for the prevention and correction of environmental degradation.

- The establishment of the Report of Environmental Quality, to be published annually by the Brazilian Institute of Environment and Natural Resources - IBAMA (Item added by Federal Law 7.804);
- To ensure the provision of information relating to the environment, and ensuring the Government produces them when they are absent (Item added by Federal Law 7.804);
- The Federal Technical Registry of potentially polluting activities and/or ones that use environmental resources (Item added by Federal Law 7.804).

2.2.4 Environmental Governance and Regulation Enforcement

To protect and improve the Brazilian environmental quality, the National Environmental System (SISNAMA), that will bring together various environmental institutions and agencies of different levels (federal, state, municipal), was implemented. Figure 2.2.1 shows the framework of SISNAMA.

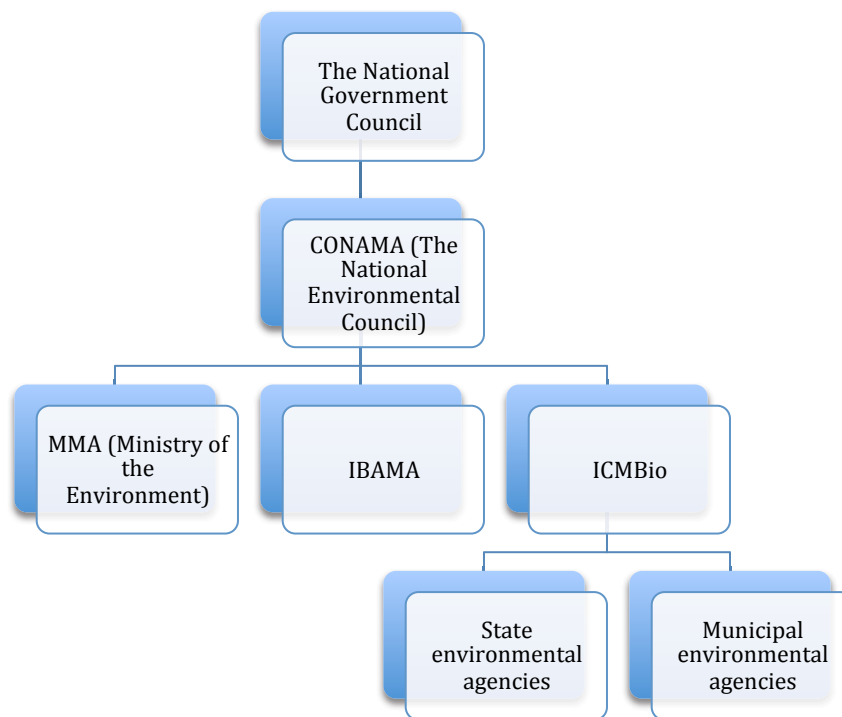


Figure 2.2.1 The National Environmental System's (SISNAMA)

At the top of the system's structure can be found the National Government Council, which advises the Brazilian President to formulate the guidelines and national environmental policies. Below there will be the main environmental regulatory agencies that will enforce the environmental laws.

First at the nation and federal level, comes the CONAMA, this system's core agency that has

the power to pass important environmental regulation nationwide. It deliberates over rules and standards suitable for protecting the environment, which must be followed by states and municipalities.

It is followed by the MMA, the central body, which plans, coordinates, supervises and controls the National Environmental Policy and guidelines established for the environment, performing the task of holding together the SISNAMA's various agencies and entities. The MMA is linked with federal regulatory agencies such as the IBAMA, which is responsible for applying environmental statutes and regulations, executing the environmental permitting of activities located in strategic areas for the country and those with regional impacts. There is also the ICMBio, with the role to manage and enforce environmental policies in federal protected areas.

Finally, at the bottom of the structure can be found the state environmental agencies such as FEEMA (State Environmental Engineering Foundation) in Rio de Janeiro, which are enforcing tightly environmental laws. Those agencies are also in charge of enforcing pollutant activities when the environmental impact does not reach federal and local interests. As for the municipal bodies, they are responsible for the control and inspection of activities potentially harmful to the environment.

There are also other executing agencies, which are also enforcing the National Environmental Policy and are therefore associated with the protection of the environmental quality such as:

- CGEN (Genetic Heritage Management National Council), which will regulate, monitor and run policies for genetic heritage management;
- CNBS (Biosafety National Commission), in charge of approving GMOs' market-use.

2.2.5 The National System of Conservation Units (SNUC)⁴

Brazil's system of conservation units has evolved rapidly over the past few years, as has the force of destructive processes such as deforestation, logging and forest fires. A new law creating a National System of Conservation Units (SNUC) was approved by the National Congress in July 2000 (law no. 9985/2000). The law was approved after eight years of deliberation in the face of intractable differences among the various interested parties.

Brazil has a wide array of different types of conservation units. In many cases these serve different purposes, while in others they have similar purposes but owe their origin to the different government agencies that have promoted them. Areas that are primarily for maintaining natural ecosystems without human presence (except for small areas designated for

⁴ FEARNside, P.M., Conservation Policy in Brazilian Amazonia: Understanding the Dilemmas, World Development, Vol. 31, 2003.

research) were formerly classed as “indirect-use areas” in Brazilian legislation, a terminology now changed to “integral-protection areas” under the National System of Conservation Units (SNUC). Federal conservation units in this category include National Parks, Ecological Reserves (formerly Ecological Stations) and Biological Reserves.

There are following several conservation programs, conducted under this SNUC.

(1) Pilot Program (PP-G7)

The Pilot Program to Conserve the Brazilian Rain Forest (PP-G7) was announced by the G-7 countries at their meeting in Houston in 1990, when global concern over Amazonian deforestation was at a high point and coverage appeared almost daily in the international press. Under pressure from their constituents, the G-7 leaders (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States) noticed that they would commit US\$1.5 billion to the program.

PP-G7 was originally expected to last for only three years, but delays in initiating several components, combined with the desire on all sides to continue the most successful activities, resulted in repeated extension of the program. Some components are expected to last to 2010.

PP-G7 is financed by the G-7 countries and administered by the World Bank and the Brazilian government. Components include the PD/A (“Type A” demonstration projects) for small-scale sustainable development projects carried out by NGOs, extractive reserves and indigenous lands. A Sub-Program for Natural Resources (SPRN), described later, includes environmental, economic zoning (ZEE) and strengthening of the state environmental agency (OEMA) in each of the nine states in the Brazilian Legal Amazon region. The Pro-Management Project (PROMANEJO) promotes sustainable forestry initiatives, including those in National Forests (FLONAs). Other components address management of floodplains, science and technology, and a special program to combat burning.

✓ **Sub-Program for Natural Resources (SPRN)**

The Sub-Program for Natural Resources (SPRN) fortifies the state environmental agencies (OEMAs), including special activities within Integrated Environmental Management Project (PGAI) areas and an Ecological-Economic Zoning (ZEE) of each state. Zoning has been a particularly controversial issue, with extended negotiations between federal authorities and each state government having delayed implementation in some states.

While planning can be greatly improved by efforts using zoning to think ahead about the consequences of different development decisions, the reality observed today is quite different.

The real zoning is taking place today (without discussions of impacts) through major decisions such as implantation of the development axes that are part of the PAC, mentioned in Section 1.2 of Chapter 1. Billions of dollars are being sought in investments before the environmental studies, zoning studies, and other information has been produced and debated. Zoning is therefore being done in practice on a massive scale without following any of the principles that guide the zoning programs now underway.

✓ **Ecological Corridors**

The ecological corridors project is designed to promote a coordinated management of the different types of conservation units and indigenous lands in a contiguous area, including the interstitial area that completes the landscape within the corridor. So far, only one corridor in Amazonia is actively being pursued, although an additional four corridors outlined in early plans for the project may eventually be added. Contrary to the fears of some politicians, the corridors do not freeze development within their boundaries; rather, they can serve as an aide in obtaining assistance for sustainable development projects appropriate to these areas.

✓ **Extractive Reserves (RESEX)**

Extractive reserves (RESEX), originated from a 1985 proposal by the National Council of Rubber-tappers under the leadership of Chico Mendes, and have been created by the federal government as a form of conservation unit since February 1988. The area under this form of land use now totals over 3 million ha, and additional units are proposed. Extractive reserves have been criticized as condemning their residents to poverty and as financially unviable due to the low price of extractive products such as rubber and Brazil nuts. It is important to realize, however, that the rationale for creating extractive reserves is environmental, rather than a means of supplying cheap rubber or of supporting a large human population.

This is why extractive reserves are created as conservation units by the MMA, rather than as settlements by the National Institute for Colonization and Agrarian Reform (INCRA) in the Ministry of Agrarian Development. It is also significant that proposals for extractive reserves originate from the extractivists themselves, rather than from government authorities. Instead of condemning the residents to poverty, the reserves offer them a better and more stable income than they could realistically expect in the absence of the reserves. The idea that the residents have been tricked by environmentalists into forgoing a life as prosperous farmers is entirely fictitious; rather, they would more likely be forced to move to urban favelas (shantytowns) or would join the ranks of landless poor in rural areas of the region. Under the PP-G7, the RESEX project has strengthened extractive communities in the reserves, helping them with marketing and facilitating access to health, education and other services.

✓ **Indigenous Lands (PPTAL)**

The Integrated Project for Protection of Indigenous Populations and Lands in the Legal Amazon (PPTAL) has produced concrete achievements that affect large areas of the region. The participative demarcation methodology, developed under the PPTAL, with the indigenous peoples themselves doing the demarcation rather than having the work done by a corporate contractor, has been successful both in rapid and cost-effective execution of the task and in generating organizational experience and attitudes among the members of the indigenous groups that will serve them well in defending their territories and in implementing sustainable activities within them. Problems with contracted firms resisting and undermining the indigenous supervision of the demarcation have led to a learning process to strengthen application of the methodology over the course of the PPTAL.

(2) **PROAPAM: The “10% Project”**

On April 29, 1998, Brazilian president Fernando Henrique Cardoso announced a commitment to create totally protected areas to increase the percentage of Amazonian forest ecosystems with this level of protection to 10% by 2004. This effort was promoted by the Worldwide Fund for Nature (WWF) and the World Bank as part of the WWF “forests for life” campaign.

The Program to Expand Areas of Environmental Protection (PROAPAM, also called ARPA), better known as the “10% Project,” was created within the MMA to achieve this goal.

2.3 Wildlife Species

2.3.1 Endemic Species

Brazil has more unique species of amphibians and freshwater fish than any other country in the world and is one of the main contenders for most species of endemic life. Brazil has several distinctive regions rich in animals and plants found nowhere else including the Caatinga eco-region, the Atlantic Forest and Cerrado biodiversity hotspots, the Abrolhos Coral Reefs, and, most famously, the Amazon. Freshwater eco-regions especially rich in endemic species include the Tocantins- Araguaia and the Northeastern Mata Atlantica.

Primates found exclusively in Brazil include the Golden Lion Tamarin, the Northern Muriqui, the White-whiskered Spider Monkey, the Red-handed Howler, Coimbra Filho's Titi, the Pied Tamarin, Ayres Black Uakari, the Black-bearded Saki, and the Blonde Capuchin. Other mammals unique to Brazil include the Maned Sloth, the Brazilian Three-banded Armadillo, the Hoary Fox, the Atlantic Forest Long-nosed Bat, the Thin-spined Porcupine, the Rock Cavy, the

Painted Tree Rat, Karimi's Fat-tailed Mouse Opossum, the White-spotted Mountain Rat, and Santa Catarina's Guinea Pig.

Brazil's endemic parrots include the critically endangered Spix's Macaw, the Golden Conure, Lear's Macaw, and the Blue-bellied Parrot. Other birds found only in Brazil include Kaempfer's Woodpecker, the Hooded Visorbearer, the Frilled Coquette, the Alagoas Curassow, the White-necked Hawk, the Crescent-chested Puffbird, the Banded Cotinga, the Pin-tailed Manakin, the White-browed Antpitta, the Ferruginous Antbird, the White-naped Jay, the Black-legged Dacnis, and the Gray-hooded Attila.

Among endemic reptile genera are a worm lizard *Bronia*, a gymnophthalmid lizard *Psilophthalmus*, a gecko *Gymnodactylus*, and several colubrid snakes: *Tropidodryas*, *Gomesophis* and *Sordellina*. Other reptiles unique to Brazil include the Golden Lancehead Bothrops *insularis*, and the Brazilian Coral Snake *Micrurus decoratus*.

Brazil's exceptional amphibian fauna includes the Pumpkin Toadlet, the Caatinga Horned Frog, the Fruit-eating Frog, the Splash-backed Poison Frog, the Itatiaia Highland Frog, *Frostius erythrophthalmus*, *Phyllomedusa oreades*, *Paratelmatobius poecilogaster*, *Scythrophrys sawayae*, a salamander *Bolitoglossa paraensis*, a caecilian *Atretochoana eiselti*, and a number of recently described species. Some classifications include only *Cycloramphus* and *Thoropa* in *Cycloramphidae*, resulting in an endemic family.

Brazil's unrivaled richness in endemic freshwater fish species includes the Brazilian Blind Characid *Stygichthys typhlops*, the Green Piranha, the Santa Catarina Sabrefin, the Lyrefin Pearlfish *Simpsonichthys boitonei*, the Royal Tetra, the Gold Tetra *Rachoviscus crassiceps*, the Slender Pike Cichlid, *Arapaima leptosoma*, the Blue-bellied Night Wanderer, *Isbrueckerichthys duseni*, the Long-finned *Cambeva Trichogenes longipinnis*, an eyeless banjo catfish *Micromyzon akamai*, *Maratecoara lacortei*, and the White-blotched River Stingray. Among marine fish found only off Brazil are the Oblique Butterflyfish, the Striped Parrotfish *Scarus zelindae*, the Brazilian Basslet, a wrasse *Halichoeres penrosei*, the Saint Pul Gregory, the Brazilian Large-eyed Stingray.

Invertebrates found solely in Brazil include the Fluminense Swallowtail *Parides ascanius*, *Morpho anaxibia*, *Morpho athena*, *Charonias theano*, *Heliconius nattereri*, an endemic genus of bee *Protomeliturga*, the primitive ant *Martialis heureka*, the strepsipteran family *Bahiaxenidae*, the mayfly family *Melanemerellidae*, the moth family *Neoteoridae*, the isopod family *Brasileirinidae*, a land snail *Megalobulimus parafragilior*, and one of the world's largest spiders, the Brazilian Salmon Pink Tarantula. Endemic marine invertebrates include the corals *Mussismilia hispida* and *Favia leptophylla*, a sea slug *Tambja stegosauriformis*, and the molluscs *Conus abrolhosensis* and *Voluta ebraea*

According to the Lista de Espécies da Flora do Brasil over 18,000 species of vascular plants are endemic to Brazil. Plants exclusive to Brazil include the national tree Pau Brasil, the Brazilian Rosewood, the roundworm digesting *Philcoxia minensis*, and the Empress of Brazil *Worsleya procera*. *Duckeodendron cestroides* is sometimes considered the sole species in an endemic family, *Duckeodendraceae*. Among over 1,600 orchid species unique to Brazil are *Chytroglossa marileoniae*, *Grobya amherstiae*, and *Pseudolaelia vellozicola*. A spectacular endemic bromeliad flora includes *Quesnelia arvensis*, *Orthophytum eddie-estevesii*, and *Nidularium rutilans*, Cacti genera found only in Brazil include *Hatiora*, *Cipocereus*, *Stephanocereus*, and *Espositoopsis*.

Table 2.3.1 summarizes brief summary of biodiversity in Brazil.

Classification	Number of recorded species
Mammal	658 ^{*1}
Reptile	732 ^{*2}
Amphibian	946 ^{*3}
Birds	1,901 ^{*4}
Freshwater Fish	3,000
Butterfly	3,150
Plant	55,000

Source:

*1 http://en.wikipedia.org/wiki/List_of_mammals_in_Brazil

*2 http://en.wikipedia.org/wiki/List_of_reptiles_in_Brazil

*3 http://en.wikipedia.org/wiki/List_of_amphibians_in_Brazil

*4 http://en.wikipedia.org/wiki/List_of_birds_of_Brazil

Remaining are after http://en.wikipedia.org/wiki/Wildlife_of_Brazil

2.3.2 Endangered Species

The International Union for Conservation of Nature publishes every year an inventory of the global conservation status of biological species (see Tables 2.3.2 and 2.3.3). Based on the IUCN's database updated in 2013, in Brazil 436 animal species and 505 plant species are critically endangered (CR), endangered (EN) or vulnerable (VU). Details list of each species are summarized in Appendix 2.

Table 2.3.2 Conservation Status of Biological Species in Brazil

	EX	EW	CR	EN	VU	Total
Animal	9	1	71	114	245	440
Plant	5	1	76	175	253	510

Notes: EX: Extinct; EW: Extinct in the wild; CR: Critically endangered; VU: Vulnerable

Source IUCN (2013)

Table 2.3.3 Threatened species in Brazil (total by taxonomic group)

Mammals	Birds	Reptiles	Amphibians	Fish	Insect	Plants	Other	Total
85	152	29	34	84	27	510	29	950

Source IUCN (2013)

2.3.3 Internationally Protected Species

Brazil ratifies two international conventions for the protection of species:

- Convention on the International Trade in Endangered Species of Wild Flora and Fauna (CITES);
- Convention on Migratory Species of Wild Animals (CMS).

The CITES is an international agreement between governments to ensure that international trade in specimens of wild animals and plants does not threaten their survival (see Table 2.3.4).

Table 2.3.4 Total of Brazilian species in CITES Appendices

Appendix	Mammal	Bird	Reptile	Amphibian	Fish	Plant
I	42	26	5	0	2	22
II	131	254	39	16	8	827
I/II	2	2	2	0	0	0
III	10	11	1	0	0	3
Total	185	293	47	16	10	852

Source CITES-listed species database

As for the CMS, it is an intergovernmental treaty, concluded under the aegis of the United Nations Environment Programme, concerned with the conservation of wildlife and habitats on a global scale. It aims to conserve terrestrial, aquatic and avian migratory species throughout their range (see Table 2.3.5).

Table 2.3.5 Total of Brazilian species in CMS Appendices

Appendix	Mammal	Bird
I		2
II		15
Total		17

Source CMS-listed species database

A complete listing of species in Brazil protected by the CITES and the CMS are summarized in Appendices 3 and 4.

2.4 Important Ecosystems and Habitats

2.4.1 Protected Areas

To protect the rich diversity offered by Brazil's nature, there are a number of reserves, parks and protected areas throughout the country (in total, 380 protected areas exist; see Tables 2.4.1 and 2.4.2). Those areas are divided into 7 main categories:

- ✓ Area of Environmental Protection;
- ✓ Wildlife Sanctuary;
- ✓ Biological Reserve;
- ✓ Ecological station;

- ✓ National Park;
- ✓ Area of Considerable Ecological Interest;
- ✓ Sustainable Development Reserve.

Table 2.4.1 Type of Protected Areas defined by the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA)

Type of Protected Areas	Description
1. Area of Environmental Protection	Large area characterized by a considerable population density and with abiotic, biotic, aesthetic, or cultural features of great importance, above all for the quality of life and wellness of man. Protecting biological diversity, regulating the settlement processes, and ensuring the sustainable use of natural resources are among its main aims.
2. Wildlife Sanctuary	It aims at protecting the natural environments ensuring the conditions for the survival and reproduction of species or communities belonging to the local flora and to resident or migratory fauna.
3. Biological Reserve	It aims at strictly safeguarding the natural aspects within its borders, avoiding direct human interference or environmental changes, through measures to recover altered ecosystems and management actions necessary to recover or maintain the natural balance, biological diversity, and natural ecological processes.
4. Ecological station	It aims at safeguarding nature and carrying out scientific research activities.
5. National Park	It aims at preserving natural ecosystems of great beauty and ecological importance, giving the opportunity to carry out scientific research activities or developing environmental education and interpretation activities, as well as promoting recreational activities at direct contact with nature and ecological tourism.
6. Area of Considerable Ecological Interest	Not very large area, with a scarce population density and extraordinary natural features of great importance at a regional and local level.
7. Sustainable Development Reserve	Natural area including traditional populations whose existence is based on sustainable systems of exploitation of the natural resources which have been developed generation after generation and adapted to local ecological conditions. They play an essential role in the protection of nature and maintenance of biological diversity.

Table 2.4.2 Total number of Protected Areas in Brazil by Type

Type of protected areas	Number
Area of Environmental Protection	170
Wildlife Sanctuary	5
Biological Reserve	5
Ecological station	81
National Park	61
Area of Considerable Ecological Interest	43
Sustainable Development Reserve	15

A complete list of Protected Areas in Brazil is summarized in Appendix 5. Location of all protected areas in Brazil is shown in Figure 2.1.1.

In Brazil, Protected Areas are regulated by the National System of Conservation Units (NSCU), a unified system encompassing all federal, state and municipal protected areas. Primarily destined for conservation, Conservation Units are another type of land in Brazil, which can include both public and private land, and serve as another tool to combat deforestation. The

system includes 12 management categories divided into two groups of Protected Areas: those under full protection and those allowing sustainable use of the land's resources. Protected areas under full protection are areas in which only indirect use of natural resources is allowed. These include: ecological stations; biological reserves; national, state or municipal parks; natural monuments; and wildlife refuges.

2.4.2 Ramsar Sites

The Ramsar Convention, established in 1971 in the Iranian city of Ramsar, is the only environmental intergovernmental treaty dealing with a particular ecosystem that is to say wetlands. All over the planet, the convention allows for national and international cooperation for the conservation and wise use of wetlands and their resources. As of today, 168 countries are part of the Convention, allowing 2,168 sites to be worldly recognized and protecting a total area of 206, 632,105 ha.

In response to the Article 2.1 of the Convention, Brazil has designated suitable wetlands within its territory. The international community has recognized these wetlands to be of significant value not only for the country in which they are located, but also for the humanity.

In Brazil, there are 12 wetlands recognized as important under the Ramsar Convention, amounting for a total of 7,225,687 ha of protected sites (see Table 2.4.3).

Table 2.4.3 Wetlands of International importance in Brazil

Site Name	Date of Designation	Region	Area (ha)	Coordinates
Pantanal Matogrossense	24/5/93	Mato Grosso	135,000	17°39'S 057°25'W
Lagoa do Peixe	24/5/93	Rio Grande do Sul	34,400	31°14'S 050°57'W
Mamirauá	4/10/93	Amazonas	1,124,000	02°18'S 066°02'W
Ilha do Bananal	4/10/93	Tocantins	562,312	10°31'S 050°12'W
Reentrancias Maranhenses	30/11/93	Maranhão	1,124,000	02°18'S 066°02'W
Reserva Particular del Patrimonio Natural (RPPN) "Fazenda Rio Negro"	22/05/09	Mato Grosso del Sur	7,000	19°33'S 056°13'W
Baixada Maranhense Environmental Protection Area	29/02/00	Maranhão	1,775,036	03°00'S 044°57'W
Parque Estadual Marinho do Parcel Manoel Luís including the Baixios do Mestre Álvaro & Tarol	29/02/00	Maranhão	34,556	c.00°30'S 044°45'W
Reserva Particular do Patrimonio Natural SESC Pantanal	6/12/02	Mato Grosso	87,871	16°39'S 056°15'W
Abrolhos Marine National Park	02/02/10	Bahía	91,300	17°49'S 038°49'W
Rio Doce State Park (Parque Estadual do Rio Doce)	15/03/10	Minas Gerais	35,973	19°38'S 042°32'W
Cabo Orange National Park (Parque Nacional do Cabo Orange)	02/02/13	Amapá	657,328	03°38'59"N 051°11'24"W

Source: Ramsar Convention (2013)

2.4.3 Biodiversity Hotspots

According to Conservation International (CI)⁵, to qualify a region as a hotspot, two strict criteria must be met: 0.5% of the world's total vascular plant (about 1,500 species) must be there as endemics, and this region must have lost at least 70 % of its original habitat. Following these criteria, Brazil hosts 2 biodiversity hotspots:

- Atlantic Forest, which was heavily deforested (only 8 % of this forest remains today);
- Cerrado, an important woodland/savannah ecosystem, where maned wolves and other large mammals are struggling due to the fast-changing habitat (soybean processing area, portion of land converted to cattle pasture and others)

2.4.4 Important Bird Areas (IBA)

Bird Life International uses the global IBA criteria to classify the different bird sites (see Tables 2.4.4 and 2.4.5 and Figure 2.4.2).

Table 2.4.4 Global IBA Criteria

Criteria	Description
A1. Globally threatened species	The site is known or thought regularly to hold significant numbers of a globally threatened species, or other species of global conservation concern.
A2. Restricted-range species	The site is known or thought to hold a significant component of a group of species whose breeding distributions define an Endemic Bird Area (EBA) or Secondary Area (SA).
A3. Biome-restricted species	The site is known or thought to hold a significant component of the group of species whose distributions are largely or wholly confined to one biome.
A4. Congregations	A site may qualify on any one or more of the four criteria listed below: i) Site known or thought to hold, on a regular basis, $\geq 1\%$ of a bio-geographic population of a congregatory water bird species. ii) Site known or thought to hold, on a regular basis, $\geq 1\%$ of the global population of a congregatory seabird or terrestrial species. iii) Site known or thought to hold, on a regular basis, $\geq 20,000$ water birds or $\geq 10,000$ pairs of seabirds of one or more species. iv) Site known or thought to exceed thresholds set for migratory species at bottleneck sites.

Source Birdlife International (2013)

⁵ Conservation International is a non-profit environmental organization founded in 1987 aiming to empower societies to responsibly and sustainably care for nature, the global diversity, and the well-being of humanity.

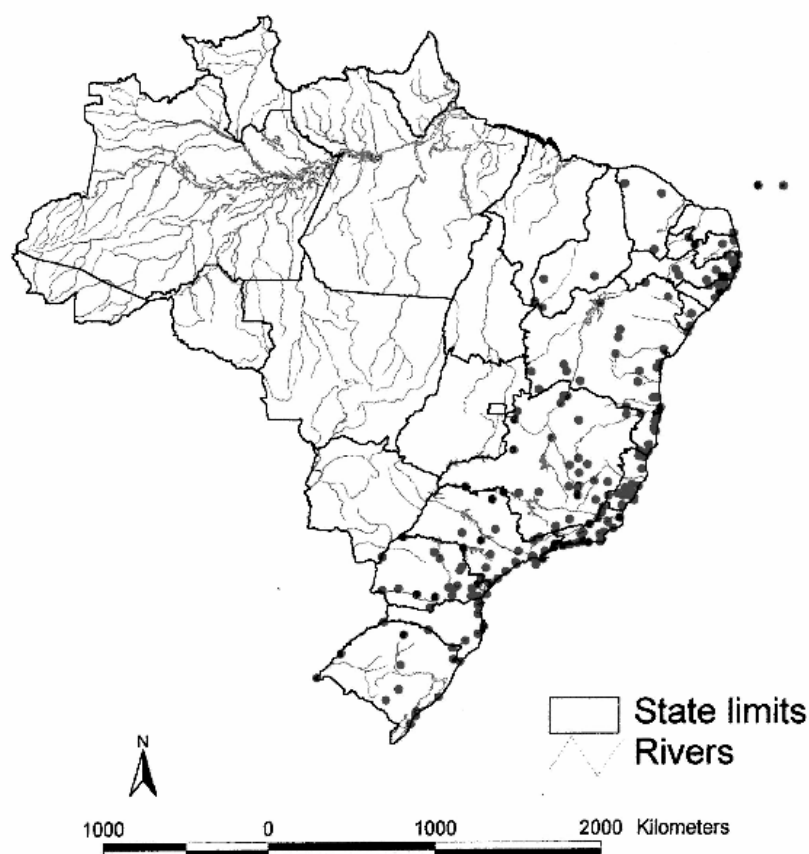


Figure 2.4.1 Example Location of potential IBAs in Brazil

Source Goerck and Wege (2005)

Table 2.4.5 Summary of Important Bird Area in Brazil

Total number of IBA = 234			
Entire IBA Area = 90,994,690			
Number triggered by individual criteria			
Globally Threatened Species (A1)	219	Biome-restricted species (A3)	78
Restricted Range Species (A2)	124	Congregatory species (A4)	17
Number of AZE6 sites identified for birds	13		

Source Birdlife International (2013)

A complete list of important bird areas in Brazil is summarized in Appendix 6.

2.5 Forests

Brazil is a country, which has about 62% of its area covered by forests. It has also the largest areas of primary forest according to the Global Forest Resources Assessment. Table 2.5.1 summarizes recent forest area statistics of Brazil. Figure 2.5.1 shows the nationwide forest

⁶ Alliance for Zero Extinction

distribution in Brazil.

Table 2.5.1 Extent of forest and other wooded land in Brazil

FRA 205 categories	Area (1,000 ha)				
	1990	2000	2005	2010	2011
Forest	574,839	545,943	530,494	519,522	517,327
Forest Area/Entire country (%)	67.5	64.1	62.3	61.0	60.8

Note: Total area of Brazil is of 851,488,000 ha.
 Source FAOSTAT, FAO Statistics Division 2013

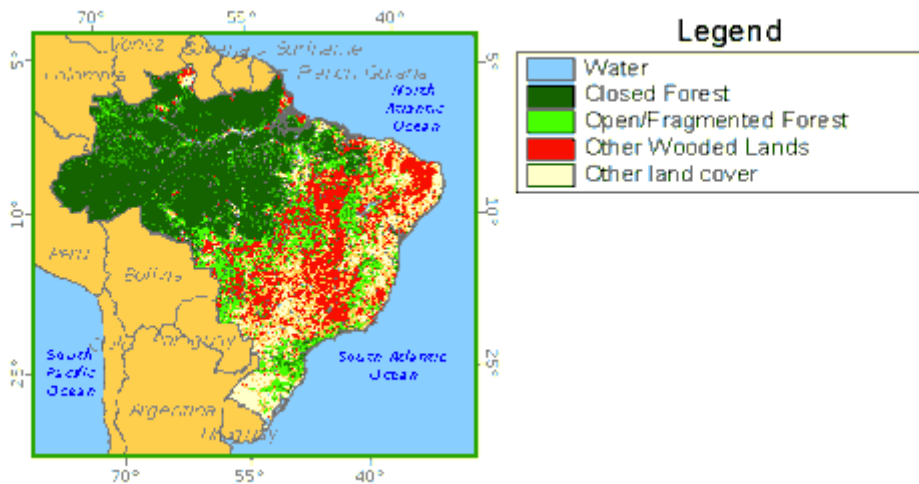


Figure 2.5.1 Nationwide Forest Distribution in Brazil

Source FAO, Global Forest Resources Assessment 2000

Figure 2.5.2 shows the pace of deforestation area (ha/year), calculated since 1977 in Brazil. Comparing the forest depletion of 1977-1999, which was 16,854 km² on average, and the forest depletion of 2012 of about 4,656 km², a decrease of 12,198 km² has been realized.

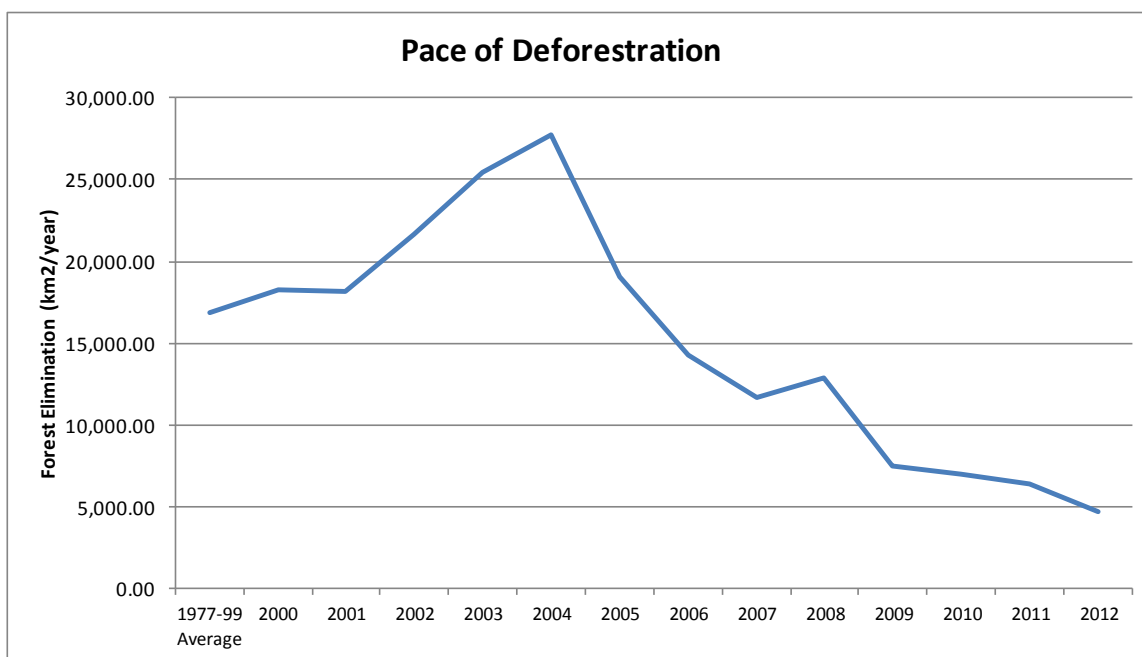


Figure 2.5.2 Pace of Deforestation in Brazil

Source: MMA

Even though the deforestation continues, a pace slow down of deforestation has occurred in forest depletion since 2005. Indeed, between 1990 and 2000, the annual deforestation rate was about 0.51 % and increased to 0.57 % between 2000 and 2005. However, between 2005 and 2010, this rate decreased to 0.42 %.

According to FAO (2010), forest estates within protected areas account for 17 % of the total forest areas, and only 6 % of the forests with management plans (see Table 2.5.2).

Table 2.5.2 Forest management and legal status 2010

	Area (1,000 ha)	% of forest area
Forest within protected areas	89,541	17
Forests with management plan	30,543	6

Source FAO, Global Forest Resources Assessment 2010

Primary forest amounts for approximately 92 % of the entire forest areas, which let for other naturally regenerated forests and planted forests a low percentage of respectively 7 % and 1 %, respectively (see Table 2.5.3).

Table 2.5.3 Status of Forests in Brazil (by type)

	Area (1,000 ha)	% of forest areas
Primary forests	476,573	92
Other naturally regenerated forests	35,532	7
Planted forests	35,532	7

Source FAO, Global Forest Resources Assessment 2010

Table 2.5.4 summarizes the forest ownership and management rights of 2005. Most of the forest areas are publicly owned (81 %), and managed by public administration (63 %) and by communities (37 %).

Table 2.5.4 Forest Ownership and Management Rights 2005 (%)

Ownership pattern	Public	81
	Private	19
	Other	0
Holders of management rights of public forests	Public administration	63
	Individuals	0
	Business entities and institutions	0
	Communities	37
	Other	0

Source FAO, Global Forest Resources Assessment 2010

Chapter 3 Pollution and Environmental Issues

3.1 Overview

Brazil's environmental is suffering from air and water pollution, land and wetland degradation. The Brazilian rich biodiversity and natural environment are directly threatened by impacts from agriculture and industrialization. Indeed activities linked to timber, development and agriculture are turning down vast proportion of Brazilian forest and therefore taking part in deforestation, one of Brazil's major issues that is a significant source of pollution, biodiversity loss, and greenhouse gas emissions.

Rapid urbanization and industrial development are also increasing air, water, and soil pollution. The population increase forced cities to expand without considering the environmental impacts. Not only infrastructure was built by using products and methods releasing harmful pollution into the air, but also the increase of vehicles took part in the degradation of the air quality. As for the water pollution, the discharge of urban or industrial used water in reservoirs, lakes and river are a big issue in Brazil. The enormous amounts of solid wastes and the lack of proper disposal are also poisoning the soil, air, and water.

Brazil, however, is tackling these issues through its regulations and its different National Policies and Programs in relation with air, water and waste. The real challenge for Brazil remains to manage to make its economic development's interest meet with its environmental responsibility so that it can grow sustainably.

3.2 Regulations and Policies

3.2.1 International Agreements

Brazil ratifies various international conventions and treaties to tackle pollution and environmental issues (see Table 3.2.1).

Table 3.2.1 Major International Agreements signed by Brazil's Government

No.	International Convention and/or Agreements
1	United Nations Framework Convention on Climate Change, ratified in 1994
2	Kyoto Protocol to the United Nations Framework Convention on Climate Change, ratified in 2002
3	Vienna Convention for the Protection of the Ozone Layer, ratified in 1990
4	Montreal Protocol on Substances that Deplete the Ozone Layer, ratified in 1990
5	Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, ratified in 2004
6	Additional of 9th conference of Montreal Protocol on Substances that deplete the Ozone Layer
7	The Beijing Amendment (1999) to the Montreal Protocol agreed by the Eleventh Meeting of the Parties
8	The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal, ratified in 1992
9	Stockholm Convention on Persistent Organic Pollutants, ratified in 2004
10	International Convention on Civil Liability for Oil Pollution Damage
11	Convention on the Prevention of Marine Dumping Pollution by Dumping Wastes and Other Matter (London Convention)
12	Protocol of 1978 related to the International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL)
13	Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space, and Under Water, ratified in 1965.

Source UN 2013

Details on the date of adoption and the date of entry in force of these agreements is summarized in Appendix 1.

3.2.2 Domestic Laws

(1) Overview of Environmental Law and Framework

The primary environmental statutes are the following:

- Federal Law 6.938/1981 sets the National Environmental Policy. The National Environmental Policy had expressly established the Environmental Licensing Process and the Civil Liability for environmental damages;

- Federal Law 9.433/1997, which states the National Policy on Water Resources and regulates the regime of water use in Brazil;

- Federal Law 9.605/1998 is currently the main legal instrument regarding environmental criminal and administrative liabilities, and establishes sanctions applicable to over 60 different crimes against the environment. Federal Decree 6,514/2008, which regulates Federal Law 9,605/1998, provides more than 100 legal rules, violations of which are administratively punishable with warnings, fines, right restrictions, and eventual crime prevision and civil damages;

- Federal Law 9,966/2000 governs the prevention, control, oversight of oil pollution and others

hazardous substances in Brazilian waters;

- Federal Law 9,985/2000 establishes the Protected Areas National System for the protection of biodiversity and represents the main statute on the subject;

- Federal Law 12,187/2009 represents Brazil's commitment to addressing greenhouse gas emissions and states the National Program of Climate Change;

- Federal Law 12,305/2010 establishes the National Policy for Solid Waste, being the main legal framework regulating obligations on the generation, transport, management and destination of solid waste;

- Complementary Federal Law 140/2011 disciplines the hypotheses of shared assignments among the environmental agencies of all federative levels for permitting and enforcement of pollutant activities;

- Federal Law 12,651/2012, also known as the New Brazilian Forestry Code, regulates the protection of Legal Forestry Reserves and the Permanent Protected Areas, especially playing a key role in rural areas;

- Provisional Measure 2,186-16/2001 regulates the access of genetic heritage and its protection for associated traditional knowledge, regulating benefit share conditions and technologic compensation for its use and conservation; and

- Federal Law 11,105/2005 regulates biosafety of genetically modified organisms (GMOs).

(2) Environmental infractions

In Brazil, concerning pollution and environmental issues, the breaching of environmental laws (described in Chapter 2) may unfold in criminal, administrative, and civil liabilities (see Table 3.2.2).

Table 3.2.2 Liabilities in Relation with Environmental Law Breaches

Environmental Liability	Particularity
Criminal	Based upon negligence or fault. In case of absence of these elements, most of the case regarding criminal environmental liability can be appealed.
Administrative	10 different penalties applicable (see Table 3.2.3). Depending of the case, proof of fault or negligence may not be necessary.
Civil	Subject to the strict liability regime, which imposes liability in spite of fault or negligence. As such, liability requires environmental damage and chain of causality; most decisions regarding breaches of environmental law are appealed upon the non-existence of such elements. In the case of environmental contamination of soil, surface water and groundwater, no guilty has to be proven against the polluter to enforce the obligation of recovering the environment. Once the duty to recover the environment represents a propter rem or in some cases even an in rem obligation, the simple ownership of polluted land and natural resources is subject to environmental civil liability. In other words, the liability is based on status of the contaminated resource, but not on fault of the landowner. Therefore, the current landowner may be deemed liable for repairing environmental damages that already existed at the time of acquisition.

Source latinlawyer.com

The laws, summarized in Table 3.2.3, regulate these environmental liabilities and crimes.

Table 3.2.3 Regulations relevant to Environmental Liabilities and Crimes

Regulation	Descriptions
Federal Law No. 6.938/81	Establishes the principle that those responsible for damage to the environment or any portion of it shall be held liable and be obliged to repair such damages.
Federal Law No. 7.347/85	Regulates Public Civil Suits (Ação Civil Publica) involving responsibility for damages to the environment, stipulating the value of damages and requiring environmental reclamation.
Federal Constitution/88	Establishes Popular Suits (Ação Popular) as a legal tool for defending public assets. Through these suits, the public can request that acts damaging public assets be nullified or declared void and that the authorities be held personally responsible.
Federal Law No 9605/98 (environmental crime law) and Federal Decree No 3179/99	Establishes and regulates the principle that companies, owners, and managers or employees responsible for damages to the environment of any of its parts shall be sued for criminal action, irrespective of civil liability and fines, with sentences including compulsory community service, cancellation of rights (including plant shutdown), ban to enter into contracts with the Government, and up to five years in jail for persons found guilty.

To enforce the environmental laws, the Public Prosecutor at the federal or state levels, as well as any entity legally entitled to file the suit, have a strong participation in file lawsuits claiming environmental civil and criminal liabilities. In the case of administrative liabilities, environmental agencies may use legally established penalties described in Table 3.2.4.

Table 3.2.4 Some Penalties in Relation with Environmental Law Breaches

Type of infraction	Penalties
Administrative	Warnings
	Fines
	Apprehension of fauna, flora and their derivatives, or even instruments, vehicles or any other equipment used in violation of law.
	Destruction of products
	Suspension of retail and manufacturing
	Embargo of works and related areas
	Demolition
Criminal	Suspension of activity and other restraints
	Fines
	Restraints
	Community Services
	Prison for directors, managers, members of board, decision makers
	Suspension of activities
	Embargo of work
Temporary closure	

Source latinlawyer.com

As for criminal penalties, the Federal Law 9,605/1998 lists over 60 different environmental crimes (refer to Annexes A-7 on Environmental Crimes Law for more information).

(3) Law governing the remediation of contaminated property

Table 3.2.5 Standards for Environmental Remediation

Level	Standards	Descriptions
State	IBAMA's Instruction 04/2011	General directives for the preparation of a Recovering Plan of Damaged Areas (PRAD) usually required by environmental agencies to manage and recover the environment after the project installation.
Federal	CONAMA Resolution 420/09	To ensure the identification, public disclosure and remediation of contaminated sites. The CONAMA regulation sets out the criteria and guiding principles for checking soil quality for the presence of chemicals and establishes guidelines for environmental management of areas contaminated by such substances as a result of human activities.
National	Brazilian Constitution	Specific obligation for polluter to recover the environment from the damage caused by mineral extraction.

Source latinlawyer.com

(4) Environmental issues related to property transfer, mergers and acquisitions, shutdown or sale of facility

In case of property transfers and/or the sale of a facility or mergers and acquisitions, environmental permits and environmental liability, held by the previous company/or owner are generally transferred to new owners. Therefore, in order to undertake the analysis of all environmental liabilities eventually assumed by the purchaser, it is recommended to analyze the past environmental records of the previous company/or owner, as well as a due diligence proceeding prior to the merger or acquisition. Finally, an environmental clearance certificate from the environmental bodies and public attorneys is very important to contribute with the knowledge of any remaining environmental issues.

In the case of the shutdown of an activity, no specific laws are applicable. However, depending on the activity being shutdown, in order to ensure that the shutdown is being properly executed, and there is no contamination or environmental liabilities whatsoever left behind, authorization from the environmental agency responsible for the permitting procedure may be required.

3.3 Air Pollution

3.3.1 Current Situation

The capitals of the 26 states of Brazil have been greatly affected by air pollution. In urban areas, the atmospheric particles that lead to health problems are common pollutants. This calls for exhaustive studies of mass concentrations and aerosol composition, because elevated concentrations of particulate matter (PM) have been associated with increased morbidity and mortality from cardiovascular and respiratory diseases.

Aerosols are introduced into the atmosphere from a variety of anthropogenic sources, including transport, industrial activities, and biomass burning, as well as from natural sources, such as volcanic eruptions, sea salt, soil dust suspension, and forest fires. Urban pollution is generally composed of coarse and fine particulate matter from mineral dust, combustion processes, sulphur dioxide (SO₂), nitrogen oxides, ammonia, volatile organic compounds (VOCs), and carbon (black and organic). The SO₂, ammonia, and nitrogen oxides are precursors of the sulfuric acid, ammonium bisulfate, ammonium sulfate, and ammonium nitrate particles that often constitute major fractions of PM_{2.5} and PM₁₀, which are harmful to the health. Particulate matter, in particular PM_{2.5}, is a growing problem in Brazil. Together with other pollutants such as oxides of nitrogen and sulfur, air pollution can be attributed to the significant increase of industries in the entire country, vehicle numbers as well as rampant deforestation of the Amazon Basin.

As shown in Figure 3.3.1, the temporal variation of PM₁₀ started to decrease after 1991 gradually, and then, finally reached the WHO standards (i.e., 20 µg/m³) in 2009.

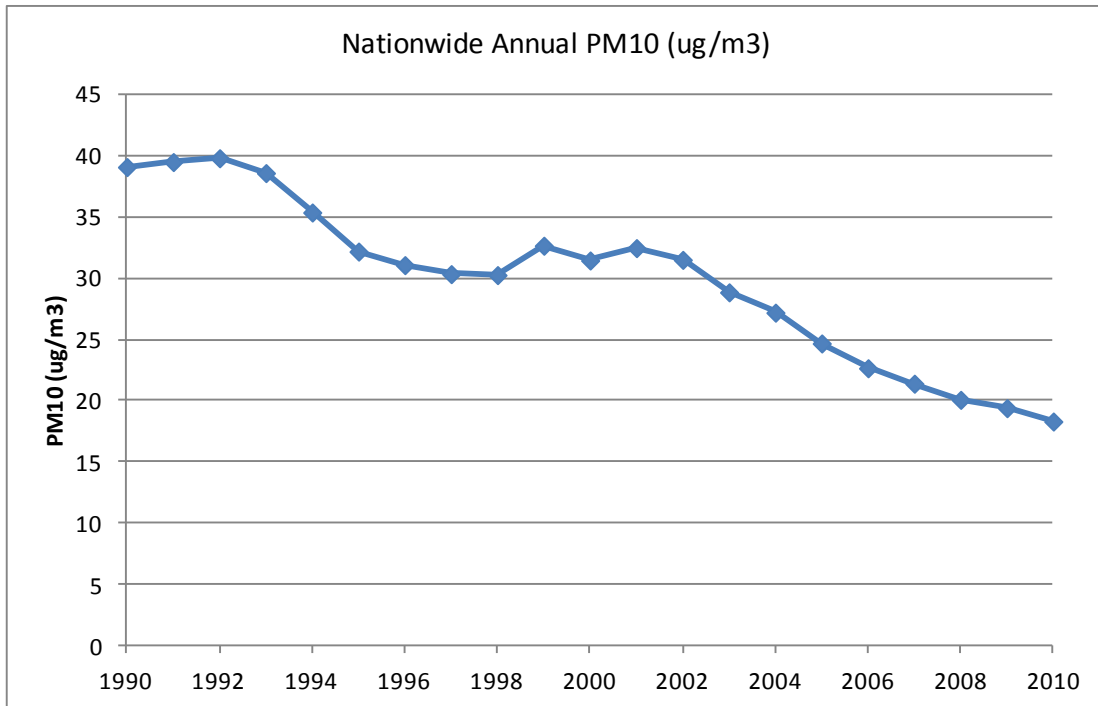


Figure 3.3.1 Level of PM10 *(annual mean) between 1990 and 2010 in Brazil

Note: * Particulate matter concentrations refer to fine suspended particulates less than 10 microns in diameter (PM10) that are capable of penetrating deep into the respiratory tract and causing significant health damage. Data for countries and aggregates for regions and income groups are urban-population weighted PM10 levels in residential areas of cities with more than 100,000 residents. The estimates represent the average annual exposure level of the average urban resident to outdoor particulate matter. The state of a country's technology and pollution controls is an important determinant of particulate matter concentrations.

Source World Bank, 2013

Table 3.3.1 shows the averaged PM2.5 in 6 major Brazilian state capitals in 2010. Sao Paulo, followed by Rio de Janeiro, has the highest level of PM2.5. From this table, it can be said that the annual mean PM2.5 concentrations observed at five of these six cities exceeded the WHO air quality standard (i.e., 10 ug/m³).

Table 3.3.1 Level of PM2.5 (annual average) in 2010

City	Mean PM2.5 (micrograms per cubic meter)
Sao Paulo	28.1
Rio de Janeiro	17.2
Belo Horizonte	14.7
Curitiba	14.4
Porto Alegre	13.4
Recife	7.3

Source Urban air pollution: a representative survey of PM2.5 mass concentrations in 6 Brazilian cities

Figure 3.3.2 shows that emission loading of the nitrous oxide in Brazil. As shown in this figure, the order of the magnitude of NO loading from agricultural sector is dominant whereas not for both industrial and energy sectors. Also, it can be seen that the nitrous oxide emission loading has kept on increasing during 1990 and 2010.

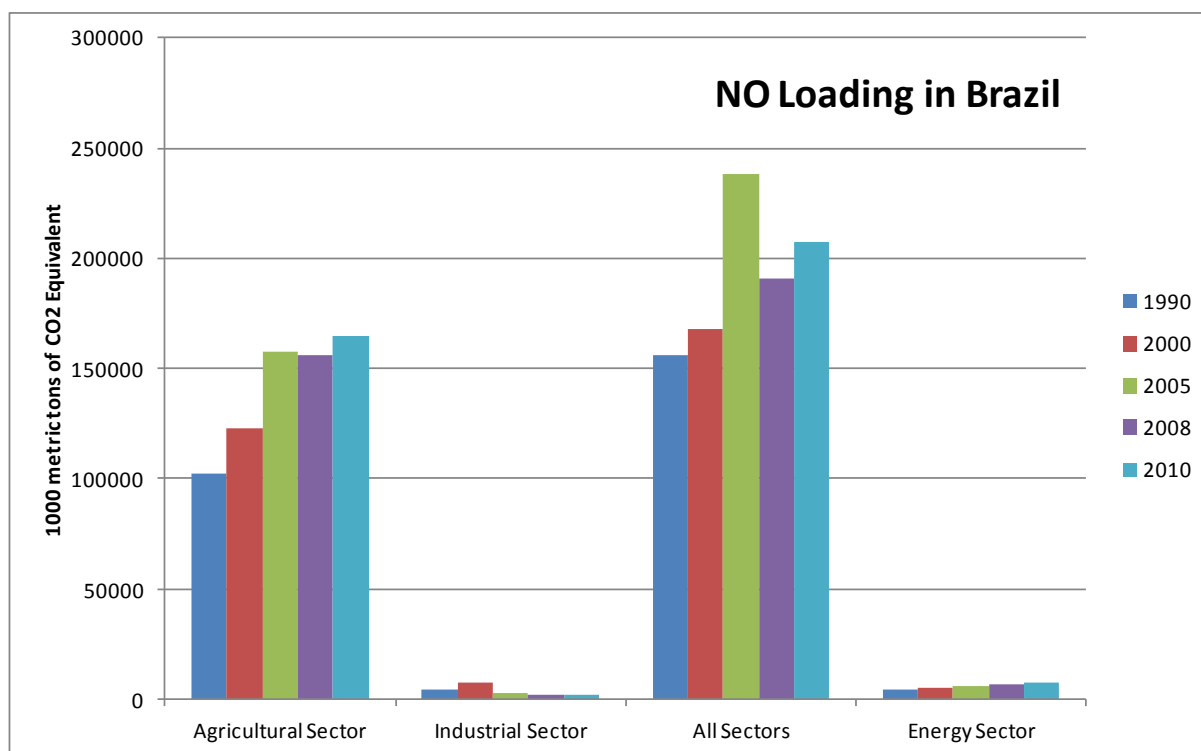


Figure 3.3.2 Nitrous Oxide emissions in Brazil

Source World Bank, 2013

3.3.2 Relevant Laws and Organisations

In Brazil, ambient air quality policies are created by the CONAMA. Passed in August 1990, federal CONAMA Resolution No. 005/89 established a National Air Quality Program (PRONAR). The passing of Federal CONAMA Resolution No. 003/90 established air quality standards, sampling methods, and quality levels. National air quality limits are only to be used in absence of local ambient air quality standards. Within CONAMA Resolution 003/90, primary standards mark the limit of concentrations at which human health would be impacted. Secondary standards are concentrations, which if not exceeded, cause the minimum adverse impact on human health, flora and fauna, materials, and the general environment. Primary standards are applicable until states designate Air Quality Classes within their territory. Table 3.3.2 summarizes key resolutions related to air pollution control in Brazil.

Table 3.3.2 Key Resolutions related to Air Pollution Control

Resolution	Description
CONAMA Resolution 05 in 1989	Established the National Program of Air Quality Control.
CONAMA Resolution 03 in 1990	Established air quality standards, sampling methods, and quality levels.
CONAMA Resolution 08 in 1990	Set the maximum limits of emissions for external combustion processes.
CONAMA Resolution 267 in 2000	In relation with The use of substances designated as regulated substances by the Montreal Protocol on Substances that Deplete the Ozone Layer.
CONAMA Resolution 382 in 2006	In relation with the inspection of air quality

One of the main instruments of environmental management aiming to protect the public health and human activity in Brazil is the National Program of Air Quality Control (PRONAR), established by the CONAMA Resolution 05/89 in 1989 under the Environment National Advisory Board. Within the framework of the PRONAR, the following strategies were defined:

- To define the maximum values of a set of pollutant;
- To adopt the national air quality standards;
- To monitor the air quality;
- To manage and give permission to the air pollution source;
- To produce National Surveys of sources and air pollutant;
- To develop policy and management tools;
- To promote air quality technology, science and capacity building.

Then, in 1990, the CONAMA Resolution 3/90 established air quality standards, sampling methods, and quality levels. National air quality limits are only to be used in the absence of local ambient air quality standards. Table 3.3.3 shows the national air quality standards. It is noted that no relevant environmental bylaws and/or code at state and/or municipality level are not recognized within this study. There is possibilities that some states or municipalities already established/or are under the preparation of relevant codes.

Table 3.3.3 Brazil's Air Quality Standard

Pollutant	Limit ($\mu\text{g}/\text{m}^3$)		Sampling time	WHO standards ($\mu\text{g}/\text{m}^3$)
	Primary ¹	Secondary ²		
TSP	80	60	Annual geometric mean	
	240*	150*	24 hr	
Smoke	60	40	Annual geometric mean	
	150*	100*	24 hr	
Inhalable Particles	50		Annual arithmetic mean	20 for PM10, 10 for PM2.5
	150*		24 hr	50 for PM10, 25 for PM2.5
SO ₂	80	40	Annual arithmetic mean	
	365*	100*	24 hr	
CO	10,000 (9 ppm)*		8 hr	
	40,000 (35 ppm)*		1 hr	
O ₃	160*		1 hr	
NO ₂	100		Annual arithmetic mean	
	320	190	1 hr	

Notes: * Not to be exceeded more than once per year

¹ Primary standards mark the limit of concentrations at which human health would be impacted.

² Secondary standards are concentrations, which if not exceeded, cause the minimum adverse impact on human health, flora and fauna, materials, and the general environment.

Source CONAMA Resolution 3/90, transportpolicy.net

Table 3.3.4 summarizes the atmospheric emission standards, implemented in Brazil. It is noted that Class I is the areas of conservation, leisure and tourism, such as national and/or state parks, reserves and ecological stations, resorts and other important areas. These ecologically important

areas must keep an air quality as close as possible to the place without the anthropogenic intervention. Class II is the areas where the level of air quality deterioration is limited by the secondary standard of quality. Class III is the areas of development where the level of deterioration of air quality is limited by the primary standard of quality. Similar to air quality standards, the relevant environmental bylaws and/or code at state and/or municipality level are not recognized within this study. There is possibilities that some states or municipalities already established/or are under the preparation of relevant codes.

Table 3.3.4 Brazil's Atmospheric Emission Standards

Pollutant	Classes of Areas			
	Class I (Conservation Units)	Other Class I (Resort Areas)	Class II	Class III
Source with less than 70 Mw				
SO ₂	NA	2,000g/106 Kcal	5,000g/106 Kcal	5,000g/106 Kcal
Total particulate matter (TPM)	NA	120g/106 Kcal	350g/106 Kcal - oil 1,500g/106 Kcal - coal	350g/106 Kcal - oil 1,500g/106 Kcal - coal
Smoke (Opacity)	NA	20% Ringelman 01	20% Ringelman 01	20% Ringelman 01
Source with more than 70 Mw				
SO ₂	NA	NA	2,000g/106 Kcal	2,000g/106 Kcal
TPM	NA	NA	120g/106 Kcal - oil 8000g/106 Kcal - coal	120g/106 Kcal - oil 8000g/106 Kcal - coal
Smoke (Opacity)	NA	NA	20% Ringelman 01	20% Ringelman 01

Note: NA : Not Allowed
Source CONAMA 03/90

The CONAMA Resolution 8/90 was approved to set the maximum limits of emissions for external combustion processes.

Currently, the main relevant regulation is the 2006 CONAMA Resolution 382. This resolution specifies that all state governments in Brazil are in charge of inspecting the air quality, and currently, most of them have their own air quality control system and regulations. This resolution has also set up emission standards for industrial processes.

Moreover, there are 12 persistent organic pollutants (POPs, commonly known as the dirty dozen), whose production and use was prohibited in Brazil by Federal Decree 5,472/2005. These are: Aldrin, chlordane, mirex, dieldrin, DDT, dioxins, furans, polychlorinated biphenyls (PCBs), endrin, heptachlor, toxaphene and hexachlorobenzene (HCB). The use of substances designated as regulated substances by the Montreal Protocol on Substances that Deplete the Ozone Layer are prohibited in systems, equipment, facilities and new products, whether domestic or imported (Article 2, CONAMA Resolution No. 267/2000).

There are also specific state laws that identify certain areas that are considered to have reached saturated concentration levels of specific air pollutants, and therefore cannot be further exposed

to any of these pollutants.

Penalties for environmental crimes related to the air pollution include the imprisonment of one to four years, plus fines. Administrative penalties include fines ranging from BR\$ 5,000 to BR\$ 50 million. In a worst-case scenario, if a plant cannot adapt or modify its equipment to comply with the law, there are provisions to shut down these establishments.

3.3.3 Approaches and Efforts

In Brazil, air quality monitoring activities were started in 1972 (MS, 2005). For instance, CETESB, the Environmental Agency of the São Paulo State, started the air quality monitoring in the Metropolitan Region of São Paulo and in Cubatão, due to the alarming air pollution caused by the industry, mainly the petrochemical. Currently, most of states are conducting continuous urban air quality monitoring as well as several private companies are also conducting continuous air quality monitoring works.

The Clean Air Institute, an NGO created in 2006 to improve air quality, established the Clean Air Initiative for entire Latin America. It is a multi-stakeholder partnership of government agencies, NGOs, academic institutions, development agencies aiming to:

- Support common goals for improving air quality and reducing greenhouse gas and Short-Lived Climate Pollutants emissions in LAC countries;
- Provide a framework for identifying, implementing, monitoring and evaluating policy options and measures;
- Facilitate information sharing, dissemination of good practices, and alliance building;
- Build institutional and technical capacity;
- Increase access to financial and investment opportunities for implementing CO₂ reduction actions;
- Enhance opportunities for innovative solutions.

Brazil is also part of the Sustainable Transport and Air Quality (STAQ) program of the Clean Air Institute, which runs from 2009 to 2013. This program was funded by the Global Environmental Facility (GEF) through the World Bank and is executed by the Clean Air Institute with national and local institutions from Brazil. The high level objective of the STAQ Program is to reduce the growth of GHG emissions generated by urban transport in Brazil by promoting more energy-efficient and cleaner transport modes.

Beside, Brazil is part of the US-Brazil Joint Initiative on Urban Sustainability containing a policy and projects related to transportation and the air quality. Rio de Janeiro is benefiting from this initiative.

3.4 Water Pollution

3.4.1 Current Water Use and Its Contamination Situation

(1) Nationwide Water Use

Brazil is known as a country of vast amount of water, with the highest total renewable fresh water supply of the planet (12 %). However, the estimated figure of 6,950 km³/year in the fresh water is to be viewed as merely an indicator of the average country's situation. In fact, 70 % of such availability is in the Amazon Basin where only 7 % of the population lives. The rest 93 % of the country's population must depend on the remaining 30 % of the water availability. The 'per capita' availability varies from 1,460 m³/person/year in the semi-arid North-East to 634,887m³/person/year in the Amazon region.

The North, including the Amazon basin with abundant freshwater resources, is very sparsely populated and poor. The North-East, semi-arid with a constant threat of severe droughts, struggles to sustain a population of 40 million people living in oppressive poor conditions. Cattle raising activities and intensive agriculture development dominate the West, with two dominating ecosystems, the savanna and the wetlands. The South is where the industrial and financial centers are located, with its water resources under a very unbalanced supply/demand relationship, due to excessive consumption and pollution of the large urban areas.

In each region, water is a fundamental resource and a critical issue in Brazil. The highest consumptive water use is for irrigation, which is about 54 % of the total, followed by urban water supply amounting 28 %. The potential area for irrigated agriculture is in the order of 26 million hectares, of which some 25 % is actually developed, meaning that food production is highly dependent on water availability. Irrigation is developed by private and public initiatives. Table 3.4.1 summarizes the current water use condition of Brazil.

Table 3.4.1 Water Use Information of Brazil

Indicator	Definition	Value	Year
Total actual renewable water resources per capita	The maximum theoretical yearly amount of water actually available for a country at a given moment (TARWR) per capita. It takes into consideration the long-term average annual flow of rivers and recharge of aquifers generated from endogenous precipitation, the flow of bordering rivers and lakes, and the water inflow and outflow secured by treaties.	42,604 m ³ /inhab/yr	2009
Percent of freshwater resources withdrawn	Total freshwater withdrawn in a given year, expressed in percentage of the total actual renewable water resources (TARWR). This parameter is an indication of the pressure on the renewable water resources.	0.71%	2006
Municipal water withdrawal as percent of total withdrawal	Amount of water withdrawn by the municipal sector as a percent of all the water withdrawn by the three main water withdrawing sectors (agriculture, municipalities, industry). Municipal water withdrawal includes withdrawal of renewable freshwater resources as well as the possible over-abstraction of renewable groundwater or withdrawal of fossil groundwater and use of desalinated water or treated wastewater. It is usually computed as the total water withdrawn by the public distribution network, plus domestic self-abstraction. It can include that part of the industries, which is connected to the municipal network.	27.95%	2006
Industrial water withdrawal as percent of total withdrawal	Amount of water withdrawn by the industrial sector as a percent of all the water withdrawn by the three main water withdrawing sectors (agriculture, municipalities, industry). Industrial water withdrawal includes withdrawal of renewable water resources as well as the possible over-abstraction of renewable groundwater or withdrawal of fossil groundwater and use of desalinated water or treated wastewater. This sector refers to self-supplied industries not connected to the public distribution network, including thermoelectric cooling, but not including hydropower.	17.46%	2006
Agricultural water withdrawal as percent of total withdrawal	Amount of water withdrawn by the agricultural sector as a percent of all the water withdrawn by the three main water withdrawing sectors (agriculture, municipalities, industry). More specifically, agricultural water withdrawal is the annual quantity of water withdrawn for irrigation, livestock watering and aquaculture purposes. It includes withdrawal of renewable freshwater resources as well as the possible over-abstraction of renewable groundwater or withdrawal of fossil groundwater, direct re-use of return water and desalinated water.	54.59%	2006
Percent of population with access to improved water sources	The proportion of the population (total, urban and rural) with sustainable access to an "improved" water source. It is the percentage of the population who use any of the following types of water supply for drinking: piped water, public tap, borehole or pump, protected well, protected spring or rainwater. Improved water sources do not include vendor-provided water, bottled water, tanker trucks or unprotected wells and springs.	98%	2010
Percent of population with access to improved sanitation	Proportion of the urban and rural population with access to improved sanitation refers to the percentage of the population with access to facilities that hygienically separate human excreta from human, animal and insect contact.	79%	2010

Source UN-Water, FAO-AQUASTAT, JMP (Joint Monitoring Programme)

(2) Water Quality Degradation

One of important environmental issue in Brazil is the discharge of used water into reservoirs, rivers and lakes. When the used water is not properly treated before its discharge (as is frequently the case), it would cause serious water quality degradation problem for other activities which depends on the clean water.

The multiple uses of water in Brazil, together with the economic development of the country, have generated conflicts in the following areas:

- Water use in agriculture and the supply of water for urban areas;
- Public supply of water has been affected due to an increase of agribusiness production and deforestation, which have affected areas of recharge of aquifers, and water quality at their sources;
- Expansion of urban non treated solid waste disposal and the water quality of surface and ground water;
- Expansion of hydroelectricity impact in the tributaries of the Amazon River and disruption of the hydro-social cycle;
- Heavy contamination by toxic metals, eutrophication, excessive use of fertilizers in agriculture, discharge of non-treated domestic water and costs of water treatment;
- Increase in the cost of treatment of water due to the degradation of the sources, deforestation, and contamination of aquifers;
- Impacts of degraded water on human health, mainly in urban and metropolitan regions.

The present situation of water quality in Brazil is a consequence of several impacts, which resulted from the following situations:

- Urbanization and discharge of non-treated waste water in rivers, lakes and reservoirs; (UNESCO, UNEP, 2008);
- Inadequate disposal of solid waste, which impacts the surface and the ground waters;
- Agricultural activities with excessive use of fertilizers, pesticides and herbicides;
- Industrial activities with effluents containing toxic metals; deforestation and the increase of transportation of suspended material reducing the volume of the reservoirs, changing the morphology of the rivers and the natural lakes; mining activities degrading the surface and ground waters; production of hydroelectricity and construction of reservoirs which change river flows, river biodiversity and are the cause of several impacts on major watersheds such as the Paraná, São Francisco and the Amazon River tributaries.

As a consequence of the several economic activities and the multiple uses of water, the main problems of water pollution and contamination are: the increase of toxicity of the surface and ground waters; the eutrophication of rivers and reservoirs with excessive growth of toxic cyanobacteria causing organic contamination of water sources, especially near the large urban centers and metropolitan regions; siltation; and emission of greenhouse gases from eutrophic waters.

3.4.2 Relevant Laws and Organizations

Water resources management is a key element of Brazil's strategy to promote sustainable growth and a more equitable and inclusive society. Brazil's achievements over the past 70 years have been closely linked to the development of hydraulic infrastructure for hydroelectric power generation and just recently to the development of irrigation infrastructure, especially in the Northeast region. The intention of reforming Brazil's water resources management system began to shape during the 1970s when other water users challenged the priority given to hydropower. In 1997, the Federal Government approved the 1997 National Water Law (No. 9433) aimed at incorporating modern water resources management principles and instruments into Brazil's water resources management system. National Water Authority was created in 2000 aimed at implementing the National Water Law Federal Law 9984/2000). Tables 3.4.2 and 3.4.3 summarize water pollution-related laws and regulations at Federal and State-Level of Brazil, respectively. Table 3.4.4 summarizes CONAMA's water – related Resolution. Water Quality-related standards of Brazil are summarized in Table 3.4.5.

Table 3.4.2 Laws relevant to Water Pollution

No	Name of the Regulation	Description
1	Federal Law 9433/97 (Water Law)	Established the National Policy on Water Resources, according to which the granting of use of water resources aims to ensure the quantitative and qualitative control of water use and the effective exercise of rights concerning access to water. It has also created the National Water Resource Management System (SINGREH).
2	Decree 2612 in 1998	Established the bylaws of the National Water Resources Council (CNRH)
3	Decree 2619 in 1998	Establishes the organizational arrangement of the Ministry of Environment, Water Resources and the Legal Amazon Region.
4	Federal Law 9984/2000	Established the National Water Agency (ANA).

Source National Water Agency, Hydrological Monitoring Network

Table 3.4.3 State water resources legislation

State	Laws on Water Resources Management Policy
Alagoas	Law # 5.965 of 10 November 1997 establishes the State Water Resources Policy and the State Integrated Water Resources Management System and makes other provisions.
Bahia	Law # 6.855 of 12 May 1995 establishes the State Water Resources Policy, Management and Plan and makes other provisions.
Ceara	Law # 11.996 of 24 July 1992 establishes the State Water Resources Policy and the Integrated Water Resources Management System (SIGERH) and makes other provisions.
Distrito Federal	Law # 512 of 28 July 1993 establishes the Water Resources Policy for the Distrito Federal, creates the Integrated Water Resources Management System (SGIRH-DF) and makes other provisions.
Espirito Santo	Law # 5.818 of 30 December 1998 establishes the State Water Resources Policy, institutes the Integrated Water Resources Management System of the State of Espírito Santo (SIGERH/ES) and makes other provisions.
Goiás	Law # 13.123 of 16 July 1997 establishes the State Water Resources Policy and makes other provisions.
Maranhao	Law # 7.052 of 22 December 1997 establishes the State Water Resources Policy and the Integrated Water Resources Management System and makes other provisions.
Mato Grosso	Law # 6.945 of 5 November 1997 establishes the State Water Resources Policy and the Integrated Water Resources Management System and makes other provisions.
Minas Gerais	Law # 13.199 of 29 January 1999 establishes the State Water Resources Policy and makes other provisions.
Paraiba	Law # 6.308 of 2 July 1996 establishes the State Water Resources Policy, defines its guidelines and makes other provisions.
Parana	Law # 12.726 of 26 November 1999 establishes the State Water Resources Policy and the State Water Resources Management System and makes other provisions.
Pernambuco	Law # 11.426 of 17 January 1997 establishes the State Water Resources Policy, State Water Resources Plan and Integrated Water Resources Management System and makes other provisions.
Piaui	Law # 5.615 of 17 August 2000 establishes the State Water Resources Policy and the Integrated Water Resources Management System (SIGERH) and makes other provisions.
Rio de Janeiro	Law # 3.239 of 2 August 1999 establishes the State Water Resources Policy and the State Water Resources Management System, regulates § 1Q, Paragraph VII, Article 261 of the State Constitution and makes other provisions.
Rio Grande Do Norte	Law # 3 6.908 of 1st July 1996 establishes the State Water Resources Policy and the Integrated Water Resources Management System (SIGERH) and makes other provisions.
Rio Grande Do Sul	Law # 10.350 of 30 December 1994 establishes the State Water Resources Policy, regulating Article 171 of the Rio Grande do Sul Constitution.
Santa Catalina	Law # 9.748 of 30 November 1994 establishes the State Water Resources Policy and makes other provisions.
Sao Paulo	Law # 7.663 of 30 December 1991 establishes guidelines for the State Water Resources Policy and the Integrated Water Resources Management System.
Sergipe	Law # 3.870 of 25 September 1997 establishes the State Water Resources Policy and the Integrated Water Resources Management System (SIGERH) and makes other provisions.

Source National Water Agency, Hydrological Monitoring Network

Table 3.4.4 Water Resolutions, issued by CONAMA

	Laws/Regulations	Descriptions
1	CONAMA Resolution 20/1986	Sets water quality standards for water bodies by their proposed use, classifying inland waters into seven types.
2	CNRH Resolution 16/2001	Sets forth that the granting of the right to use water for industrial discharge will be given in amount of water needed to dilute the pollutant load, which can vary over the timetable of the grant, and shall be based on the standards of water quality corresponding to the class of the receiving watercourse and specific criteria defined in the relevant water resources plan or by relevant agencies.
3	CONAMA Resolution 357/2005	Conditions and standards for discharge of wastewater, which must be complied with.

Table 3.4.5 Effluent Discharge Standards

Parameter	CONAMA 020/86 limits	World Bank limits
pH	5.0 < pH < 9.0	6-9
Temperature	< 40°C (not to generate a variation of more than 3°C)	(not to generate a variation of more than 3°C)
Settling Matter	1.0 mg/l in 1 hour "Imhoff" test	50 mg/l
Oil and Grease (mineral)	20 mg/l	10 mg/l
DBO (Oxygen Demand)	60 mg/l	50 mg/l
Residual Chlorine	NR	0.2 mg/l
Total phosphates	NR (but not to exceed 0.025 P outside the mixing zone)	NR
Nitrates	10 mg/l	NR
NH4	5.0 mg/l	10 mg/l
Cadmium	0,2 mg/l	0,1 mg/l
Lead	0.5 mg/l	0.1 mg/l
Copper	1.0 mg/l	0.5 mg/l
Hexavalent Chromium	0.5 mg/l	0.1 mg/l
Chromium	2.0 mg/l	0.5 mg/l (total)
Phenol	0.5 mg/l	0.5 mg/l
Soluble Iron (Fe2+)	15.0 mg/l	3.5 mg/l
Fluoride	10 mg/l	20 mg/l
Soluble Manganese (Mn2+)	1.0 mg/l	NR
Nickel	2.0 mg/l	0.5 mg/l
Sulfite	1.0 mg/l	NR
Zinc	5.0 mg/l	1 mg/l

Note: NR: Not Regulated
Source CONAMA 020/86

The National Policy on Water Resources sets out the following uses of water resources, which are subject to licensing by public authorities (Article 12, I, Federal Law No. 9,433/1997)¹:

- 1.The collection of water in a watercourse for final consumption, including public supply, or input into the production process.
- 2.The extraction of water from an underground aquifer for final consumption or input into the production process.
- 3.The release of water sewage and other liquid or gaseous waste in the watercourse, treated or untreated, with the purpose of dilution, transport or disposal.
- 4.The exploitation of hydroelectric potential.
- 5.Other uses that alter the system, the quantity or quality of water existing in a watercourse.

Every license must be:

- Specific to uses as set out in water resource plans. Water resource plans are management instruments established for the planning of multiple uses of water. They set out priorities, actions, programmes and projects and aim to harmonize the uses of water with the preservation of water resources. The water resource plan is developed with the participation of public, state and municipal governments and civil society, which provides guidelines for implementing the Policy on Water Resources.
- Observe the class in which the body of water is included and maintenance of

¹ Practical Law, <http://us.practicallaw.com/2-508-8459#a625624>

- appropriate waterway transportation, if applicable.
- Issued through an Act by the appropriate federal, state or federal district executive authority (see Table 3.4.6 for more detailed information).
 - The relevant environmental licensing authority for the operation of the activities governs water quality and related discharges of effluent into river courses. However, water quantity is controlled by federal or state water agencies through separate water permits.

Pursuant of the Federal Law 9.433 (National Water Policy), following five essential instruments for good water use management were established:

1. The National Water Resources Plan, which constitutes the basic programming document for the water sector and a comprehensive document updating and consolidating the Water Resources Master Plans, which are drawn for each catchment basin.
2. Granting rights to use water resources, which is the instrument whereby users are granted authorization, concession or permission to use water. It is the main control element of rational water use, since it induces users to discipline water utilization.
3. Charges for water use, essential to create the conditions for a balance between supply (water availability) and demand and, thus, promote harmony among competing users.
4. Classification of bodies of water in usage categories, creating a link between water quality and quantity management. It is extremely important to set up a surveillance system focusing on the quality of water sources.
5. National Water Resources Information System, in charge of gathering, organizing, analyzing, and disseminating the water resources database, water resources uses, water balance in each source and basin, providing managers, users and civil society the information required in the decision making process.

Table 3.4.6 summarizes agencies, established by the new system.

Table 3.4.6 Water Resources Management Bodies

	Organization	Major Functions
1	National Water Resources Council	The highest body in the National Water Resources System hierarchy in administrative terms, in charge of deciding major issues and judging major conflicts
2	The National Water Resources Secretariat	Collegiate body acting as executive secretariat of the National Water Resources Council.
3	The National Water Agency (ANA)	Independent agency legally liable for implementing the National Water Resources Management System and linked to the MMA (refer to the Annex in the Appendix to have further understanding of ANA's attribution)
4	Catchment Basin Committees	Managing public goods in Brazil, with the participation of users, local governments, organized civil society, other levels of government (state and federal), selected to take decisions in each catchment basin level.
5	Water Agencies	Main purpose is to manage the funds resulting from water use charges
6	Civil Water Resources Organizations	Entities that work with water resources planning and can have noteworthy participation in the decision-making and water use monitoring processes.

The following activities are considered breaches of use of surface or underground water resources (Article 49, I, Federal Law No. 9,433/1997):

- Extracting or using water for any purpose without the proper grant of use rights.
- Beginning deployment or deploying an enterprise related to extracting or using of surface or underground water resources, involving changes to their quantity, quality, characteristics or regime without a grant from the competent authorities.
- Using water resources, or performing work or services related to them, violating the conditions of the grant.
- Drilling wells to extract groundwater or operating them without proper authorization.
- Fraudulently measuring the volume of water used or declaring different values measured.
- Violating federal laws, including instructions and procedures established by public authorities.
- Obstructing or hindering the activities of the supervisory authorities while they are performing their functions.

As for penalties, the absence of a water license allowing for interference with watercourses or with underground water is deemed to be an administrative breach and generally can result in fines of between BR\$ 100 and BR\$ 10,000. However, pollution to water resources can be fined by up to BR\$ 50 million, depending on the extent of the damage.

3.4.3 Approaches and Efforts

In Brazil, about 18,000 water quality monitoring stations exist and about 6,000 of them are operated by ANA (note that Amazon region is not well covered by ANA due to logistical difficulties). During 1970s, water quality degradation due to industrial activity began to start, but those problems were mitigated by improving effluent treatment system, required for industrial sector by law and by establishment of comprehensive nation-wide water quality monitoring network (ANA, personal communication, 2014).

To celebrate the World Water Day² and the International Year of Water Cooperation, in 2013, MMA and ANA have launched the Consolidation Program of the National Pact for Water Management (PROGESTÃO). The action will make BR\$ 100 million available, in next the five years, for the states that reached the goals agreed between the federal government and states.

The Program for Development of the Water Sector (INTERÁGUAS) is a Brazilian effort to attempt to pursue a better articulation and coordination of initiatives of the Water Sector. In other words, it creates an environment where the areas involved with the use of water may articulate and plan their actions in a rational and integrated way, in order to contribute to the strengthening of planning and management in the Water Sector, especially in the less developed

² In 1993, the United Nations General Assembly declared March 22nd as the World Water Day and since then it has been observed. The UN and its member nation devote this day to implement recommendations and promote concrete activities within their countries regarding the world's water resources.

regions of the country.

The River Basin Clean-up Program (PRODES), created in 2001, aims to reduce the levels of pollution by domestic sewage in Brazilian watersheds, improving the water quality, in particular those which pose serious problems of water pollution caused by the disposal of sewage without treatment.

The Water Producer Program, designed by ANA in 2001, has as its main objective the environmental regeneration of watersheds with the payment for environmental services for conservation actions concerning water and soil in rural environment, which is reflected in the quantity and the quality of the water that reaches the cities. With different institutional arrangements, the Water Producer already has about 20 projects in progress throughout Brazil.

The National Program of Water Quality Evaluation (PNQA), developed by the National Water Agency, aims to increase the knowledge about the quality of surface water resources in Brazil, in order to guide the elaboration of public policies for the recovery of environmental quality in water bodies such as inland rivers and reservoirs, thus contributing to the sustainable management of water resources. The construction of a National Network of Water Quality Monitoring is in progress to be operated by the states with the coordination of ANA. In addition, the Program provides training, quality improvement of laboratories carrying out analysis of water, evaluation and periodic dissemination of the results obtained with the monitoring and standardization of parameters and procedures.

3.5 Soil Pollution

3.5.1 Current Situation

Concerning the soil pollution related to urban solid waste, almost 60 % of waste disposal sites in Brazil are open dump sites with no infrastructure for environmental protection. It is usual to find uncovered waste. The rainwater runs off over the uncovered top of the waste dump and may contaminate surrounding soil.

Concerning hazardous waste, according to ABETRE (Brazilian Association of Hazardous Waste Treatment) Brazil generates nearly 3 million tons of it each year, mainly in the South and South-East³. The number of landfills capable of handling special waste is insufficient and costs of incineration are high.

Official estimates put the number of contaminated sites in Brazil at 15,000. In 2013, CETESB,

³ UK Trade & Investment, Sector briefing: Brazil opportunities in Environment & Water, 2010)

Sao Paulo State Environment Agency), identified the existence of 4,572 contaminated sites in the state, representing a 10% increase in relation to 2012.

3.5.2 Relevant Laws and Organisations

At federal level, CONAMA Resolution 420/09 establishes a standard procedure that aims to ensure the identification, public disclosure and remediation of contaminated sites. The regulation sets out the criteria and guiding principles for checking soil quality for the presence of chemicals and establishes guidelines for the environmental management of areas contaminated by such substances as a result of human activity.

At state level, for most of the Brazilian states a specific legislation does not exist for the subjects that involve contaminated land. The existing environmental legislation offers a base referring to different aspects of the problem. However, the IBAMA issued Instruction 04/2011, which establishes the general directives for the preparation of a Recovery Plan for Damaged Areas. This environmental remediation activity is usually required by environmental agencies to manage and restore the environment after project installation.

In addition, Sao Paulo State Law 13577/09 was passed in order to ensure that contaminated sites in the region are subject to adequate identification, public disclosure and remediation. This law promotes guidelines and procedures for the protection of the quality of the soil against noxious alterations by contamination. In accordance with this law, CETESB is responsible for the planning and management of the process of identification, registration and rehabilitation of contaminated sites.

Furthermore, in relation to mining activities, the Constitution provides a specific obligation for polluters to restore the environment following the damage caused by mineral extraction.

Table 3.5.1 summarizes relevant soil and groundwater quality standards, implemented in Brazil.

Table 3.5.1 Environmental Standards for Soil and Groundwater Contamination

Substances	Soil (Mg.kg-1 of dry weight) (1)					Groundwater (µg.L-1)
	Quality Reference	Prevention	Investigation			Investigation
			Agricultural APM _{ax}	Residential	Industrial	
Inorganic						
Aluminum	E	-	-	-	-	3,500**
Antimony	E	2	5	10	25	5*
Arsenic	E	15	35	55	150	10*
Barium	E	150	300	500	750	700*
Boron	E	-	-	-	-	500
Cadmium	E	1.3	3	8	20	5*
Lead	E	72	180	300	900	10*
Cobalt	E	25	35	65	90	70
Copper	E	60	200	400	600	2,000*
Chrome	E	75	150	300	400	50*
Iron	E	-	-	-	-	2,450**
Manganese	E	-	-	-	-	400**
Mercury	E	0.5	12	36	70	1*
Molybdenum	E	30	50	100	120	70
Nickel	E	30	70	100	130	20
Nitrate (As N)	E	-	-	-	-	10,000*
Silver	E	2	25	50	100	50
Selenium	E	5	-	-	-	10*
Vanadium	E	-	-	-	1000	-
Zinc	E	300	450	1,000	2,000	1,050**
Volatile Aromatic Hydrocarbons						
Benzene	n/a	0.03	0.06	0.08	0.15	5*
Styrene	n/a	0.2	15	35	80	20*
Ethyl benzene	n/a	6.2	35	40	95	300**
Toluene	n/a	0.14	30	30	75	700**
Xylenes	n/a	0.13	25	30	70	500**
Aromatic polycyclic Hydrocarbons						
Anthracene	n/a	0.039	-	-	-	-
Benzo (a) anthracene	n/a	0.025	9	20	65	1.75
Benzo (k) fluoranthene	n/a	0.38	-	-	-	-
Benzo (g, h, i) Perylene	n/a	0.57	-	-	-	-
Benzo (a) pyrene	n/a	0.052	0.4	1.5	3.5	0.7*
Chrysene	n/a	8.1	-	-	-	-
Dibenzo (a, h) anthracene	n/a	0.08	0.15	0.6	1.3	0.18
Phenanthrene	n/a	3.3	15	40	95	140
Indeno (1,2,3 - cd) pyrene	n/a	0.031	2	25	130	0.17
Naphthalene	n/a	0.12	30	60	90	140

Source CONAMA 420/09

Table 3.5.1 Environmental Standards for Soil and Groundwater Contamination (continued)

Substances	Soil (Mg.kg-1 of dry weight) (1)					Groundwater (µg.L-1)
	Quality Reference	Prevention	Investigation			Investigation
			Agricultural APMax	Residential	Industrial	
Chlorinated Benzenes						
Chlorobenzene (Mono)	n/a	0.41	40	45	120	700**
1,2-Dichlorobenzene	n/a	0.73	150	200	400	1000
1,3 -Dichlorobenzene	n/a	0.39	-	-	-	-
1,4-Dichlorobenzene	n/a	0.39	50	70	150	300
1,2,3 -Trichlorobenzene	n/a	0.01	5	15	35	(a)*
1,2,4 -Trichlorobenzene	n/a	0.011	7	20	40	(a)*
1,3,5 -Trichlorobenzene	n/a	0.5	-	-	-	(a)*
1,2,3,4-tetrachlorobenzene	n/a	0.16	-	-	-	-
1,2,3,5-tetrachlorobenzene	n/a	0.01	-	-	-	-
1,2,4,5-tetrachlorobenzene	n/a	0.01	-	-	-	-
Hexachlorobenzene	n/a	0.003(3)	0.005	0.1	1	1*
Chlorinated ethanes						
1,1-Dichloroethane	n/a	-	8.5	20	25	280
1,2-Dichloroethane	n/a	0.075	0.15	0.25	0.50	10*
1,1,1-Trichloroethane	n/a	-	11	11	25	280
Chlorinated ethenes						
Vynil Chloride e	n/a	0.003	0.005	0.003	0.008	5*
1,1-Dichloroethan	n/a	-	5	3	8	30*
1,2-Dichloroethene-eis	n/a	-	1.5	2.5	4	(b)
1,2-Dichloroethene - trans	n/a	-	4	8	11	(b)
Trichloroethylene - TCE	n/a	0.0078	7	7	22	70*
Tetrachloroethylene - PCE	n/a	0.054	4	5	13	40*
Chlorinated Metanes						
Dichloromethane	n/a	0.018	4.5	9	15	20*
Chloroform	n/a	1.75	3.5	5	8.5	200
Carbon Tetrachloride	n/a	0.17	0.5	0.7	1.3	2*
Chlorinated Phenols						
2-Chlorophenol (o)	n/a	0.055	0.5	1.5	2	10.5
2,4-Dichlorophenol	n/a	0.031	1.5	4	6	10.5
3,4-Dichlorophenol	n/a	0.051	1	3	6	10.5
2,4,5-Trichlorophenol	n/a	0.11	-	-	-	10.5
2,4,6-Trichlorophenol	n/a	1.5	3	10	20	200*
2,3,4,5-tetrachlorophenol	n/a	0.092	7	25	50	10.5
2,3,4,6-tetrachlorophenol	n/a	0.011	1	3.5	7.5	10.5
Pentachlorophenol (PCP)	n/a	0.16	0.35	1.3	3	9*

Source CONAMA 420/09

Table 3.5.1 Environmental Standards for Soil and Groundwater Contamination (continued)

Substances	Soil (Mg.kg-1 of dry weight) (1)					Groundwater (µg.L-1)
	Quality Reference	Prevention	Investigation			Investigation
			Agricultural APMax	Residential	Industrial	
Non-Chlorinated Phenols						
Cresols -	n/a	0.16	6	14	19	175
Phenol	n/a	0.20	5	10	15	140
Phthalic Esters						
Bis(2-ethylhexyl) phthalate (DEHP)	n/a	0.6	1.2	4	10	8
Dimethyl phthalate	n/a	0.25	0.5	1.6	3	14
n-Dibutyl phthalate	n/a	0.7	-	-	-	-
Organochlorine Pesticides						
Aldrin	n/a	0.015	0.003	0.01	0.03	(d)*
Dieldrin	n/a	0.043	0.2	0.6	1.3	(d)*
Endrin	n/a	0.001	0.4	1.5	2.5	0.6*
DDT	n/a	0.010	0.55	2	5	(c)*
DDD	n/a	0.013	0.8	3	7	(c)*
DDE	n/a	0.021	0.3	1	3	(c)*
Beta HCH	n/a	0.011	0.03	0.1	5	0.07
Gamma-BCH - (Lindane)	n/a	0.001	0.02	0.07	1.5	2*
PCBs						
TOTAL	n/a	0.0003 (3)	0.01	0.03	0.12	3.5

Note:

(1) - For comparison with guiding values, use the recommendations of the methods 3050b (Except for the element mercury) or 3051 of USEPA SW-846- or another equivalent procedure for acid digestion of samples of soils in determining inorganic substances by spectrometric techniques.

E - to be defined by the State.

n/a - does not apply to organic substances.

(a) summation for trichlorobenzenes = 20 µg.L-1.

(b) summation for 1, 2 dichloroethenes; = 50 µg.L-1.

(c) summation for DDT - DDD - DDE = 2 µg.L-1.

(d) summation for Aldrin and Dieldrin = 0.03 µg.L-1.

* Potability Standards of chemicals that represent a risk to health defined in the Ordinance nr 518/2004 of the Ministry of Health (Table 3).

** Values calculated based on risk to human health, according to the scope of this Resolution.

Differ from the standards of acceptance for human consumption defined in the Ordinance nr. 518/2004 of the Ministry of the Health (Table 5) and of the maximum values allowed for human consumption defined in the Annex I of the Resolution CONAMA nr 396/2008.

Source CONAMA 420/09

3.6 Solid Waste

3.6.1 Current Situation

According to the National Policy for Solid Waste, solid waste is defined as any “material, substance, object disposed resulting from human activities in society, whose final destination is carried, it is proposed to proceed or is obliged to carry, in solid or semisolid as well as gases and liquids in containers whose characteristics make it infeasible its launch in public sewers or water bodies, or require for that solutions technically or economically infeasible in the face of the best available technology.” Table 3.6.1 summarizes the typical composition of urban solid

wastes. Table 3.6.2 summarize total daily amount of solid wastes, generated at all municipalities in Brazil. Table 3.6.3 summarizes the number of municipalities with landfill sites. Table 3.6.4 summarizes the number of municipalities implementing waste segregation program within their waste collection system.

Table 3.6.1 Composition of urban solid waste (total value) in Brazil

Wastes	Amount (ton/day)	(%)
Recyclable Material	58,527	21.5
Metals	5,294	1.9
Steel	4,214	1.5
Aluminium	1,080	0.4
Paper, cardboard, tetrapak	23,997	8.8
Plastic Total	24,848	9.1
Plastic film	16,400	6.0
Hard Plastic	8,448	3.1
Glass	4,389	1.6
Organic matter	94,335	34.7
Other	30,619	11.3
Total	272,151	100.0

Source MMA, 2012

Table 3.6.2 Municipal solid waste (total value) by types of disposal in Brazil

Type of disposal	2000 Quantity (t/d)	2000 (%)	2008 Quantity (t/d)	2008 (%)
Landfill	49,615	35.4	110,044	58.3
Controlled garbage dump	33,854	24.2	36,673	19.4
Open garbage dump	45,485	32.5	37,361	19.8
Composting plant	6,365	4.5	1,520	0.8
Material recovery facilities	2,158	1.5	2,592	1.4
Incineration	483	0.3	65	< 0.1
Garbage dump on wetlands	228	0.2	35	< 0.1
Places not fixed	877	0.6	SI	-
Other units	1,015	0.7	525.20	0.3
Total	140,081		188,815	

Source Brazilian Institute of Geography and Statistics (IBGE)

Table 3.6.3 Number of Municipalities with landfill sites

Regions	Number of Municipalities	Population x 1,000,000
North	37	2.3
North-East	97	15.3
Central-West	62	4.4
South-East	534	51.4
South	282	14.6
Total	1112	87.8

Source MMA, National Basic Sanitation Research (Pesquisa Nacional de Saneamento Basico – PNSB), 2008

Table 3.6.4 Number of Municipalities where there are waste segregation programs

Regions	Number of Municipalities	Population x 1,000,000
North	16	1.1
North-East	57	10.5
Central-West	27	2.1
South-East	335	37.6
South	235	7.0
Total	670	58.4

Source MMA, SNIS 2007

Considering that Brazil has a total of 5,564 municipalities, only 12 % of the municipalities have a waste segregation program and 20 % of them have a landfill.

3.6.2 Relevant Laws and Organisations

Brazil is part of the Basel Convention since 1992. Therefore Brazil is committed to control trans-boundary movements of hazardous wastes and their disposal. The competent Authority putting into force the Basel Convention is the IBAMA with the focal point that is the Division of Environment Policy and Sustainable Development of the Ministry of Foreign Affairs.

Moreover, at the national level, the following legislation, regulations and guidelines concerning reduction and/or elimination of hazardous waste and solid waste generation are in force in Brazil (see Tables 3.6.5 and 3.6.6).

Table 3.6.5 Laws relevant to hazardous waste and solid waste

No	Name of the Regulation	Description
1	Federal Law 12,305/2010	Sets up the Solid Waste National Policy. This Law also defines hazardous substances as flammable, corrosive, reactive, toxic, pathogenic, carcinogenic, mutagenic or teratogenic, representing significant risk to public health or any other environmental feature. Therefore, all activities that generate hazardous substances are bound to prepare a plan for the management of solid waste, while its environmental permit shall only be granted upon the proof of economic capacity for supporting all risks and obligations arising from the proper management and disposal of such waste. The liability of generator, transporter and processor for the correct destination of solid waste is also foreseen.
2	Federal Decree 7,404/2010	Regulates the National Policy on Solid Waste.
3	Federal Decree 7,405/2010	Pro-Scavenger Decree.
4	Federal Law 11,445/2007	Basic Sanitation
5	CONAMA Resolution 375/2006 and 380/2006	Relevant to sewage sludge.
6	Federal Law 11,107/2005	Public Consortia
7	CONAMA Resolution 357/2005	Relevant to Liquids effluents
8	CONAMA Resolution 358/2005	Relevant to Health Care Wastes
9	CONAMA Resolution 363/2005	Relevant to Lubricant oil or contaminated
10	Federal Law 7802/1989 and Regulation 4074/2002	Relevant to Agro toxic
11	Resolution CONAMA 307/2002	Sets forth that civil construction wastes contaminated with asbestos is classified as hazardous wastes and must be handled properly and sent for adequate disposal.
12	CONAMA Resolution 258/1999 and 301/2002	Relevant to tires
13	CONAMA Resolution 307/2002	Aims to dispose of asbestos. Civil construction waste contaminated with asbestos is classified as hazardous waste, and must be properly handled and sent for adequate disposal.
14	CONAMA Resolution 313/2002	National Inventory of Industrial Solid Wastes.
15	CONAMA	Thermal treatment of wastes system.

	Resolution 316/2002	
16	CONAMA Resolution 257/99	Relevant to Pile and Battery.
17	Resolution CONAMA 264/1999	Co-processing of wastes
18	Resolution CONAMA 05/1993 and Resolution CONAMA 06/1991	Wastes of ports, airports and rail/bus terminal
19	Resolution CONAMA 08/1991	Ban importation of wastes for incineration and final disposal
20	Resolution CONAMA 02/1991	Treatment and final disposal of deteriorated, contaminated, out of specification or abandoned cargoes
21	CONAMA Resolution 006/88	Creates 3 classes of residues: Class I: hazardous, Class II: non-inert, Class III: inert. Establishes solid wastes inventories to be submitted to the environmental authorities for both new and existing activities.
22	CONAMA Resolution 348/2004, 09/1988 and 7/1987	Relevant to the mitigation of asbestos
23	Resolution CONAMA 1A/1986	Hazardous wastes transportation
24	Federal Minter Resolution 053/79	Establishes that projects for the final treatment and disposal of solid wastes are subject to approval by the competent State Agency.

Source Basel Convention, Country Fact Sheet

Table 3.6.6 Standards relevant to Solid Waste

No	Name of the Standard	Description
1	ABNT Standard NBR No. 10.004/87	Classifies solid waste as Class I (Hazardous), Class IIA (Non-Inert), and Class IIB (Inert), according to their potential risks to the environment and public health, ensuring proper handling and disposal of these solid wastes. It is noted that solid waste Class I (hazardous) encompassing waste that is hazardous due to its physical, chemical or infectious-contagious properties and that may present (1) a public health hazard, causing mortality, incidence of disease or increasing rates of such or (2) risk to the environment if the waste is managed improperly. Class II A waste (non-inert) may exhibit properties of biodegradability, flammability, and water solubility, and class II B waste (inert) is any waste that, when sampled in a representative manner and subjected to dynamic and static contact with distilled or deionized water at room temperature, has none of its constituents solubilized at concentrations above the standard for water portability, except for appearance, color, turbidity, hardness and taste. ⁴
2	ABNT Standard NBR No. 10.005/87	Establishes requirements for toxicity leaching tests for classifying solid wastes.
3	ABNT Standard NBR No. 10.006/87	Establishes the requirements for differentiating between non-inert (Class II) and inert (Class III) wastes, applicable only to wastes in a solid state.
4	ABNT Standard NBR No. 10.007/87	Establishes the solid wastes sampling requirements.
5	ABNT Standard NBR No. 10.157/87	Establishes the requirements for the design and operation of hazardous wastes landfills.

In Brazil, according respectively to Articles 21 and 30 of the Federal Constitution, the National Government gives guidelines for urban development, including sanitation, and the

⁴ Scientific Electronic Library On Line,
http://www.scielo.br/scielo.php?pid=S1519-70772013000200004&script=sci_arttext&tlng=en

Municipalities organize and provide, directly or by concession or permission, the public services of local interest. Several industries, amounting almost 200 now, have been awarded with the ISO 14000 series certification and are implementing Cleaner Production and Eco-efficiency Programs. There are now initiatives and actions for reduction of waste production in the industrial process.

On environmental management of special wastes, there is a political agreement signed within MERCOSUL considering universal generation and extended producer responsibility.

The Environmentally Sustainable Management of Tires is also awaiting the Presidential Staff Office decision to be sent to the National Congress.

The Federal Law 12,305 established the Solid Waste National Policy in 2010 and in the same time a deadline for States and Municipalities to prepare their own solid waste plans as a condition to receive federal financial resources for implementing landfills in available areas. It is a set of principles, objectives, instruments, guidelines, goals and actions to be adopted by the National Government itself or by its partners with states, municipalities, federal district and private actors of the society aiming an integrated and environmentally sound management of the solid waste.

An inter-ministerial committee was created by the decree No. 7,404 in 2010 to support the structuring and implementation of the Solid Waste National Policy, through the articulation of the organs and government agencies, to enable compliance with the targets set out in the Federal Law 12,305 and the Decree 7,404. There are 10 Ministries and 2 organs of the Presidency of the Republic (Casa Civil, Institutional Relations Secretariat) that is part of this committee. This inter-ministerial committee work in 2011 on:

- Plans and other aspects of the Solid Waste National Policy,
- Energy recovery from Urban Solid Waste,
- Tributary desoneration and incentives,
- Hazardous Solid Waste,
- Information system.

The Solid Waste National Policy has established the several goals for the reduction of waste disposal at landfills (see Table 3.6.7).

Table 3.6.7 Waste Disposal Reduction at Landfills

Disposal Reduction at landfills	2015	2019	2023	2027	2031
Most favourable goal (%)	70	70	70	70	70
Intermediate goal (%)	31	44	54	63	67
Least favourable goal (%)	22	26	29	32	36

Source National Solid Waste Plan, 2012

According to the Article 9 of this policy, the priorities of non-generation, reduction, reutilization, recycling, solid waste treatment, environmentally sound disposal shall be observed when managing solid waste. This Article emphasizes that technology for the energy recovery of urban solid waste may be used, provided that environmental feasibility are insured and an emissions-monitoring program approved by the relevant environmental authority had been implemented. The Article 54 mentions that in compliance with the provisions of the Article 9, final environmentally adequate waste disposal shall be implemented up to 4 years after the date of publication hereof.

At the states and municipalities level, there are various supports to develop plans for solid waste:

- Agreements with states to develop studies for regionalization and prepare Inter-municipal Solid Waste Plans since 2007.
- Publication of guidelines for the preparation of the Ministry of Environment's State Plans Solid Waste.
- Partnership with the British Embassy to issue guidelines to Municipal Plans.
- Public call from October, 21th 2011 to support the State Plans, Metropolitan Plans, Micro-region Plans, and Plans of selective Waste Collection Programs.

Table 3.6.8 summarizes the cost for the preparation of solid waste municipal, inter-municipal, and state plans within the framework of the Solid Waste National Policy.

Table 3.6.8 Analysis of support for Development of Solid Waste Plans

	Types of Plans	Number of Municipalities, Consortium or States	Cost for Preparation of Plans (R\$)
Custom Solutions	Solid Waste Municipal Plans	5,564	961,320,000
	Solid Waste State Plans	26	41,280,000
	Total	5,590	1,002,600,000
Solutions with associations of municipalities	Solid Waste inter-municipal plans	344	190,680,000
	Solid Waste State Plans	26	41,280,000
	Total	370	231,960,000

Source: MMA, 2011

Solid Waste Municipal Plan and State Plan have been required for the second part of 2012. Municipalities, which have implemented selective collection with the participation of waste collectors, and inter-municipal consortia, have the higher priority to have access to resources, incentives, and financing from the union for actions relating to solid waste.

The main responsibilities of Municipalities, specified within the Solid Waste National Policy, are as follows:

- Preparation and implementation of Municipal Solid Waste Plan,
- Implementation of the sustainable selective collection with scavengers (and composting systems),
- Elimination of the dumps.

3.6.3 Recycling Systems (Reverse Logistics)

Reverse logistics can be defined by a flow of surplus or unwanted material, goods, or equipment back to the firm, through its logistics chain, for reuse, recycling or disposal. In the reverse logistics deployed by the Solid Waste National Policy, the sector agreement and the shared responsibility for the life cycle of the product are two important concepts. The sector agreement is a contract to be signed by the government and manufacturers, importers, distributors, or dealers, aiming to implement the shared responsibility for the life cycle of products. The shared responsibility for the life of the products is a set of individualized and interconnected assignments of the manufacturers, importers, distributors and traders, consumers and holders of urban cleaning public services and solid waste management. It aims to minimize the generation and volume of solid waste as well as reducing the impacts resulting from the product life cycle to the human health and the environmental quality.

In the framework of the Solid Waste National Policy, reverse logistics have been deployed in the following product chains:

- Pesticides, their packaging and waste,
- Lubricating, their packaging and waste,
- Tyres,
- All sort of batteries,
- Several sorts of fluorescent lamps,
- Electronic equipment and their components (Waste Electrical and Electronic Equipment Directive).

A guiding committee is making decision for the reverse logistics implementation. It is a council of Ministries composed by MMA, MS, the Ministry of the Industry and Foreign Trade Development (MDIC), the Ministry of Finance (MF), and the Ministry of Agriculture (MA). Its structure is shown in Figure 3.6.1.

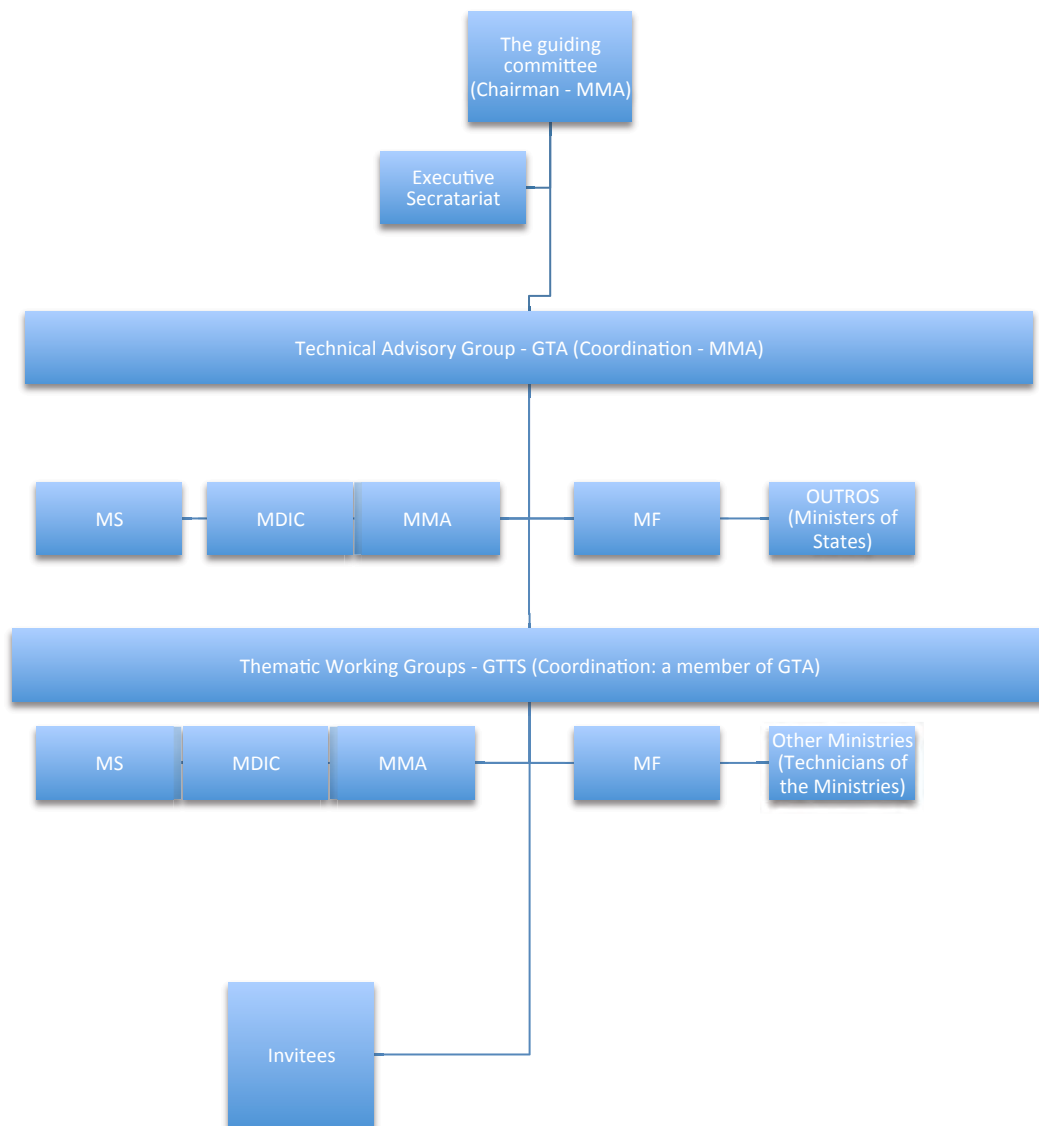


Figure 3.6.1 Structure of Guiding Committee for Reverse Logistics Implementation

Source: MMA, 2011

5 thematic working groups were created to study technical and economic feasibility of reverse logistic and write the edict calling for the development of the proposed sector agreement. The first meeting to initiate the work occurred on May, 5th 2011. The themes studied by these working groups are as follows:

- Disposal of Medicines coordinated by the Ministry of Health,
- Packaging in General coordinated by the Ministry of Environment,
- Packaging and Waste Lubricating Oils coordinated by the Ministry of Agriculture,
- Fluorescent lamps, lamps of sodium vapour and mercury and mixed light lamps

coordinated by the Ministry of Environment,

- Waste of Electric Electronic Equipment (WEEE) coordinated by the Ministry of Development, Industry, and Foreign Trade.

3.6.4 Waste Segregation Programmes

In the framework of the Solid Waste National Policy, waste segregation programmes, which will give an opportunity for scavengers to be appreciated and more integrated, are implemented. For example, there is a federal program to support municipalities to structure the selective collection, preferably with the inclusion of organizations of scavengers. Funds are transferred following a contract with the Caixa Economica Federal (CEF – A Federal Bank).

3.7 Noise and Vibration

3.7.1 Current Situation

The increasing number of living people and vehicles in big cities has led to the appearance of a new environmental subject in Brazil, i.e., noise pollution. In Brazil, the urban noise issue still has not obtained enough attention. However, some researchers have showed the problem of environmental noise in major cities such as Sao Paulo, Rio de Janeiro, Belo Horizonte and Porto Alegre. Regarding the vibration, no environmental standard exist in Brazil.

3.7.2 Relevant Laws and Organisations

Table 3.7.1 summarizes noise-related law and regulations of Brazil. Table 3.7.2 summarizes the classification of noise, based on ISO. Noise standards, implemented in Brazil, are established based on ISO (see Table 3.7.3).

Table 3.7.1 Laws relevant to Noise pollution

Name of the Law	Description
CONAMA Resolution 001/1990	Includes the problems of excessive noise levels in the control of environmental pollution. Defines nationwide criteria for noise emissions evaluation according to the ABNT (Brazilian Association of Technical Standards) and to the National Traffic Council (CONTRAN. Noise levels are considered acceptable, thus determined by ABNT: NBR 10151 - Assessment of the level of noise in populated areas to ensure the comfort of the community and NBR 10152 - Noise levels for acoustic comfort. The first set noise levels for outdoor, outdoors, while the second set noise levels for indoor environments. In noise control is considered the location, time and nature of activities broadcasters to match the performance of activities with the preservation of health and public peace.
CONAMA Resolution 002/1990	Establishes the National Education and Control Noise Pollution - Silence Program and empowers the State and Municipal Government to impose stricter limits on noise emission. This program aims to teach and educate the public and train technicians to receive complaints and take action to combat noise pollution, and encourage the production of equipment with lower noise intensity, being coordinated by the Brazilian Institute of Environment and Natural Resources (IBAMA)
CONAMA Resolution 001 and 002/1993	Considering that excessive noise causes damage to physical and mental health and particularly affects hearing and considering the need to reduce noise pollution in urban centers, whereas propelled road vehicles are major sources of noise in the environment, whereas the use of appropriate technologies and known, allows needs to control noise pollution. Considering the objectives of the National Education and Control noise Pollution has established noise limits for motor vehicles on acceleration and on condition that stopped.

Table 3.7.2 Noise Classification

Standard	Class	Descriptions
ISO 1996	Environmental noise	Noise from all sources, located near or distant (traffic noise, birds, machines, etc.).
	Particular noise	The noise source is under investigation. It is a component of ambient noise and can be identified and linked to a specific source.
	Residual noise	The ambient noise is not the particular noise. It is the noise in one place, under certain conditions, when the specific source of noise is eliminated.
	Initial noise	It is the noise at some point before changes occur. Ex: before the construction of barriers or implementing some industry.
	Background noise	Terminology used to describe the measured noise level when the specific source is not audible and sometimes has the value of a parameter of noise, such as L90.
ISO 2204/1973	Continuous noise	It is one whose change in sound intensity level is very small with respect to time. Noises are characteristic of liquid pumps, electric motors, gears, etc. Ex: rain, refrigerators, compressors, fans, etc.
	Noise floating	It is one that presents large variations of level versus time.
	Impulsive noise or impact	Have high levels of loudness in a very small time interval. Noises from explosions and impacts. Noises are characteristic of riveters, automatic printers, crushers, presses, etc.

Source ISO 1996, ISO 2204/1973

The NBR 10 151 (2000) specifies a method for measuring noise where, according to the characteristics of noise, corrections are set to the levels measured.

Table 3.7.3 Noise level limits (Maximum acceptable Leq*, dBA)

	Brazilian NBR 10151		World Bank	
	Day**	Night**	Day**	Night**
Urban/Residential area	50	45	55	45
Industrial Area	70	60	70	70

Note: *: Equivalent Noise Level, defined as constant noise levels with same acoustic energy as level of the real noise level non-stable, varying during the time of measurement.

** The NBR 10151 (2000) states that the day and night periods can be set by the authorities according to the habits of the population. However, the night period shall begin no later than 22:00 hours and should not end before 7:00 am. In the case of Sundays and holidays the end of the evening should not be earlier at 9:00 am.

Source CONAMA Resolution 001, 1990

A comparison between the fixed and the level of discretion standard as established by admissible indicates if the sound level is in the range tolerable or whether measures are needed to reduce it. Table 3.7.4 summarizes day and night time noise standards, implemented in Brazil.

Table 3.7.4 Level of evaluation criteria NCA Outdoor

Type of Daytime areas	Daytime (dB (A))	Night time (dB (A))
Areas of ranches and farms	40	35
Strictly urban residential area of hospitals or schools	50	45
Mixed area, mostly residential	55	50
Mixed area, a commercial and administrative	60	55
Mixed area with recreational vocation	65	55
Predominantly industrial area	70	60

Note: - If the ambient noise is greater than the table value, Oz takes the value of ambient noise ;

- The level corrected for a noise without special features is determined by the sound pressure level equivalent continuous (LAeq);

- When the impulsive noise has characteristics and impact level must be corrected measured maximum level plus 5 dB (A);

- When the noise level have tonal characteristics will be corrected LAeq plus 5 dB (A);

- For noise characteristics that present both impulsive or impact as tonal characteristics, the adjusted level should be determined by applying the above procedures and by taking the largest value found.

Source NBR 10151, 2000

3.8 Climate Change

3.8.1 Current Situation

(1) Temperature

Over the period 1960-2010 there was warming in the northern, eastern and southern regions of Brazil for both summer (December to February) and winter (June to August). There has been a general increase in winter temperatures averaged over the country, making the occurrence of relatively warm winter temperatures more frequent and cold winter temperatures less frequent. As for night time temperatures, the southern part of Brazil (the region where there is daily temperature data) show a decreasing frequency of cool nights and an increasing frequency of warm nights. The World Meteorological Organization (WMO) highlighted two events, the heat waves during 2006 and the extreme cold of 2010 as examples of extreme temperature events.

(2) Precipitations

Between 1960 and 2003 there has been a small increase in annual total precipitation over Brazil but variations are linked to natural inter-annual and decadal variability, rather than climate change. The WMO highlighted the 2010 drought and the April 2009 flood as two extreme precipitation events in Brazil.

(3) Carbon Dioxide Emissions

Figure 3.8.1 shows the time variation of nation-wide CO₂ emission loading of Brazil. As shown in this figure, the national CO₂ emission loading remains to be low until 1970s. Then, gradual increases started to occur around early 1970s. After 1990, there is a sharp increase in CO₂ emissions.

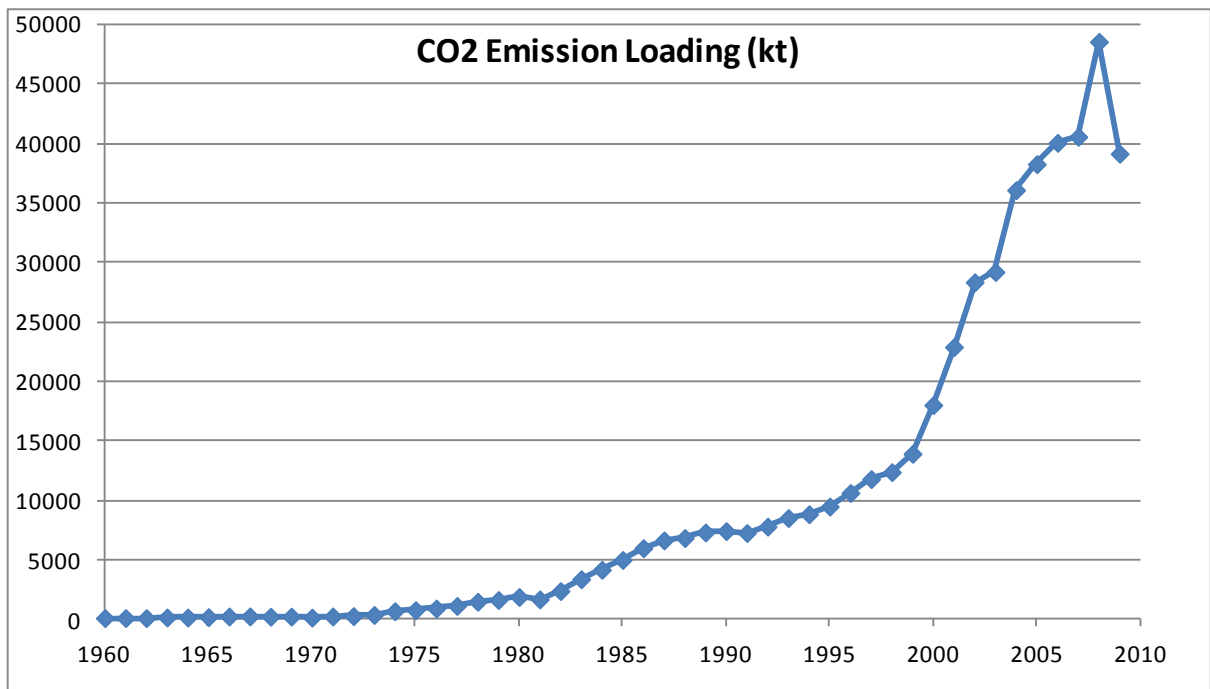


Figure 3.8.1 Annual Carbon Dioxide Emissions (kt) in Brazil, 1960-2009

Source: index mundi, <http://www.indexmundi.com/facts/brazil/co2-emissions>

3.8.2 Relevant Laws and Organisations

On the international level, Brazil ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and the Kyoto Protocol in 2002. The Brazilian agency in charge of coordinating the implementation of commitments under the UN Framework Convention on Climate Change is known as CIDES, the Inter-ministerial Commission for Sustainable Development (Comissão Interministerial para o Desenvolvimento Sustentável), through its

Climate Change Coordination Office, linked to the Ministry of Science and Technology. In addition to CIDES, which is in charge of preparing Brazil's National Communications for the UN Framework Convention on Climate Change, an Inter-ministerial Commission on Global Climate Change (Comissão Interministerial de Mudança Global do Clima), was created with the purpose of articulating the federal-governmental actions under the UN Framework Convention on Climate Change and subsidiary instruments to which Brazil is a party. On the national level, several decrees and laws are implemented to address the climate change (see Table 3.8.1).

Table 3.8.1 Laws relevant to Climate Change

Name of the Regulation	Description
Federal Decree 3515/2000	Established the Brazilian Forum on Climate Change (Forum Brasileiro de Mudanças Climáticas - FBMC) aiming to raise awareness and mobilize society to discuss and make decisions about the impact of gas emissions due to human activities intensifying the greenhouse effect.
Federal Law 12,187/2009	Sets forth the National Policy on Climate Change, through which the country undertakes to reduce greenhouse gas emissions by up to 38.9 per cent by the year of 2020.
Federal Decree 6263/2007	Established the Inter-Ministerial Committee on Climate Change (Comite Interministerial sobre Mudança do Clima – CIM), which is responsible for preparing the National Policy on Climate Change and the National Climate Change Plan.
Federal Decree 7390/2010 along with the Clean Development Mechanism	It provides for the creation of Sector Plans to apply actions, indicators and targets to reduce emissions and mechanisms to verify compliance. Sector Plans were established to enable the enforcement of the National Policy on Climate Change. It also promotes renewable energy generation and decrease of deforestation.

Source latinlawyer.com, Inter-Ministerial Committee on Climate Change

The President of the Republic heads the FBMC. Its members are Ministers of State, Presidents of Regulatory Agencies, and State Secretaries for the Environment, representatives from the Business Sector, Civil Society, Universities and Non-Governmental Organizations.

The Comite Inter-ministerial sobre Mudança do Clima (CIM) is coordinated by the Office of the President of the Republic, and consists of seventeen federal bodies and the FBMC. Basically, the CIM consists of the Ministry of Agriculture and Supply, the Ministry of Science and Technology, the Ministry of Defense, the Ministry of Education, the Ministry of Finance, the Ministry of National Integration, the Ministry of Health, the Ministry of Cities, the Ministry of External Relations, the Ministry of Mines and Energy, the Ministry of Agrarian Development, the Ministry of Development, Industry and Foreign Trade, the MMA, the Ministry of Planning, the Budget and Planning, the Ministry of Transport, and the Strategic Issues Secretary of the Presidency of the Republic.

The responsibility for the preparation, implementation, monitoring and evaluation of the National Plan on Climate Change was assigned to the Executive Group on Climate Change (Grupo Executivo sobre Mudança do Clima – GEx), under the auspices of CIM, which is coordinated by the MMA.

Alongside the consultations within the government itself, the Decree No. 6263/2007 created public consultation processes with the aim of guaranteeing transparency in the Plan preparation process and popular participation through the contributions of interested agents. The process included very important public consultations: the III National Conference on the Environment and the meetings of the Brazilian Climate Change Forum called ‘Sector Dialogues’.

3.8.3 Approaches and Efforts

(1) Clean Development Mechanism

Since the Kyoto Protocol was signed in 2005, there has been an increasing interest by companies and potential investors in designing projects aimed at the reduction of greenhouse gas emissions. As a non-Annex I country, Brazil’s involvement in the international climate change initiatives is through the Clean Development Mechanism (CDM).

Under the UNFCCC provisions, Brazil has cumulated so far 1,335,955,415 Certified Emission Reduction (CER) credits. However at present, Brazil does not have a legal framework regulating carbon emission trading. Therefore, CERs cannot be traded on Brazilian stock market because there is no law classifying CERs as securities. To stimulate the generation and sales of carbon credits, the Brazilian Market of Certified Emission Reduction was created in Brazil, in the Futures and Commodities Exchange (Bolsa Mercantil e de Futuros - BM&F), as an agreement between the BM&F and the Ministry of Development, Industry, and Trade. The authority that regulates this market is the Brazilian Securities and Exchange Commission (Comissão de Valores Mobiliários - CVM). This entity has already authorized the city of São Paulo to trade certified emission reductions generated at the Bandeirantes waste landfill on the BM&F.

A complete list of past and current CDM projects in Brazil is summarized in Appendix 7. The national authority responsible for authorizing and approving participation in CDM projects is the Brazilian Ministry of Science, Technology and Innovation. Many on-going and planned CDM projects in Brazil are expected to result in the emission reductions of approximately 400.482 Mt CO₂eq by 2020. Of the more than 300 proposed and active CDM projects, over half relate to biomass energy or methane avoidance, with hydroelectric projects also making up a significant share.

Concerning the governance of Brazil’s Clean Development Mechanism, Brazil’s focus on GHG-emission reductions and legislative compliance, rather than the sustainable development criteria of the Clean Development Mechanism, arises from, and aligns with, the confluence of Brazil’s environment–development discourses from Brazil’s 1964–1985 military dictatorship and its subsequent return to democratization. The Brazilian Inter-ministerial Commission on Global

Climate Change's regulatory behavior enables greater enforcement of socio-environmental criteria included in environmental licenses and otherwise arising from Brazilian environmental law, by withholding Clean Development Mechanism project status from projects that are not in compliance with the environmental licenses covering their main economic activity. This illustrates the on-going evolution of Brazilian environmental regulation to address broader elements of Brazil's environment–development discourses. Sustainable-development issues that are not addressed in environmental licenses are addressed as procedural issues rather than substantive issues, which align historically with similar evolving environment–development interfaces in post-1985 Brazil. As Brazil moves toward a post-2012 climate regime, the prominence of broader sustainable development issues in Brazil's 40(a) Compliance Assessment⁵ (or any similar assessment arising from any successor mechanism) will probably co-vary with the continued development of a multi-stakeholder dialog among a stronger, more informed Brazilian civil society, more capable local government actors and federal regulators, and generally as a result of increased institutional capacity among Brazilian regulators.

(2) National Plan on Climate Change

The Brazilian National Plan on Climate Change is an important milestone for the integration and harmonization of public policies, following the general guidelines of the National Policy. The Plan is based on the work of the Inter-ministerial Committee on Climate Change and its Executive Group, established in 2007 to fulfill that purpose, in collaboration with other institutions such as the Brazilian Forum on Climate Change, Inter-ministerial Commission on Global Climate Change, the III National Conference on the Environment and the State Forum on Climate Change, and civil society organizations.

1) Principles

According to this plan, to stimulate a better performance in the economic sectors, based on best practices will be a way to reduce the carbon content of Brazilian GDP. Furthermore, efforts are also required in the area of energy efficiency and energy conservation, as a way of reducing consumption, preventing additional electricity generation and reducing the emissions of greenhouse gases. The main actions to manage this stimulation and reduction of GHGs are as follows,

- To implement a National Policy on Energy Efficiency that will result in a gradual energy saving up to 106 TWh/year to be reached in 2030, avoiding emissions of around 30 million tons of CO₂ in that year.

⁵ Domestic approval of Kyoto Protocol Clean Development Mechanism projects pursuant to paragraph 40(a) of the Marrakesh Accords, whereby the host country Designated National Authority must issue a Letter of Approval certifying that the proposed Clean Development Mechanism project activity assists the host country in achieving sustainable development.

- To increase the consumption of sustainable charcoal to replace coal in steel plants, mainly through the encouragement of forestation in degraded areas.
- To replace one million old fridges per year, for 10 years, with the collection of 3 million t CO₂ eq/year of CFCs (gases that also deplete the ozone layer).
- To encourage the use of water solar power heating systems, reducing electricity consumption in 2,200 GWh per year by 2015.
- To replace refrigerant gases, which will make possible to avoid emissions of 1,078 billion t CO₂ eq of HCFCs between 2008 and 2040 according to estimations;
- To phase out the use of fire for clearing and cutting of sugarcane in areas where harvesting mechanization can take place.
- To give incentives for sustainable practices concerned with the recovering of a large part of the current 100 million ha of degraded pasture; carbon sinks via crop-livestock integration, agro-forestry or; adoption of zero tillage system and reduction in the use of nitrogenous fertilizers; and the organic enrichment of pasture to reduce methane emissions by cattle raising.

Brazil will keep the high share of renewable energy in the electric matrix by achieving the following actions to mitigate GHGs,

- To increase electricity supply from cogeneration, mainly from sugarcane bagasse, to 11.4% of the total supply in the country, in 2030, corresponding to 136 TWh;
- To reduce non-technical losses in the electricity distribution at a rate of 1,000 GWh per year over the next ten years;
- To add new hydropower plants to the system in accordance with the schedule of works of the 10 Year Energy Plan (2007-2016);
- To increase the share of energy from wind and sugarcane bagasse in the electric matrix through specific projects of renewable energy;
- To seek for the expansion of the national photovoltaic industry and the use of this energy source in systems that are isolated.

Brazil will encourage the sustainable increase in the share of biofuels in the national transport matrix and also work towards the structuring of an international market of sustainable biofuels. In order to achieve that goal, the following actions will be achieved:

- To encourage industry to achieve an average annual ethanol consumption increase of 11% in the next 10 years;
- To do researches on biodiesel;
- To implement a National Agro-Energy Plan aiming to carrying out research, development, innovation and the transfer of technology to guarantee agro-energy chains sustainability and competitiveness;

- To stimulate an international ethanol market by cooperating with other countries with a high potential for growing sugarcane to expand the offer of ethanol, making it more stable and balanced.

Brazil will also seek for sustained reduction deforestation rates, in all Brazilian biomes, in order to reach zero illegal deforestation and will eliminate the net loss of forest coverage by 2015. Therefore the main actions will be:

- To implement the National Public Forests Register to identify public forests to be protected, preserved and managed.
- To implement the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon region and similar plans in other biomes to reduce deforestation, involving partnerships between federal bodies, state governments, city governments, civil society organizations and private sector.
- To implement the Deforestation Monitoring Program for the Caatinga, Cerrado, Mata Atlantica, Pampa and Pantanal Biomes.
- To strengthen the environmental enforcement.
- To raise financial resources through the Amazon Fund nationally and internationally for the reduction of deforestation, sustainable use and conservation, especially in the Amazon forest.
- To finance actions through the Climate Fund to prevent deforestation.
- To strengthen the productive chains for Non-timber forest products.
- To revise the current banking requirements to make forestation and reforestation activities more attractive, including areas for charcoal production.
- To stimulate the recovering of degraded areas that belong to legal reserves or areas of permanent preservation.
- To provide information about all of the country's forests through the National Forest Inventory.
- To develop forestry products for fuel application.
- To give a concession of public forests for the management and exploitation of forestry products and services in a sustainable form.
- To prevent the use of illegal timber in the building industry.

Finally, Brazil will strengthen inter-sector actions concerned with the reduction of the vulnerabilities of populations and will identify the environmental impacts resulting from climate change and stimulate scientific research that can trace out a strategy that can minimize the socio-economic costs of the country's adaptation.

2) Reducing Emissions from Deforestation and Forest Degradation (REDD) program

At the domestic level, Brazil has been actively developing practical experience with REDD, and is currently developing a legal framework for REDD's inclusion in a Post-Kyoto Framework. Brazil currently has six REDD projects on-going. One of the most visible projects is the "Juma Sustainable Development Reserve Project", which was created in 2006. The project is located in the State of Amazonas, which is suffering from heavy deforestation due to increasing rates of agriculture and cattle ranching. The area has been established as a Protected Area (PA) for Sustainable Use (Unidade de Conservacao de Uso Sustentavel), and was created as a financial mechanism for compensating REDD activities. The resources raised from the sale of carbon credits will permit the Amazonas Government to implement measures necessary to monitor the forest within the project site, combat illegal logging, and improve the welfare of local communities.

Brazil advocating a voluntary fund-based approach as a forest protection tool, REDD projects would receive direct financing under the UNFCCC, based on national policy drawing upon international funds donated by industrialized nations. Contributors would not be eligible for carbon credits that could be used to meet emission reduction obligations. Unlike the direct-financing approach taken at the federal level, the State of Amazonas aims to finance its deforestation reduction initiatives through the international marketing of carbon sequestration credits.

3) Past Greenhouse gas key mitigating measures still in force

a) Production and use of ethanol and sugar-cane bagasse

The alcohol program was a key element of Brazil's energy policy for more than a quarter-century. Brazil first launched its National Alcohol Fuel Program (PRO-ALCOOL) in 1975 to promote ethanol production as a substitute for gasoline. Ethanol production was justified to reduce dependence on oil imports and the environmental impacts of energy use, and to create domestic jobs and income. The government offered a variety of incentives including low-interest loans to build distilleries, ethanol purchase guarantees, favorable pricing relative to gasoline, and sales tax reductions. Today, ethanol is used in Brazil mainly as a gasoline additive. About one-quarter of gasoline sold in Brazil today contains ethanol in a blend required by law to control local air pollution. Alcohol fuel in 2000 still avoided 5.4 million tons of carbon emissions.

The use of sugar-cane bagasse is a special case of renewable energy use in Brazil. Bagasse is a waste by-product of alcohol production and is used in combined heat and power (cogeneration)

plants. In 2000, bagasse used for power generation reduced carbon emissions in Brazil by almost 1 million tons.

b) Electric Conservation

Power supply crisis, brought on by a long drought that dramatically reduced hydroelectric power generation, forced the government to quickly devise incentives for expanding electricity supplies. In May 2001, Brazil faced nationwide power rationing intended to avert major blackouts and save valuable water in severely depleted reservoirs. Households were required to reduce consumption by 20% or face significantly higher rates or even electricity cuts of up to three days. Industrial and commercial users were required to reduce consumption by 15-20 %, and to postpone any major expansions that would require additional electric power.

The government created the National Electricity Conservation Program (PROCEL) in 1985. PROCEL funds or co-funds a wide range of energy efficiency projects focused on information, utility demand-side management programs, direct implementation of efficiency measures, and technical support. PROCEL long advocated mandatory efficiency standards for household appliances, lighting products, and motors; appliance and lighting standards were enacted in 2001.

c) Alternative Electric Sources

Emergency power-supply program launched in 2000 helped increase gas-fired cogeneration capacity, encouraging gas use instead of fuel oil. In 2000, the reduction in carbon emissions due to industrial fuel switching to gas amounted to 0.4 million tons.

In 2002, the Program for Incentive of Alternative Electric Energy Sources (PROINFA) was launched. This program sets an overall goal for the production of 10% of the total electricity from non-hydroelectric renewable sources by 2022, in two phases. The first phase is to achieve 3,300 MW of renewable energy—divided equally among biomass, small hydro and wind. This will be achieved through long-term power purchasing agreements between Eletrobrás and independent power producers, as well as fiscal incentives for each type of renewable energy.

d) One-litre Engine Tax Incentive

Tax incentive, introduced in 1993 to encourage the use of less powerful cars (cars with engines less than 1 liter in size), reduced emissions by nearly 2 million tons of carbon per year. For qualifying cars, the so-called Tax on Industrialized Products was cut from 25 % to 10 %. This policy was meant to encourage production of more efficient automobiles and make them accessible to lower-income buyers. By 2001, almost three-quarters of domestic sales of new

automobiles consisted of one-liter engine automobiles. Assuming that the tax reduction did not lead to a net increase in car sales, and that one-liter engine cars replaced more powerful automobiles, the policy saved nearly 2 million tons of carbon in 2000.

Chapter 4 Social Environment

4.1 Overview

According to World Bank, the estimated population of Brazil was 198.7 million in 2012¹. The average rate of the annual population growth between 2009 and 2013 was 0.9 %. Its population density was 23 people/square km (national average). Its Gross Domestic Product (GDP) was \$2.253 trillion. UNESCO Brasilia office² says that the increasingly accelerated rate of economic growth in Brazil may lead the country to become the fifth largest economy in the world in the next decade. In addition, with its GDP expected to grow between 5.5 % and 6 % in the next few years, Brazil is structurally consolidating as an emerging country and regional leader. However, there are other indexes hidden behind economic development that show a country which is still bound to its past. Despite lifting approximately 25 million Brazilian citizens out of poverty, there are still a further 54 million that need assistance. This is reflected in the Human Development Index (HDI), where Brazil is ranked 73rd amongst 169 countries. The same can be noted on the income distribution indicator (Gini per capita), which ranks Brazil in 75th position among the 183 countries surveyed.

Beyond material wealth and economic growth, rich Brazilian diversity (regional, cultural and environmental) offers unique opportunities and challenges related to fundamental elements of citizenship, such as access to basic health care, education, housing, safety, sanitation and drinking water. However, while on average, Brazil will attain the Millennium Development Goals by 2015, it will take most states in the North and Northeast regions a few more decades to reach the same development level. More equitable development between regions requires better territorial planning and further qualification of the state and municipal public sector. Today, over 80 % of the Brazilian population resides in urban areas, with 45 % living in metropolises, where a great divide between the rich and poor prevails. According to UN-Habitat, approximately 100 million people live in slums in Latin America and the Caribbean. There are 1.96 million homes which are considered inadequate in Brazilian slums (Source: Brazil. Ministry of Cities, 2010).

The long expected increasing speed of transformations after decades of null or inexpressive economic growth, has transformed into pressure on the country's infrastructure and the environment; new forms of territorial occupation, with corresponding social, cultural and environmental impacts; re-location of traditional populations; a deficit in educational provisions, faced with a demand for a qualified workforce at all levels; technological changes, which radically alter forms of expressing social and cultural diversity, as well as the conditions for access to information.

¹ World Bank. <http://data.worldbank.org/country/brazil>

² Search in UNESDOC, <http://unesdoc.unesco.org/images/0021/002123/212357e.pdf>

Main religions are Christianity (majority Roman Catholic, also Pentecostal)³, Afro-Brazilian religions (Candomblé, Umbanda), Judaism and indigenous religions. Minority groups include Afro-descendants, Asian, indigenous groups and others (UN, 2011, see Chapter 1 for pie chart of ethnic minorities).

Official language is Portuguese. It is spoken by nearly 100 percent of the population. The only exceptions are some members of Amerindian groups and pockets of immigrants, primarily from Japan and South Korea, who have not yet learned Portuguese. The principal families of Indian languages are Tup, Arawak, Carib and others.

Unlike most of Latin America, Brazil was colonized by the Portuguese. Initial relations with the indigenous population were friendly but colonists eager to exploit trade in wood and sugar soon provoked conflict. The massacres and slavery which almost exterminated the coastal Tupi initiated a pattern repeated over the next 500 years. Rival colonial powers, France and the Netherlands, exploited existing hostilities between indigenous groups. Colonists introduced dysentery, smallpox, influenza and plague. Epidemics of these European diseases swept through the *reduções* (settlements) instituted by Jesuit missionaries, killing many thousands of indigenous and tribal peoples within a few decades. According to the NGO Survival International the indigenous population of Brazil is less than 7 % of what it was in 1500. It is thought that during pre-colonial times there existed up to 1,000 distinct tribes, while today only an estimated 197 of these remain⁴.

4.2 Regulations and Policies

4.2.1 Outline

There are several legal instruments which have had positive impacts on the social policy in Brazil⁵. For instance, the Organic Social Assistance Law (LOAS) was approved in 1993. Moreover, a bill of law to introduce a minimum income program was presented in 1991 by Senator Eduardo Suplicy, of the leftist party PT. The proposal of the Programa de Garantia de Renda Mínima (PGRM) consisted in a negative income tax to every individual over 25 years of age with a monthly income less than twice the minimum wage, which was used as a poverty line. In order to prevent incentives to reduce the individuals' labour supply, the benefit would correspond to just 30% of the difference between the minimum wage and the individual's income. Furthermore, because of budgetary restrictions, the PGRM would begin with the elderly and then gradually be extended to the younger population.

³ Minority Rights Group International, <http://www.minorityrights.org/?lid=5289#sthash.nncsrLfm.dpuf>

⁴ World Directory of Minorities, <http://www.minorityrights.org/?lid=5289&tmpl=printpage>

⁵ Pero V. and D. Szerman, *The New Generation of Social Programs in Brazil 2005*.

The PGRM, although not original, was to introduce several innovations in the Brazilian social protection system. First, it would benefit informal workers, breaking with previous trends of assisting only formal workers. Second, it was the first proposal of cash transfers targeted to the poorest, forming a safety net that protected beneficiaries from both macro- and microeconomic shocks. Third, it was aimed to cover the entire poor population and not just interest groups. Finally, it was openly aimed to fight income inequality, a goal which had never been directly faced by policy makers in Brazil.

4.2.2 Domestic Laws

According to the 1988 Constitution⁶, The title VII, “Fundamental Rights and Guarantees” of Chapter I mentions about the Individual human rights. Among developing countries, Brazil is increasingly seen as a model for social development⁷. Most of social security-related codes are based on this 1988 Constitution. Tables 4.1.1 and 4.1.2 summarize major social security-related legal codes and governmental organizations in Brazil, respectively.

Table 4.2.1 Social Security-related Key Legal Code in Brazil

Legal codes	Descriptions
Constitution (1988)	The 1988 Constitution created a social security system comprising public systems covering health insurance, social insurance and various social assistance programmes.
Social Security Law (1991)	This law have regulated a new social insurance law in Brazil since then, being separate from the compulsory contributions of wage workers.

(Source: Delgado G.C. 2012)

Table 4.2.2 Major Social Security-related Governmental Organizations in Brazil

Organization	Major Functions
Ministry of Social Development and Fight against Hunger (MSD)	Established in 2004 with the goal of promoting the social inclusion, food and nutrition security, full social assistance and a minimum citizen income to the families living in poverty.
Ministry of Social Security	Provides general supervision of pension system.
Ministry of Health	Provides general supervision of the Unified Health System.
Ministry of Labour and Employment	Specializes in promoting labour and employment sectors through policies and regulations.

(Source: Federal government of Brazil, http://en.wikipedia.org/wiki/Federal_government_of_Brazil)

Among the government organization, listed in table above, Ministry of Social Development and Fight against Hunger (MSD) is the most important ministry for the protection of basic human right. More detailed descriptions for this ministry are summarized in next section.

⁶ Superior Electoral Court, <http://english.tse.jus.br/arquivos/federal-constitution>

⁷ World Politics Review, <http://www.worldpoliticsreview.com/articles/13240/a-new-contract-brazils-dual-social-protection-system>

4.2.3 Ministry of Social Development and Fight Against Hunger: Key Organization for Protection of Basic Human Rights

The Ministry of Social Development and Fight against Hunger (MSD) was created in January 2004, by President Luiz Inácio Lula da Silva, with the goal of promoting the social inclusion, food and nutrition security, full social assistance and a minimum citizen income to the families living in poverty. In order to achieve those goals, the Ministry implements numerous programs and public policies for social development, manages the Social Assistance National Fund (SANF) and approves the general budgets of the Industry Social Service (SESI), of the Commerce Social Service (SESC) and the Transport Social Service (SEST).

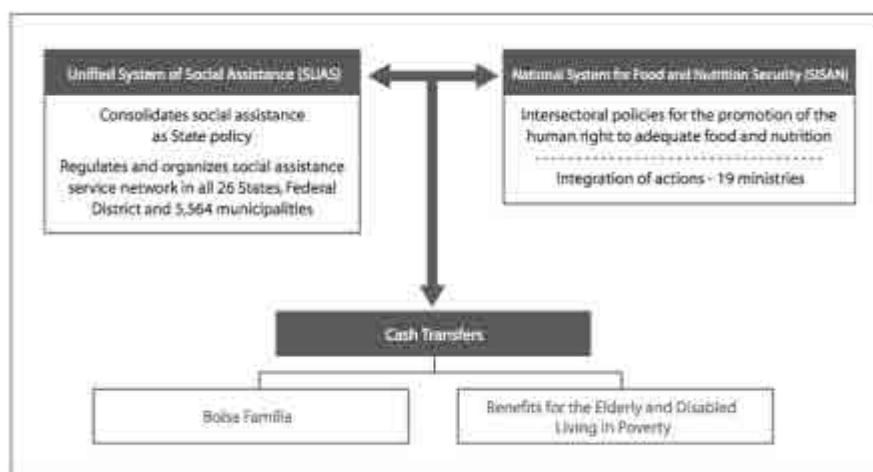
Through the direct cash transfer programs, such as Bolsa Família (to be described later), MSD provides citizenship and social inclusion to the beneficiaries, which are committed to health and education activities. The Ministry also carries out structuring, emergency and sustainable actions of fight against hunger, by food production and distribution actions, family agriculture promotion, regional development and nutritional education, respecting the Brazilian cultural diversity. The Ministry also strives to consolidate the right to social assistance throughout the national territory and to bring agility to the transfer of federal government funding to the states and municipalities.

Its achievements over the past two decades are impressive. The share of the population living in extreme poverty fell from 16.4 % in 1995 to 4.7 % in 2009. Inequality as measured by the Gini coefficient fell more than 10 % in the same period, to 0.53, where 0 represents perfect equality of income distribution and 1.0 perfect inequality. Growth has been an important driver for these trends, particularly because over the past decade Brazil's growth has been distinctly pro-poor. Personal income among the poorest 10 % of the population has grown more than twice as fast as that of the wealthiest 10 %. It is not surprising that low- and middle-income countries look to Brazil for inspiration. Social policies, and especially social protection policies, are the key to explaining Brazil's successes. Education and health reforms initiated in the mid-1990s raised public expenditure per student and created a national health care system. In terms of social protection, the policy focus has been on reaching a majority of the population left outside of established social insurance schemes. This has been achieved through a significant expansion of social assistance programs providing income transfers to families in poverty.

The flagship program, Bolsa Família Program (BFP: Family Grant Program), links cash transfers to school attendance and primary health care among participating families. Studies show that social assistance programs have contributed significantly to the decline in poverty and inequality in Brazil. However, these developments have resulted in a dual social protection system, with social insurance covering one half of the population and social assistance covering the other half.

Since its inauguration in 2004, MSD has played an important role in broadening social protection and integrating social policies and their contribution to the reduction of poverty and inequality in Brazil (see Table 4.2.1 and Figure 4.2.1). Nowadays, social protection is important not only to guarantee social rights but also to foster economic performance.

Figure 1 | Areas encompassed by the Ministry of Social Development and Fight against Hunger.



Source: Ministry of Social Development and Fight against Hunger, 2010.

Figure 4.2.1 Area encompassed by the Ministry of Social development and Fight against Hunger

Source: ILO, <http://www.ilo.org/gimi/gess/RessourceDownload.action?ressource.ressourceId=24362>

Table 4.2.3 Level of Complexity of Social Assistance

Social Assistance Services	
Basic Social Protection	Special Social Protection
<ul style="list-style-type: none"> • Social Assistance Reference Centre (CRAS) <ul style="list-style-type: none"> - In 2010, 3,919 CRASs co-financed by MDS in 3,187 municipalities (70% of Brazilian municipalities); • Comprehensive Family Care Programme (Programa de Atenção Integral à Família, PAIF); • Socioeducational Services for Adolescents (ProJovem Adolescente); • Entrance door into the social protection network of SUAS. 	<ul style="list-style-type: none"> • Specialized Social Assistance Reference Centre (CREAS) <ul style="list-style-type: none"> - 2010: 1,235 CREASs in 1,014 municipalities; • Protection and specialized attention to families and individuals; • Child Labour Eradication Programme (Programa de Erradicação do Trabalho Infantil, PETI); • Programme for Fighting Sexual Exploitation of Children and Adolescents; • Social protection services to victims of violence, mistreatment and other violations of rights.

Source: National Secretariat for Social Assistance (SNAS)/MDS, Brazil, 2010.

4.2.4 Bolsa Família Program⁸

(1) Outline

The Bolsa Família Program (BFP: Family Grant Program) is a conditional cash transfer policy that was launched in October 2003 and instituted by federal law. Its main objectives are to transfer income to the poorest families so as to combat hunger and poverty as well as to promote these families' access to health, education and social-welfare public services. Poor families are those households whose per capita monthly incomes range from US\$ 41.18 to US\$ 82.36; the extremely poor families' per capita monthly income is below US\$ 41.17.

Over the last several years, the Bolsa Família programme has turned out to be one of the most important strategic axes for the integration of policies and actions that are part of the Brazilian social protection network (see Figure 4.2.2). The Unified Registry for Social Programmes of the Federal Government (Cadastro Único para Programas Sociais do Governo Federal, CadÚnico) is an articulated set of procedures, techniques and capacities for registering and updating socio economic information about families in poverty. It contains the database on families earning no more than half the Brazilian minimum wage per capita.

⁸ OECD, <http://www.oecd.org/els/soc/48227030.pdf#search='Social++Development+Brazil'>

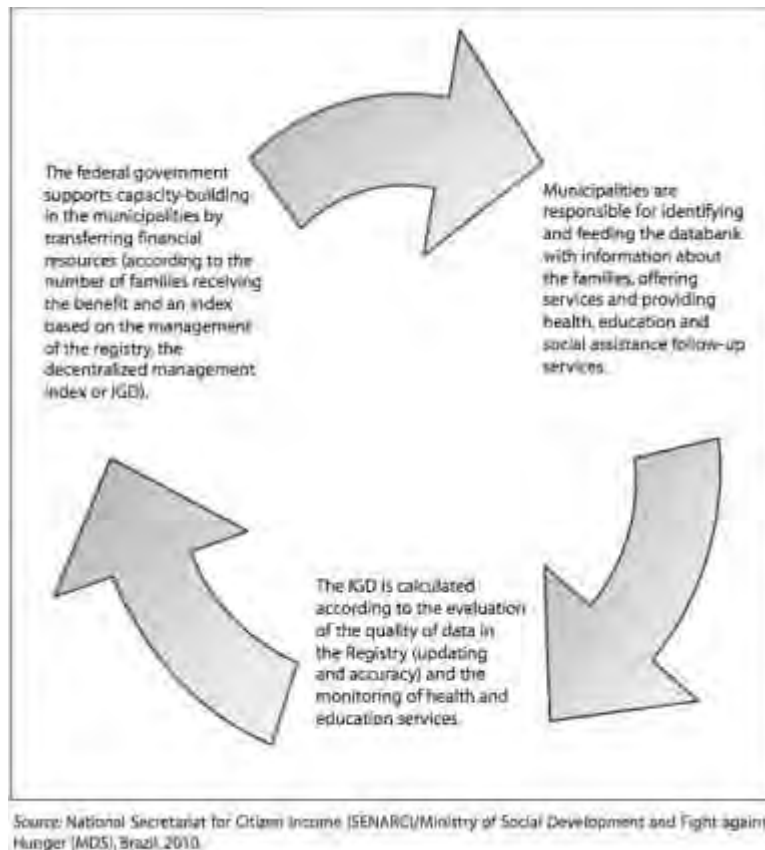


Figure 4.2.2 Bolsa Familia: Roles and responsibilities in the operation of the Unified Registry for Social Programmes of the Federal Government (CadUnico)

The BFP aspects which differ from other conditional cash transfer (CCT) schemes are,

- Decentralized organization and implementation;
- Cooperation among Government levels;
- Coordination among agencies;
- Conditionality as a tool for:
 - 1) achieving families' commitment with attendance to health and education services;
 - 2) enforcing the supply of services for the poor population (rights);
 - 3) identifying poor families' vulnerabilities
- Focus on the family rather than on its individual members;
- Free use of financial benefits;
- Funding of financial benefits: Federal Government budget.

Table 4.2.4 summarizes the conditions monitored by BFP.

Table 4.2.4 Conditions monitored by the Bolsa Familia Program

Area	Conditionality	Target
Health	Following vaccination calendar, children's growth and development	Children under 7 years of age
	Pre-birth and nursing health care	Pregnant women and nursing mothers
Education	School registration and monthly attendance (minimum 85%)	Children and teenagers between ages 6 and 15
	School registration and monthly attendance (minimum 75%)	16- and 17-year-olds
Social protection	Socio-educational and community activities (Child Labour Eradication Programme)	Children up to 15 years of age

Source: National Secretariat for Citizen Income (SENARC)/MDS, Brazil, 2009.

BFP's main target are families with per capita income of 1/2 minimum wage (R\$ 320.00) up to its three-times minimum wages (R\$ 960.00). Currently, there are 19.5 million households enrolled in CADUNICO; approximately 13 million are beneficiaries of BFP. Its purpose is to identify the characteristics of poor families and their individual members through the Social Identification Number (NIS); producing socioeconomic diagnosis of low-income families in Brazil, serving as an input for public policies in all levels of government.

Types of information about families enrolled are characteristics of household, family composition, civil identification, educational level, employment status, labour market situation of each family member, income and total household spending. Its transparency and control are periodically audited by crossing administrative databases of the federal government; biennial review of the socioeconomic situation of families registered; control by outside agencies and social control agencies.

(2) Program Implementation

Municipal managers are responsible for identifying and registering of families, as well as offering services/support for the families in areas of health, education and welfare; State Government managers are responsible for providing support to municipalities in the implementation of BFP.

The federal government supports states and municipalities through transfers calculated by the number of families supported by BFP and indexes of performance for municipal and state Governments- the Índice de Gestão Descentralizada (IGD, Decentralized Management Index)

and the Índice de Gestão Descentralizada Estadual (IGDE, Index of Decentralized Management for States). Both IGD and IGDE are calculated from indicators of the quality of the CADUNICO and the monitoring data of conditionality of the health and education.

(3) BFP Outcomes

Followings are major outcome of this BFP

- Reduction in Income Inequality
 - 21 % of the reduction achieved in income inequality was due to BFP (2004-2006).
- Reduction of Extreme poverty
 - BFP explains 18% of the reduction in the poverty gap and a quarter of the reduction in the square poverty gap (from 5.9 % to 4.6 %)
 - In 2009, 4.3 million out of 12.4 million beneficiary families have crossed the extreme poverty line (US\$ 41.18 per capita monthly) by receiving the financial benefits
- Impact of the financial benefits over the per-capita monthly income:
 - Median increase of income: 48.7% (from US\$ 28.64 to US\$ 42.60), which allows families to cross the extreme poverty threshold
 - Increase of 60 % in the monthly per-capita income in North and Northeastern areas
- Impacts on health:
 - Increase of child immunization rates (15-25 %, according to the vaccine).
 - Beneficiary pregnant women have 1.5 as many pre-natal doctor attendances as non-beneficiaries with the same social and economic profile
 - Probability of being born full term is 14.1 % higher for children in families that receive the benefit.
- Impacts on education:
 - Increase of 4.4 % in school attendance of 6-17 year-old children
 - Increase of 6 % in school promotion of 6-17 year-old beneficiary children
 - Bolsa Familia students show lower drop-out rates than students of public schools

4.3 Protection of Rights for Socially Vulnerable

4.3.1 Poverty

The level of poverty in Brazil is well above the norm for a middle-income country⁹. Within Brazil, there are wide disparities in the extent of poverty. More than half of all poor Brazilians live in the Northeast. In spite of urbanization, rural and urban areas contribute equally to national poverty. Poverty disproportionately affects the young.

Poor rural households are concentrated in the Northeast. The household head is illiterate (frequently even if he attended school) and works in agriculture. About half are smallholders or sharecroppers. The rest are employees or temporary workers. Poor households are large--they

⁹ World Bank,
<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTPA/0,,contentMDK:20206734~menuPK:443285~pagePK:148956~piPK:216618~theSitePK:430367,00.html>

have nearly twice as many children as the better-off. Access to utilities is rare. Poor urban households are evenly dispersed between large cities and small towns; 40 % live in the Northeast. They have more young children than wealthier households and spouses are not likely to participate in the labor market. The household head tends to be young, does not have a labor card, and most commonly works in services. Many are self-employed. A quarter of these household heads are illiterate; about half attended school for four years or less. These households have significantly less access to water and sanitation services than do better-off urban households.

Economic growth reduced poverty in the 1970s because formal employment expanded and wages rose. However, in the 1980s, recession hit the private sector, and the government was the engine of growth in the "boom" years. The impact on the poor is reflected in the growing informality of the labor force and negligible income growth. Macroeconomic instability lowered average income for the poor and hurt the poorest the most. Although income declined over the 1980s for all income groups, it fell most for those at the bottom--in contrast to the 1970s when those at the bottom and the top shared equally in the gains from growth. Price stability must be sustained in order to resume progress in poverty reduction. The poor stand to gain from lower inflation, through lower inflation taxes and transaction costs, and indirectly through high growth and wages associated with a stable economy. Second, one strength of the economy is that there is considerable labor market flexibility and job generation. Thus, there is no compelling rationale for introducing public employment generation programs in most areas of Brazil to reduce poverty. There would be much greater payoff from reducing informal in favor of formal sector employment, for example, by reducing the high level of payroll taxation. The removal of barriers to entry and of incentives to evade taxes and regulation would also begin to incorporate informal activities into the formal sector. The combined effect of these changes would be to raise the real wages of unskilled labor--the main asset of the poor. Third, few of the poor are formal workers. Policies geared explicitly to workers currently in the formal sector--an increase in the minimum wage, for example--are unlikely to benefit the poor. Although agriculture has performed well in Brazil, there has not been a commensurate reduction in rural poverty. The major reason is that the benefits of agricultural programs in Brazil were captured in the form of high prices for land, which is very unequally distributed. Recently the government's strategy for rural development has changed. It has reduced taxation on agriculture, and states play a greater role in determining their development strategies. In addition, the government is encouraging small-scale activities selected by beneficiaries. These changes seem likely to improve the welfare of the rural poor and to lead to more pro-poor rural development.

Brazil spends large sums of money on social programs. However, this has not translated into improved social indicators or poverty alleviation. In part, this is because the distribution of the benefits of public social spending in Brazil is pro-rich. The bottom quintile receives only 13 % of total benefits, compared to 24 % for the top quintile. The implication is that simply

increasing social spending will do little to alleviate poverty. Rather, the priority is to restructure spending across programs and improve the administration and increase the efficiency of social spending. For example, the share of spending for primary education and nutrition programs for young children should be increased. The data show that many public social institutions--including schools--only partially reach the poor.

Nutrition assistance does not adequately reach the most needy population - young children and the residents of the Northeast. The poor do not capture much of the benefits from social security, which is not really designed to reach them. However, it does have a negative effect on them. Recently the government has cut health spending in order to finance social insurance benefits, shifting resources from a progressive to the least progressive component of social expenditures. The distorted employment effects from high payroll taxes--which account for virtually all contributions--are adverse and significant and hit the poor the hardest.

4.3.2 Indigenous Peoples and Ethnic Minority Groups

The 1988 Constitution along with the Law 7716 of 1989 and the Law 9459 of 1997 includes indigenous and ethnic minorities rights and criminalizes acts of racism with high penalties of imprisonment to protect the existence of minorities. More detailed descriptions regarding the protection of right for indigenous peoples and ethnic minority groups are summarized in Chapter 7 of this study report.

4.3.3 Gender

The UN Office on Drugs and Crime (UNODC) reported that Brazilian women continued to be among the primary victims of international sex trafficking to Europe. The typical victims were darker-skinned women between 15 and 27 years of age.

Brazil's success in reducing poverty and income inequality has been widely reported in recent years¹⁰. What is less known is that there has also been progress in lessening gender inequality in past two decades. Illiteracy rates for women 15 years old and above came down from 20.3 % in 1991 to 9.8 % in 2008. The share of the female labour force with tertiary education increased from 7.4 % in 1992 to 11.9 % in 2008, and now is higher than males. Government policies – some of them implemented in cooperation with the private sector - have also been addressing needs of mothers, providing health care before and during pregnancy and at birth, and child care and education. On gender-based violence, the enactment of the Maria da Penha Law has already brought some results.

¹⁰ World Bank, <http://blogs.worldbank.org/growth/gender-equality-pays-brazil>

Notwithstanding these milestones, a lot remains to be done. For instance, gender gaps in access to formal employment and market income still persist in Brazil. Even though there has been an increase in the share of women employed in the non-agricultural sector, their comparative advantage in education has not been reflected in relative market wages—despite the average higher skill level of the female labor force. In 2008, women's wages were only 84 % of men's, and the gap increases at higher levels of education. Among those with 12 or more years of schooling, women earned merely 58 % of men's salaries. For the most part, the wage gap appears to reflect discriminatory practices and social norms. Brazilian women, even those working full time, continue to bear the brunt of time allocated to family chores.

In that regard, it is worth recalling how the World Bank's World Development Report 2012: Gender Equality and Development highlighted multiple channels through which economic growth and social welfare can benefit from lessened gender inequality. For example, think of the well-established evidence that babies tend to have more height and weight when women have more bargaining power over household income, with obvious consequences in terms of health and labor capacity of the adult population.

In the case of Brazil, Pierre-Richard Agénor and I have recently illustrated the impacts of lowering gender inequality on raising economic growth, developing a macroeconomic model with which one can simulate results from specific policies. Suppose for instance that the government successfully implements antidiscrimination laws that lead to a full elimination of gender bias against women in the workplace. Using Brazil's data, our model-based calculations suggest that an “equal work, equal pay” policy could add up to 0.2 percentage points to the country's annual gross domestic product (GDP) growth rate. This is just the direct effect of increases in women's “take-home” pay, not considering other effects on the allocation of talent and the production of human capital.

It is surprising how lessening gender inequality can boost economic growth through the range of mechanisms. Thinking of investments in infrastructure, it is needed currently in Brazil. Many analysts have already pointed out several ways by which more and better infrastructure in Brazil would lift growth from its current pace, by reducing waste of time and resources on production and transportation. What may have been less realized is its effect on growth lower gender inequality. More and better access to rural roads, water, power grids, and others would reduce mothers' time allocated to household chores and raise time allocated to market work, human capital accumulation, and child rearing. The latter is also productive; it leads to improved health in both childhood and adulthood. Crucially, the increase in time devoted to human capital accumulation raises women's bargaining power, which translates into a higher family preference for girls' education and children's health, an increase in the average share of family income spent on children, and a lower preference for current consumption.

According to World Bank, the gender bias is reducing in the market place in these days and gender's equality is contributing to the economic growth in Brazil.

4.3.4 Workers' Rights

In Brazil, there were 6.2 million people working as domestics in 2008, 16% of total female employment women and 20 % of black women's employment¹¹. Most of these work in very precarious conditions: only a quarter of them have signed an employment contract that guarantees their rights.

Although Brazilian domestic workers had gained ground in recent years in the area of minimum wages and paid weekly rest days, they still suffered from legal and social inequalities as well as a lack of labor rights, according to a study by the ILO and the Brazilian government, supported by the "Inter-agency Programme for the Promotion of Gender and Ethnic-Racial Equality", one of three joint UN programmes funded by the MDG-F in Brazil.

The new law is the result, in part, of the impetus that led to the adoption at the 2011 ILO conference in Geneva of the Domestic Workers Convention, which stipulates that those employees should have the same rights as other workers, including schedules, weekly rest of at least 24 consecutive hours and limits on payments in kind.

A study funded by the MDG-F on the economic impact of increased income to domestic workers showed that by enhancing traditionally marginalized job categories it is possible to improve the living conditions of low-income populations and thereby to improve the welfare of society as a whole.

As for the unemployment rate in Brazil, in November 2013 it was estimated at 4.6 % for the group of six metropolitan areas surveyed (see Table 4.3.1)¹². There was decrease of 0.6 percentage points in comparison with October (5.2 %), but no statistically significant change versus November last year (4.9 %).

¹¹ MDG Achievement Fund, <http://www.mdgfund.org/story/winning-rights-brazil-s-domestic-workers>

¹² IBGE, Sala de Imprensa, <http://saladeimprensa.ibge.gov.br/en/noticias?view=noticia&id=1&busca=1&idnoticia=2552>

Table 4.3.1 Unemployment Rate in 2013

Indicator / period	NOVEMBER 2013	OCTOBER 2013	NOVEMBER 2012
Unemployment rate	4,6%	5,2%	4,9%
Real income usually earned	R\$ 1.965,20	R\$ 1.927,48	R\$ 1.908,41
Change of income in comparison with		2,0%	3,0%

Source: IBGE, Sala de Imprensa,

<http://saladeimprensa.ibge.gov.br/en/noticias?view=noticia&id=1&busca=1&idnoticia=2552>

The unemployment rate of November 2013 (4.6 %) reached the lowest figure since March 2002. The November figure was the same as in December 2012. The unemployed population (1.1 million persons) recorded decrease of 10.9 % in comparison with that of October. In comparison with November last year, this population remained stable. The employed population (23.3 million persons) remained stable compared in both comparisons. The number of workers with an employment record card signed in the private sector (11.8 million) did not record change in comparison with that of October and increased 3.1 % in relation to November 2012. The average real income usually earned by the employed population (R\$ 1,965.20) was 2.0 % bigger than that of October (R\$ 1,927.48) and 3.0 % than that of November 2012 (1,908.41). The volume of real income usually earned by the employed population was estimated at R\$ 46.2 billion in November 2013, having increased 2.0 % in relation to last October and 2.3 % in relation to November last year. The average real income of employed persons (R\$ 46.2 billion last October increased 2.1 % in comparison with that of September 2013 (R\$ 45.3 billion) and 2.4 % versus that of October 2012 (R\$ 45.1 billion).

4.3.5 Persons with Disabilities

Inequalities in access to education and educational performance are very evident among Brazilian children, young people and adults¹³. This particularly affects some ethnic groups, poor people, rural populations, disabled students, and youth and adults who have not concluded compulsory education at the conventional age. However, a firm commitment from President Lula and his successor, Dilma Rousseff, to social equality, a steady economic growth of 10 % and support from donors is leading to the development of real social change and inclusive education in Brazil.

The 1988 Federal Constitution defined education as a social right for all Brazilian citizens and an obligation on the state and family. The responsibility for enforcing this right falls on the federal government and the states. The federal districts and the cities divide this responsibility between them. The federal government organizes the system, finances public education

¹³ R. Rieser, 2012: Implementing Inclusive Education – Commonwealth Guide to Implementing Article 24 of the UN Convention on the Rights of Persons with Disabilities

institutions and exercises a redistributive function to guarantee equalization of educational opportunities and a minimum quality standard. The cities have the main responsibility for early years and primary education. Since 2008, this covers all 6–14 year olds, together with pre-school children from birth to 5 years old. From 2001 the National Education Plan's objectives have included special education partnerships, health and social care providers in all cities; adequate educational interaction in early childhood; transport, spoken textbooks, large print, Braille and Brazilian sign language, and access to buildings. In the same year, national guidelines on special education provided for the enrolment of all students in basic education and made schools responsible for providing quality education.

Article 7 requires the care of all students with SEN to be realized in regular classes, drawing on Law 10.098 of 2000 and 10.171 of 2001. This provides that education systems must 'ensure access for students who show special educational needs, through the elimination of urban architectural barriers, in buildings – including the facilities, equipment and furniture – and in school transport, as well as the barriers in communication, providing the schools with necessary human resources and materials'.

In 2006, 56 million children out of a population of 170 million were enrolled in early years and school education. Primary net enrolment was 96 %, compared with 90 % in 2000. However, the census identified 28 million disabled people, so there is still a long way to go to get all into basic education. Traditionally, special education was organized as a parallel system with strong presence private sector involvement. The proportion of pupils with special needs who attend ordinary schools rose from 21 % in 2000 to 47 per cent in 2006.

'A cornerstone in Brazil's economic and social development has to embrace all Brazilians, especially disabled children who can escape lives of poverty and blunted opportunity by getting the education that others in the community take for granted', says Vinod Thomas, World Bank Country Director for Brazil.

In 2007, the Ministry of Education launched the Educational Development Plan (PDE). This includes 40 programmes or actions to reduce social exclusion and cultural marginalization. A big focus is on improving literacy and preventing drop-out by guaranteed minimum wages and hours for teachers, guaranteed one-third non-contact time, libraries and books. Most crucially for disabled students, the PDE provides for the installation of multifunctional resource rooms, equipped with television, computers, DVD and software for accessibility, furniture and educational material specific to Braille, sign language LIBRAS, and augmentative and alternative communication. At the Conference of States Parties on the UNCRPD held in September 2010, it was reported that 22,000 such rooms had been installed and Brazil would meet its target of 30,000 by 2011. At the same meeting it was reported that the Brazilian Government was also supporting mobile classrooms on barges in the Amazon basin to reach

out-of-school indigenous children.

Infrastructure is only part of the picture and since 2001 there has been a major programme of training administrators and teachers in the methods of inclusive education on a trickle-down, diffusion model, from federal government to the cities. The themes developed include the fundamentals of inclusive education; specialized education services for mentally handicapped people; assistive technologies in the educational process; the inclusion of deaf and hearing-impaired students and blind and visually-impaired students; and the inclusion of autistic students.

Independent assessments of the development of inclusive education identify teacher training and training for administrators as the two largest barriers. Improvements in the training and quality of the teaching are keys and since December 2009 a national minimum salary came into force and representative committees of different stakeholders oversee teacher training.

There is still much unevenness in the development of the education system in Brazil, but the clear resolve of the government is leading to innovative practice in various municipalities. Brazil's FUNDEF programme devotes 60 % of its resources to recruiting and training more teachers in poorer states. Qualified teachers help students to avoid grade repetition and drop-out. Changes are still being made, but there have been major advances with new values and beliefs being internalized after questioning of the milestones and objectives imposed by the political commitment to overcome exclusive practices.

4.3.6 Children's Right¹⁴

(1) Implementation of International Rights of the Child

The Constitution provides the principles to be followed for the protection of children and adolescents in Brazil. These principles, coupled with the numerous international treaties signed and several pieces of legislation enacted, offer a wide range of protection to children's and adolescents' rights.

Brazil is a founding member of the United Nations and a signatory of the Universal Declaration of Human Rights, which was adopted and proclaimed by General Assembly resolution 217A(III) of December 10, 1948. Article 25(2) of the Universal Declaration enunciates that motherhood and childhood are entitled to special care and assistance and that all children, whether born in or out of wedlock, shall enjoy the same social protection.

¹⁴ Library of Congress, <http://www.loc.gov/law/help/child-rights/brazil.php>

In 1959, this theme was expanded and the UN proclaimed by General Assembly resolution 1386 (XIV) of November 20, 1959, the Declaration of the Rights of the Child. The declaration served as the basis for the future Convention on the Rights of the Child, which would be adopted, thirty years later, by UN General Assembly resolution 44/25 of November 20, 1989.

On November 21, 1990, Brazil issued Decree No. 99,710, ratifying Legislative Decree No. 28 of September 14, 1990, which approved the UN Convention on the Rights of the Child, fully incorporating it onto Brazil's positive law. Additionally, on March 8, 2004, Brazil issued Decree No. 5,007, promulgating the UN Optional Protocol to the Convention on the Rights of the Child on the Sale of Children, Child Prostitution, and Child Pornography and Decree No. 5,006, promulgating the UN Optional Protocol to the Convention on the Rights of the Child on the Involvement of Children in Armed Conflict. Table 4.3.2 summarizes international conventions ratified by Brazil.

Table 4.3.2 Summary of Rights of Child International Convention ratified by Brazil

	Name of International Convention
1	General Assembly resolution 217 A(III) of December 10, 1948 (ratified in 1948)
2	General Assembly resolution 1386 (XIV) of November 20 1959 (ratified in 1959)
3	UN Convention on the Rights of the Child (ratified in 1990)
4	UN Optional Protocol to the Convention on the Rights of the Child on the Sale of Children, Child Prostitution, and Child Pornography (ratified in 2004)
5	UN Optional Protocol to the Convention on the Rights of the Child on the Involvement of Children in Armed Conflict (ratified in 2004)

(2) Child Labour and Exploitation

Based on principles elaborated in the Constitution, the Child and Adolescent Statute sanctions the prohibition of any work for minors less than fourteen years of age, except as apprentices, and dictates that the protection of the work of adolescents is regulated by special legislation. Article 62 defines apprenticeship as technical-professional education administered according to the directives and on the basis of the education legislation in force. Article 64 lays out the principles to be followed in technical-professional education. The statute also assures labour and social security rights for apprentice adolescents older than fourteen years and protected work for the handicapped adolescent. In addition, it establishes that the adolescent worker has the right to acquire a profession and protection at work, which must respect the peculiar conditions of a developing person and equip them with adequate professional qualification for the job market.

On December 19, 2000, the government enacted Law No. 10,097 to supplement the section (arts. 402 to 441) of the Consolidation of Labor Laws that regulates the protection of the work of minors conform to both the Constitution and the Child and Adolescent Statute.

In 2001, the Ministry of Labor and Employment issued an administrative act (Portaria) listing eighty-one working activities prohibited to minors of less than eighteen years of age. The act

prohibits, for instance, work by minors in both civil construction and heavy machinery construction; in industrial operations of paper, plastic, or metal recycling; with infected animals; in fabrication of fireworks, and in slaughter houses.

4.3.7 Sexual Minorities

(1) Outline

In May 2008 global survey of laws on homosexuality, the International Lesbian and Gay Association (ILGA) notes that homosexual acts have been legal in Brazil since 1831 (ILGA May 2008¹⁵) and that discrimination based on sexual orientation is prohibited by Brazil's constitution. In a survey conducted in 2006, Amnesty International (AI) indicates that "anti-discrimination and anti-vilification laws" exist in some states (AI July 2006). With respect to employment matters, discrimination on the basis of sexual orientation is prohibited in several states including in Bahia, the Federal District, Minas Gerais, Paraíba, Rio de Janeiro, Rio Grande do Sul, Santa Catarina and Sao Paulo.

Legislation is pending on several proposals that affect the gay, lesbian, bisexual, transsexual and transgender (GLBT) community¹⁶. The proposals include legal recognition of civil partnerships between same sex couples¹⁷, criminalization of homophobia, authorization of change of given name of transsexual and transgender individuals and the establishment of a "National Day of Fight Against Homophobia".

(2) State Commitment to GLBT Rights

In June 2008, President Luiz Inácio Lula da Silva (President Lula) inaugurated the "First National Conference of Gays, Lesbians, Bisexuals Transvestites and Transsexuals", where he expressed his support for gay rights and called for a "time of reparation"¹⁸. The conference was reported to be the first in the world to be convened by a government for the purpose of promoting GLBT rights.

The "Brazil without Homophobia Program,"¹⁹ a government-led initiative created to promote homosexual "citizenship" and eliminate discrimination against the GLBT community, resulted in the creation of 47 Human Rights Reference Centers aimed at preventing and fighting against

¹⁵ International Lesbian and Gay Association (ILGA). May 2008. Daniel Ottosson. State-sponsored Homophobia: A World Survey of Laws Prohibiting Same Sex Activity Between Consenting Adults.

¹⁶ United Nations (UN). February 2008. Human Rights Council, Office of the High Commissioner for Human Rights (OHCHR). Brazil's Report on the Universal Periodic Review.

¹⁷ Refworld, <http://www.refworld.org/docid/492ac7c72d.html>

¹⁸ Pink News. 11 June 2008. Sophie Picheta. "Brazilian President Calls Homophobia a 'Perverse Disease'"

¹⁹ Rede Social de Justiça e Direitos Humanos <http://www.social.org.br/relatorio2004ingles/relatorio028.htm>

homophobia. The centers offer legal, psychological and social services and are available in all states in Brazil. Country Reports on Human Rights Practices for 2007 adds that in 2007, the government of the state of Rio de Janeiro created a support program for sexual minorities, which includes counseling services, medical assistance, rights defense and witness protection.

Brazil has also been an active promoter of GLBT rights on the international stage; in 2003 Brazil introduced the first resolution to the United Nations Commission on Human Rights (UNHCHR) calling for the protection of "the human rights of all people regardless of their sexual orientation". In addition, another Brazilian sponsored resolution, the "Resolution on Human Rights, Sexual Orientation, and Gender Identity," was adopted by the Organization of American States (OAS) on 3 June 2008.

A proposal to criminalize homophobia means that anyone convicted of "preaching" or "teaching"²⁰ against homosexuality could be subject to a prison term of between two to five years if the legislation is passed. In expressing his commitment to "do all that is possible" to criminalize homophobia, President Lula was quoted as stating that homophobia is "the most perverse disease impregnated in the human head". The global coordinator for the World Congress of Families expressed concern that the proposal could facilitate the suppression of "free speech" and concerns have also been raised about the implications for "religious persecution".

President Lula also made a public commitment in favor of legalizing civil unions between same sex couples. The only state in Brazil where same sex partnerships are legally recognized is Rio Grande do Sul, where committed couples may register at a notary public office and be granted the right to joint property ownership, shared custody of children and pension and property entitlement upon the death of the other partner. In a precedent-setting court ruling in Rio Grande do Sul in March 2008, a homosexual man was awarded a share of his partner's assets, even though the two men did not cohabit and the partner was a married American citizen.

Sex-change operations are available at no cost through Brazil's national public health care system following a court order issued in August 2007.

(3) Situation of Homosexuals Living in Brazil

In Country Reports 2007, the United States (US) Department of State maintains that in general, laws prohibiting discrimination based on sexual orientation are upheld by federal and state

²⁰ LifeSiteNews.com. 22 March 2007. Gudrun Schultz. "More Details on the Proposed Brazil Law to Jail Pastors who Preach Homosexual Activity is Sin."

officials²¹. Sao Paulo hosts what is considered the world's largest pride parade. On 25 May 2008, the event attracted an estimated crowd of between one to five million participants and generated substantial economic benefits, including the creation of "thousands" of jobs. The Tourism Minister was supportive of the event, reportedly stating that "this is the diversity the country wants".

Despite legal protections for GLBT persons, AI notes that there are "high levels of homophobic violence" in Brazil. In its report on the Universal Periodic Review to the Human Rights Council of the United Nations (UN), the government of Brazil corroborates this fact, noting that homosexuals are "frequent targets of [violent] acts and homicides".

According to a non-governmental organization (NGO) called Bahian Gay Group (Grupo Gay de Bahia), which is the oldest gay rights organization in Brazil, the number of reported killings of sexual minorities in 2007 is of 116, and included 83 homosexuals, 30 transvestites and 3 lesbians. 60 % of the reported killings occurred in the northeast region of Brazil. Estimates of the number of homosexual murder victims between 1980 and 2006 range from 2,680 to 2,790. However, between 1980 and 2002, figures collected by the Mortality Information System of Brazil's Ministry of Health indicate that the homicide rate for the entire country rose from 11.4 per 100,000 population to 28.4 per 100,000 population, with a total figure of 249,570 recorded homicides for the Year 2002 alone.

In September 2007, the winner of a local "Miss Gay" competition was found murdered in a town in northeast Brazil, and in February 2008, the president of Sao Paulo's Gay Pride Association was beaten unconscious by "an unknown number of attackers". A special police unit called the "Racial Crimes and Crimes of Intolerance Division" was assigned to investigate the latter incident.

(4) Other Support Groups

In addition to the Bahian Gay Group, Human Rights Watch (HRW) lists six other organizations that serve the GLBT community in Brazil on its website. One of these organizations, the Brazilian Gay, Lesbian, Bisexual, Transvestite and Transsexual Association (Associação Brasileira de Gays, Lésbicas, Bissexuais, Travestis e Transexuais, ABGLT), is the largest GLBT network in Latin America, consisting of 141 GLBT support groups in addition to 62 other organizations that collaborate on AIDS and human rights issues (ABGLT n.d.). An application by the ABGLT for consultative status at the UN was debated at the 29 May – 6 June 2008 session of the NGO Committee of the UN, a body of 19 member states representing "all regions," and will be given further consideration in January 2009.

²¹ United States (US). 11 March 2008. Department of State. "Brazil." Country Reports on Human Rights Practices for 2007.

In 2010, the government established two new bodies in charge of the Plano Nacional para Promoção da Cidadania e Direitos Humanos de LGBTs (PNLGBT)²²: the General Coordination for Promotion of LGBT Rights and the National Council to Fight Discrimination and Promote LGBT Rights. The first one substitutes the organizational unit created to execute the BSH, instituting a more formal and politically developed body in the structure of the SEDH. The second one was actually the result of a restructuring of the CNCD, which instituted a specific council to deal with discrimination faced by LGBT, thus increasing the consultative and deliberative space occupied by the LGBT Movement inside the government.

The last venture of the Lula administration involving LGBT rights was the launch of the Programa Nacional de Direitos Humanos III in late 2010. According to Carbonari (2010), never in the history of the country a governmental human rights program caused so much controversy and gained massive media attention like this. Unlike the previous versions, all launched by the FHC administration, this program touched upon very sensitive and contentious issues, instigating harsh responses from “reactive and conservative” sectors of the society²³. These issues included the creation of a commission to unravel truth about the human rights violations committed by the military during the dictatorship, rights to abortion and same-sex unions, among others.

Hence, with the PNDH III, Lula takes a step further in the human rights debate, breaking several taboos and bringing issues that had been long considered as private to the public sphere. The ultimate goal, as stated above, is to achieve equality and respect to diversity, while guaranteeing human rights implementation in Brazil. This discourse was coherently present throughout both his mandates and is consistent with the discourses used to legitimize the BSH and the PNLGBT, and to the broader human rights discourse established by his government.

4.4 Cultural Heritage

4.4.1 Relevant Regulations and Government Agencies

(1) Backgrounds²⁴

Regarding legislation, even though from the nineteenth century, Brazilian identity has been linked to archaeological heritage, it was to be introduced later. In the Court in Rio the Janeiro, Romantic nationalism was grounded on the idealization of natives and archaeology played a role. After an eclipse in the beginning of the twentieth century, prehistoric and historic

²² Munin, <http://munin.uit.no/bitstream/handle/10037/5101/thesis.pdf?sequence=2>

²³ Carbonari, Paulo César (2010) PNDH 3: Por que mudar? DHnet. Available at: http://www.dhnet.org.br/pndh/textos/carbonari_pndh_3_pq_mudar.pdf

²⁴ Funari, P.P., Conservation of Cultural Heritage in Brazil: Some Remarks, 2000.

archaeological heritage contributed to forging Brazilian identity. In this context, it is natural that the earliest document relating to the official protection of archaeological heritage, dating of the eighteenth century in Portugal, tries to protect “any old building, statues, inscription in Phoenician, Greek, Latin, Gothic or Arabic, as well as coins”, whose application in the Portuguese colony in South America is not probable.

(2) Constitution

According to the Brazil Constitution²⁵ in the title VIII Social Order, chapter III, Section II, they are mentioned about the cultural heritage. It says that the Brazilian government will not only promote and protect their cultural heritage including intangible nature with the cooperation of the community, but also ensure to full exercise of the cultural rights and protect the expressions of cultures of national ethnic groups.

Article 215: The State shall ensure to all the full exercise of the cultural rights and access to the sources of national culture and shall support and foster the appreciation and diffusion of cultural expressions.

Paragraph 1 - The State shall protect the expressions of popular, Indian and Afro-Brazilian cultures, as well as those of other groups participating in the national civilization process.

Paragraph 2 - The law shall provide for the establishment of commemorative dates of high significance for the various national ethnic segments.

Paragraph 3 - The State shall establish the National Plan of Culture, with a pluriannual duration, aiming at the cultural development of the Country and at the integration of the actions by the Public Power.

Article 216: The Brazilian cultural heritage consists of the assets of a material and immaterial nature, taken individually or as a whole, which bear reference to the identity, action and memory of the various groups that form the Brazilian society

Paragraph 1 - The Government shall, with the cooperation of the community, promote and protect the Brazilian cultural heritage, by means of inventories, registers, vigilance, monument protection decrees, expropriation and other forms of precaution and preservation.

Paragraph 2 - It is incumbent upon the Government, in accordance with the law, to manage the keeping of the governmental documents and to make them available for consultation to whomever may need to do so.

Paragraph 3 - The law shall establish incentives for the production and knowledge of cultural assets and values.

Paragraph 4 - Damages and threats to the cultural heritage shall be punished in accordance with the law.

Paragraph 5 - All documents and sites bearing historical reminiscence to the ancient communities of runaway slaves are protected as national heritage.

Paragraph 6 - The States and the Federal District may allocate up to five tenths percent of their net tax proceedings to a State fund for fomenting culture, it being prohibited the use of these funds

(3) Legislation of Cultural Heritage²⁶

²⁵ Superior Electoral Court, <http://english.tse.jus.br/arquivos/federal-constitution>

²⁶ Ministério da Cultura, <http://www.cultura.gov.br/>

1) Laws

According to Ministerio de Cultura, these are the major laws and decrees related to the conservation of cultural, natural and intangible heritage in Brazil (see Tables 4.4.1 and 4.4.2). Most of them were enacted from 1937 to 2012.

Table 4.4.1 List of major Law related with Conservation of Cultural Heritage

Legal Code	Descriptions
Law No. 12.301, of 28.07.2010	Declares the Centro Luiz Gonzaga Northeastern Traditions - Northeast Fair Saint Kitts Intangible Cultural Heritage of Brazil.
Law No. 10.413, of 12.03.2002	Determines the registration of cultural property of the companies included in the National Privatization Program.
Law No. 8,394, of 30.12.1991	Provides for the preservation, organization and protection of private documentary collections of Presidents of the Republic and other measures.
Law No. 8.113, of 12.12.1990	Deals with the legal nature of the Brazilian Institute of Cultural Heritage - EORTC and other measures.
Law No. 6,292, of 15.12.1975	Provides for the registration of goods in the Institute of National Historical and Artistic Heritage - IPHAN.
Law No. 3.924, of 07.26.1961	Treats of the archaeological monuments and prehistoric.

Table 4.4.2 List of major Decrees related with Conservation of Cultural Heritage

Legal Code	Descriptions
Decree No. 7,875, of December 27, 2012	Amendment to the Decree 6,583, of September 29, 2008, promulgating the Portuguese Language Orthographic Agreement.
Order of May 9, 2012	Declares public and social interest of the private document collection Diocesan Curia of Nova Iguaçu, State of Rio de Janeiro
Order of May 9, 2012	Declares public and private social interest documentary collection of the educator Paulo Freire Neves Reglus.
Decree No. 6,583, of September 29, 2008	Enacts the Portuguese Language Orthographic Agreement, signed in Lisbon on December 16, 1990.
Decree No. 5,753, of 12.04.2006	Enacts the Convention for the Safeguarding of the Intangible Cultural Heritage, adopted in Paris on October 17, 2003, and signed on November 3, 2003
Decree No. 3,551, of 08.04.2000	Creates the registry of the Intangible Cultural Heritage of Nature which are Brazilian cultural heritage, creates the National Programme of Intangible Heritage and other measures
Decree No. 80,978 of 12/12/1977	Enacts the Convention on the Protection of the World Cultural and Natural Heritage, 1972
Legislative Decree No. 74 of 06.30.1977	Approves the text of the Convention on the Protection of World Heritage Cultural and Natural
Decree Law No. 25 of 11.30.1937 -	Organizes the protection of historical and artistic heritage.

4.4.2 Major Cultural Heritage Sites in Brazil

Nineteen properties are listed on the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage List in Brazil as of January 2014, of which twelve are cultural heritage sites and seven are natural heritage sites (see Table 4.4.3 and Figure 4.4.1).

Table 4.4.3 List of World Heritage Sites in Brazil

Site	Properties	Registered Year
1. Brasilia	Cultural Heritage	1987
2. Historic Centre of Salvador de Bahia	Cultural Heritage	1985
3. Historic Centre of Sao Luis	Cultural Heritage	1997
4. Historic Centre of the Town of Diamantina	Cultural Heritage	1999
5. Historic Centre of the Town of Goiás	Cultural Heritage	2001
6. Historic Centre of the Town of Olinda	Cultural Heritage	1982
7. Historic Town of Ouro Preto	Cultural Heritage	1980
8. Jesuit Missions of the Guaranis: San Ignacio Mini, Santa Ana, Nuestra Señora de Loreto and Santa Maria Mayor (Argentina), Ruins of Sao Miguel das Missoes (Brazil)	Cultural Heritage	1983
9. Rio de Janeiro: Carioca Landscapes between the Mountain and the Sea	Cultural Heritage	2012
10. Sanctuary of Bom Jesus do Congonhas	Cultural Heritage	1985
11. Sao Francisco Square in the Town of Sao Cristóvão	Cultural Heritage	2010
12. Serra da Capivara National Park	Cultural Heritage	1991
13. Atlantic Forest South-East Reserves	Natural Heritage	1999
14. Brazilian Atlantic Islands: Fernando de Noronha and Atol das Rocas Reserves	Natural Heritage	2001
15. Central Amazon Conservation Complex	Natural Heritage	2000
16. Cerrado Protected Areas: Chapada dos Veadeiros and Emas National Parks	Natural Heritage	2001
17. Discovery Coast Atlantic Forest Reserves	Natural Heritage	1999
18. Iguacu National Park	Natural Heritage	1986
19. Pantanal Conservation Area	Natural Heritage	2000

Source: UNESCO (2014)

to identify, safeguard and promote tangible and intangible cultural heritage. Federal institutions have been greatly pressured to provide training on cultural program development and implementation and have turned to UNESCO for support.

- ✓ Fostering new development plan practices for cultural heritage preservation, including archaeological and underwater heritage:

The accelerated process of economic growth that the country has been experiencing may lead to irreversible ruptures in tangible and intangible cultural heritage. For example, evidence of increasing pressure on renovating historical urban areas; indigenous populations have sought new ways of life, due to a dramatic increase in migration to urban areas which has threatened their traditional knowledge and languages; furthermore, social factors such as interconnectivity have considerably changed the ways through which culture is accessed, increasing cultural expression channels used by groups which were previously invisible within the national scenario.

In addition to impacts on indigenous cultures, the issue of archaeological heritage has been raised in the Amazon region due to pressure from economic growth and large infrastructure investments. Recent scientific discoveries point to the need for a complete review of what was previously known about the land occupation process in the region. They suggest investments should be designated to support thorough cultural impact studies and that preventive measures are associated to such investments. As one of the alternatives to protect and promote these areas and cultures are an incentive for their recognition as sites and cultural expressions, so that they are registered on the World Heritage and Intangible Cultural Heritage Lists.

Regeneration of central areas and harbors, as well as investments in great sporting events which will take place in Brazil in the near future, are other examples of how the current development stage can indicate opportunities or losses for cultural heritage, depending on the choices made during the planning stages. UNESCO should endeavor to contribute to national authorities by advocating for an integrated approach to the urban regeneration processes, particularly focusing on input from national and international experiences, aimed at building public or private partnership models and with a view to renovating historical centers.

- ✓ Developing methodologies to appraise the economic and social dimension of culture:

National institutions have great interest in methodologies that measure the economic and social impacts of culture. Within this context, measurement of intangible heritage which is highlighted by the new “UNESCO Framework for Cultural Statistics” is at the forefront,

both for its importance to countries with great diversity and heterogeneous social conditions such as Brazil, and the methodological complexities it presents. The diagnosis and research which seek to understand the dynamic of the economy of culture sectors – especially the most dynamic segments, such as the audiovisual, publishing, and tourist industries – are mainly initiatives by public banks, export agencies, the tourism sector and business organizations analyzing their own investments. However, these initiatives have not shown sufficient regularity or scale for them to guide public policies. Therefore, UNESCO is contributing to consolidate cultural research and statistics on the public sector agenda.

- ✓ Enhancing policies and programs that promote intercultural and inter-religious dialogue:

Educational policies in Brazil have increasingly raised the value of themes such as diversity, intercultural dialogue, and the fight against discrimination. However, this agenda is divided into specific groups (indigenous populations, people of African descent, and traditional populations), resulting in strategies that have not been able to explain conflicts that arise within the school environment, or to act on them. The great challenge for culture is to provide assistance to develop transversal educational approaches which are closer to the experiences, ways of life, and views on the world that students and their communities hold. The General History of Africa Collection, which has been translated into Portuguese, as well as the production of associated pedagogical material may be one of the ways that intercultural dialogue actions may be encouraged by the UNESCO Brasilia Office. These actions will be conducted through the Brazil-Africa: Crossed Histories Program, which has the objective of enhancing Brazil-Africa relations and result in recognition, protection, and promotion of African culture as a live and dynamic combination of knowledge, ways of life, and creativity.

A particularly complex and relevant theme is the teaching of religious studies in public schools, which is a compulsory subject in accordance with the Education Guidelines and Framework Law. Minority religions, particularly those of African origin, have not been adequately addressed by teaching materials or been subject to an approach which is capable of ensuring diversity and inter-religious dialogue.

4.5 Gap Analysis Between the Existing Domestic Regulations, the JICA Guidelines for Environmental and Social Considerations, and the World Bank Safeguard Policy

The sustainable conservation of those urban heritages is one of important IDB's tasks and has provided relevant funds and technical supports to member countries. World Bank and JICA also share same view and has found that heritage conservation has increased city's activity by

preserving streets and neighbourhoods built at a human scale, public areas that support positive community interaction, and green spaces that offer recreational activities. By preserving their heritage, cities can create a unique sense of place and singular urban landscapes, developing strong branding and conditions to attract investors. This is especially true for investors in tourism, which is one of the largest industries in the world today and has a track record of creating significant levels of employment for unskilled and semi-skilled workers. In addition, improving a city's self-image and identity through recognition of heritage assets has been shown to increase civic pride and energize communities to actively address a wide range of development and livelihood issues.

➤ **Conservation and Development**

In Brazil, the conservation efforts of cultural/historical and monumental properties are administered by IPHAN, the Ministry of Culture, and its relevant activities has accumulated certain amounts of knowledge and experiences, in particular, the conservation of urban heritages, but not for archaeological ruins of indigenous tribes [IPHAN, personal communication, 2014].

When development projects such as a large-scale dam construction project are planned and the project owners request for the environmental clearance to IBAMA, MMA, relevant information of development projects of concerns, tend not to be passed forward to IPHAN timely although IPHAN has an authorization power to provide licenses for those development activities. In most cases, LPs (Licença Prévia) are given to project owners without appropriate involvement and/or consultation with IPHAN at the early project planning stage. Usually, the review and/or the examination by IPHAN within the conventional EIA process of past and/or on-going development projects tend to be conducted when the design of the development project of concern is almost finalized.

Sometime, there were several cases in that IPHAN was able to get involved in that early planning process when IPHAN itself happened to find occurrences of negative impacts on cultural/historical and monumental properties, caused by development works.

➤ **Participation of IPHAN at early Project Planning Stage**

To overcome this weakness of the current EIA framework, it is essential to develop more comprehensive participatory approach that would make competent ministries, agencies, institutes, organizations, communities and others get involved at the early planning stage of future development projects in order to share common understanding about the interaction between conservation and development while having opportunities for constructive discussions leading to the achievement of a successful project consensus.

Chapter 5 Environmental Assessment

5.1 Legal Framework

5.1.1 Outline

In Brazil, Environmental Impact Assessment (EIA) was established in 1981 with the enactment of the National Environmental Policy (NEP) through Law 6.938/81. CONAMA's Resolutions 01/86 and 237/97 define the basic characteristics of the EIA process in Brazil. EIA is associated with the licensing of activities that can significantly impact the environment.

The environmental licensing procedure in Brazil includes the analysis of documents, projects and environmental studies submitted by the entrepreneur. The licensing procedure of certain activities deemed to significantly impact on the environment requires an EIA and the corresponding environmental impact statement (Relatório de Impacto Ambiental) (RIMA). The EIA and RIMA (EIA/RIMA) must both be submitted for approval by the appropriate authorities (CONAMA Resolution No. 1/1986). The authorities responsible for the EIA review at Federal Level are the IBAMA, and at State Level is the Environment Office/Environmental Council of the respective State. More detailed descriptions about the relationship among the federal, the state and municipality are to be summarized in 5.2.2 of this chapter.

In addition to complying with legal provisions, the EIA must also adhere to certain general guidelines, such as:

- Addressing all technological and project location options.
- Identifying and assessing, on a continuing basis, the environmental impact caused during the implementation and operation of the pertinent activity.
- Defining geographic limits directly and indirectly affected by that activity, the area of influence of the project.
- Considering government plans and programmes proposed and being implemented in areas influenced by the project, and their compatibility.

As for environmental assessments, most of them are requested by the environmental bodies at the permitting procedure, or whenever necessary for the remediation of contaminated natural resources, meaning they are mostly performed at the request of the environmental body. Therefore, the EIA/RIMA must be presented when applying for a preliminary license (LP) as the EIA/RIMA gives the technical information on which the environment agency can support its licensing decision. At the federal level, CONAMA Resolution 01/86 foresees the minimum content of environmental impact assessments and CONAMA Resolution 237/97 puts in place the process for conducting and receiving approval of environmental assessments.

The guidelines for the carrying out of environmental audits are set by technical norms at the federal level (International Organization for Standardization – NBR ISO 14010, NBR ISO 14011 and NBR ISO 14012). At the state level, several states have passed laws with the aim of making the environmental audits mandatory on a recurrent basis for certain ventures, especially those with a higher complexity level and most significant environmental impacts.

Moreover, for some activities, such as oil and gas exploitation and navy facilities, the legislation establishes specific obligations regarding periodic audits.

5.1.2 EIA Legal Framework

Tables 5.1.1 summarizes key features of EIA process in Brazil. Table 5.1.2 summarizes major EIA – related legal codes in Brazil and the regulation for the application of the environmental license.

Table 5.1.1 Summary of the Legal Framework of EIA in Brazil

Key Environmental Authorities	CSMA: High Council on the Environment CONAMA: National Environmental Council IBAMA: Brazilian Institute for the Environment and Renewable Natural Resources SISNAMA: National Environmental System
Legal Character of EIA	Requirement for a permit prior to construction, installation, expansion, or operation of facilities and activities covered by regulations.
Screening	CONAMA's regulations include a list of projects that must have an environmental license; based on the list, the responsible authorities define the criteria used to determine whether an EIA is required.
Types of EIA instruments	There are three sequential processes: (1) Preliminary license (LP, Licencia previa) (2) Construction license (LI, Licencia de instalación) (3) Operating license (LO, Licencia de operación)
Decision-making Responsibility	States, municipalities, and in some cases, IBAMA.
Terms of Reference (TORs)	Regulations define general guidelines and technical activities; IBAMA or others can set additional guidelines; the responsible authority determines the necessary studies; a qualified multidisciplinary team that is not linked directly or indirectly with the proponent must conduct the study.
EIA Requirements	Analyze positive, negative, direct, indirect, short, medium, long-term, temporary, permanent, cumulative, synergistic and distributional impacts on health, safety, well-being, social and economic activities, biota, the environment, and natural resources.
Institutional Coordination	Public agencies that are interested in or directly related to project receive copy of RIMA.
Citizen Participation	Interested parties can present observations on the RIMA within a specified period. The responsible authority can hold a public hearing if deemed necessary.
Information Disclosure	The information in the RIMA must be comprehensible. The public must have access to the RIMA in locations determined by regulation. The license request must be published.
EIA Report Format	No provisions.
Monitoring	EIA includes preparation of a Support and Monitoring Program that also defines the parameters that must be considered.
Alternatives	CONAMA can require studies to analyse alternatives to public and private projects; EIA must consider and compare alternative technologies and locations for the project, including the option of not carrying out the project.
Environmental Management Plan (EMP)	EIS must include mitigation measures and a Support and Monitoring Program.

Source: Gomez G.A, E. Sanchez-Triana, and S. Enriquez, 2006

Table 5.1.2 Regulation relevant to environmental licensing in Brazil

Regulation	Description
Article 225 of the 1988 Brazilian Federal Constitution	States that everyone has right to environment ecologically balanced, which is common propriety. Establish EIA as a mandatory and previous requirement for any project that may potentially cause any significant impact on the environment.
Federal Law 6938/81	Establishes the National Environmental Policy.
Federal Law 9605/98	Sets forth the procedures and criteria for environmental licensing.
Decree 1/86	Establishes the guidelines for the implementation of EIA.
Decree 9/87	Addresses public hearings (in force for review proceeding).
Decree 10/87	Provides for the compensation for environmental damages inflicted by large construction projects.
Decree 279/01	Establishes the simplified procedures for environmental licensing of projects in the energy sector with minor potential environmental impacts.
Decree 6514/08	Provides for the violation of the environment and the administrative sanctions, and establishes the federal administrative proceeding for the investigation of said violations.
CONAMA Resolution 6/87	Relative to large scale civil works
CONAMA Resolution 5/88	Relative to sanitation works
CONAMA Resolution 9/90 and 10/90	Relative to mining
CONAMA Resolution 23/94	Relative to exploration and production of oil activities

Source Involuntary Resettlement in Brazil: Review of Policies and Practices, World Bank, 2011

5.2 Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA)

5.2.1 Projects Subject to the IEE/EIA

The first step of the environmental approval process is initiated with an online registration where, besides other requirements, the person responsible for the process has to inform key development project information such as the geographic coordinates of the operation, and complete the forms to be submitted. After receiving confirmation of the submission, and then, be informed the type of studies, required in order to obtain the environmental clearance, the project owners start relevant environmental and social studies.

The Annex 1 of the CONAMA Resolution 237/97 presents the list of activities and establishments which are subject to environmental permitting, and therefore to EIA (see Table 5.2.1). Basically, any activities, not listed in this table (e.g., small-scale fishery activities), would be able to obtain the environmental approval by IEE-level studies. Some of those environmental approvals for small-scale activities and/or projects that would not cause significant negative potential impacts can be obtained at the website of state environmental agencies such as Sao Paulo [CETESBE, personal communication, 2014]. No specific EIA/IEE classification criteria and/or guidelines exist, but several guidelines are under preparation at the federal and state levels [IBAMA, personal communication, 2014].

Table 5.2.1 Activities subject to the EIA

Type of activity	Description
Extraction and treatment of mineral	Mineral Research with Guide for the use
	Open pit, including alluvial, with or without processing
	Underground mining
	Scale mining
	Drilling and production of oil and natural gas
Production of non-metal minerals	Processing of non-metallic minerals, not associated with the extraction
	Manufacturing and development of non-metallic mineral products such as: production of ceramic materials, cement, gypsum, asbestos and glass, among others
Metallurgical Industry	Manufacture of steel and steel products
	Production of iron castings and steel / forged / wires / re-rolled with or without surface treatment, including electroplating
	Metallurgy of non-ferrous metals in primary and secondary forms, including gold
	Production of rolled / alloys / artifacts of non-ferrous metals with or without surface treatment, including electroplating
	Rerolling of nonferrous metals, including alloys
	Production of solders and anodes
	Metallurgy of precious metals
	Powder metallurgy
	Manufacture of metal structures with or without surface treatment, including electroplating
	Manufacture of articles of iron / steel and non-ferrous metals with or without surface treatment, including electroplating
	Quenching and carburizing steel wire annealing, surface treatment
	Mechanic Industry
Industry of electric, electronic and communication materials	Manufacture of batteries and accumulators
	Manufacture of electrical, electronic equipment and materials for telecommunication and information
	Manufacture of electrical devices and appliances
Industry of materials for transportation	Manufacture and erection of road and rail vehicles, parts and accessories
	Manufacture and assembly of aircraft
	Manufacture and repair of ships and floating structures
Wood Industry	Saw and split wood
	Wood preservation
	Manufacture of sheets of chipboard plates, pressed and offset
	Manufacture of wooden structures and furniture
Paper and cellulose Industry	Pulp and mechanical pulp
	Manufacturing paper and cardboard
	Manufacture of articles of paper, cardboard, paper, cardboard and pressed fiber
Rubber Industry	Processing of natural rubber
	Manufacturing air chamber and reconditioning of pneumatic
	Manufacture of laminates and rubber thread
	Manufacture of foam rubber and foam rubber articles, including latex
Leather and skin Industry	Drying and salting of hides and skins
	Other preparations for tanning hides and skins
	Manufacture of various articles of hides and skins
	Manufacture of animal glue
Chemistry Industry	Production of chemicals and chemical manufacturing
	Manufacture of products derived from the processing of petroleum, shale and wood
	Manufacture of fuels not derived from petroleum
	Production of oils / fats / waxes essential vegetable -animal/oleos vegetables and other products of the distillation of wood
	Manufacture of resins and fibers, artificial and synthetic yarns and synthetic rubber and latex
	Manufacture of gunpowder / explosives / detonating / ammunition for hunting sport, safety match and fireworks
	Recovery and refining solvents, mineral oils, vegetable and animal
	Production of natural aromatic concentrates, artificial and synthetic
	Manufacturing to cleaning and polishing preparations, disinfectants, insecticides,

	germicides and fungicides
	Manufacture of paints, enamels, lacquers, varnishes, waterproofing agents, solvents, driers
	Manufacture of fertilizers and agrochemicals
	Manufacture of pharmaceutical and veterinary products
	Manufacture of soaps, detergents and candles
	Manufacture of perfumes and cosmetics
	Production of ethanol, methanol and similar alcohol
Industry for plastic products	Manufacture of plastic laminates
	Manufacture of articles of plastic
Textile, Apparel Industry/ Footwear Industry	Processing of textile fibers, vegetable, animal and synthetic
	Manufacturing and finishing of yarns and fabrics
	Dyeing, printing and finishing on other pieces of clothing and sundries tissue
	Manufacture of footwear and footwear components
Food and Beverages Industry	Milling, grinding, roasting and manufacturing of food products
	Slaughterhouses, abattoirs, and derivatives of animal origin
	Canning
	Preparation and canning of fish
	Preparation, processing and manufacturing of dairy products
	Manufacturing and sugar refining
	Refining / preparation of oil and fats
	Production of butter, cocoa, animal fats for food
	Manufacture of yeasts
	Manufacture of balanced rations and prepared animal feeds
	Manufacturing wine and vinegar
	Manufacture of beer, draft beer and malts
	Manufacture of non-alcoholic beverages as well as bottling and carbonation of mineral waters
	Manufacture of alcoholic beverages
Tobacco Industry	Manufacture of cigarettes/cigars/cigarillos and other tobacco processing activities
Various Industries	Concrete production plants
	Asphalt plants
	Electroplating services
Civil Work	Highways, railroads, waterways, subways
	Dams and dykes
	Channels for drainage
	Rectification of the watercourse
	Opening bars, inlets and channels
	Implementation of watershed
	Other works of art
Utility Service	Production of thermoelectric power
	Electricity transmission
	Water treatment stations
	Interceptors, outfalls, pumping station and sewage treatment
	Treatment and disposal of industrial waste (liquid and solid)
	Treatment/disposal of special waste such as agrochemicals and their used packaging and health care, among others
	Treatment and disposal of municipal solid wastes, including those from tanks
	Water bodies
	Recovery of contaminated or degraded areas
Transportation, terminals and deposits	Transportation of dangerous goods
	Pipeline transportation
	Marinas, harbors and airports
	Ore terminals, petroleum and chemicals
	Deposits of hazardous chemicals
Tourism	Tourism and leisure, including theme parks and racetracks complex
Various Activities	Division of land
	District and industrial hub
Agricultural Activities	Agricultural project
	Livestock
	Settlement projects and colonization
Use of natural resources	Forestry
	Economic exploitation of timber or firewood and forest by-products
	Active management of exotic wildlife and breeding of wildlife

	Utilization of natural genetic resources
	Management of living aquatic resources
	Introduction of modified exotic and/or genetically engineered species
	Use of biological diversity , biotechnology

Source CONAMA Resolution 237 Annex1, 1997

5.2.2 Procedures and Relevant Organizations

(1) Decentralization of EIA

In Brazil, the process of Environmental Licensing is decentralized. This means that according to varied aspects, such as the type of activity involved, infrastructure size, geographic location, kind of operation, extent of the environmental impacts, amongst others, the process itself, supervision and concession of the licenses will be performed by a government agency at municipal, state or federal level.

In other words, if the activity is a complex and dangerous one, highly polluting, and localized at the boundaries of two different states, the agency that will be in charge of analyzing the environmental studies will be at federal level. Besides, infrastructure developments around the coastline (e.g., port development) are entitled for the environmental clearance by federal. However, environmental clearances of some port development activities are supervised at state level. It is noted that there is no specific guideline regarding precise demarcation of EIA process, categorizing into either at federal/state and/or municipality [IBAMA, personal communication, 2014]. So, it would be better to consult both State environmental agencies and IBAMA regional office once the outline of the development project of concern are delineated.

Some cities/towns have competent and qualified professionals to be able to emit (or deny) licenses at a municipal level. If the city has no expertise to deal with the process, it will be analyzed at state level. Finally, if the activity has an impact (both negative and positive) on a greater scale and involves more than one city, but is not yet not significant enough to affect the country as a whole, the licensing process will be done at state level.

As mentioned in Section 1.2, Chapter 1, each state has its own licensing agency and processes can have specific interpretations based on local peculiarities. Table 1.2.3 of Chapter 1 summarizes the environmental agencies of each state in Brazil.

(2) Federal Level

To construct, install, expand, and operate any potential pollutant activity or any kind of use of natural resources, which may cause environmental damages, the National Environmental Policy stated by Federal Law 6938/1981 and regulated by the Federal Decree 99274/90 and 3942/01 requires an environmental permit.

The CONAMA Resolution 237/97 also defines certain general rules for the licensing authority. The federal government, by means of IBAMA, is in charge of granting environmental licenses for activities that produce a significant environmental impact at the national or regional level and,

- Are located or jointly developed in Brazil with a neighboring country; in the territorial sea; at the continental platform; in the exclusive economic zone; on Indian lands; on conservation units within the federal government's domain.
- Are located or developed in two or more states.
- Have direct impacts that go beyond the territorial limits of Brazil or one or more states.
- Are designed to research, explore, produce, process, transport, store or dispose of radioactive material at any stage, or that use nuclear power in any of its forms and applications, in an opinion issued by the National Nuclear Power Commission.
- And are military bases or ventures, where applicable, subject to specific legislation.

There are three environmental permits, such as (i) preliminary permit (LP), (ii) installation/or construction permit (LI), and (iii) operation permit (LO), defined by CONAMA Resolution 237/97. Main features of these permits are described in Table 5.2.2.

Table 5.2.2 Environmental permits

Permit type	Descriptions
Preliminary Permit (LP)	Granted at the preliminary stage of the enterprise or activity, approving its location and conception, certifying its environmental feasibility and establishing basic requirements and conditions to be met at the next stages of its implementation. At this stage, an Environmental Impact Assessment and its corresponding report may be required, as well as others environmental studies, according to the potential pollution level of the activity. Expiration term: at least the period stated by the timeline of the plans, programs and projects related to the establishment/activity, not longer than 5 years.
Installation/or Construction Permit (LI)	Authorize the construction or expansion of a facility or activity in accordance with the specifications contained in the approved plans, programs and projects, including environmental control measures and other conditions. Expiration term: at least the period stated by the establishment /activity installation timeline, not longer than 6 years.
Operation Permit (LO)	Authorize the operation of the activity or enterprise subsequently to the verification of effective compliance with the requirements set forth in the previously mentioned permits. Expiration term: varies from 4 to 10 years.

Source latinlawyer.com

According to the CONAMA Resolution 237/97, article 14, the governmental agency responsible for the permits issuing has a maximum period of 6 months to analyze the requirements. Whenever an EIA is required, the maximum analysis period is 12 months (see Figure 5.2.1).

After ToR of EIA/RIMA is developed and approved by IBAMA, the project owner shall conduct relevant EIA/RIMA studies. All the 3 stages of permit, described previously, are also subject of alterations, suspensions and annulments. These actions can happen on the following cases,

- Violation or unsatisfactory fulfillment of any legal rule or circumstance.
- Omission or misdirection of relevant information during the permitting process.
- And occurrence of severe environmental and/or health risks.

✓ **Preliminary License (LP - Licença Prévia)**

The Preliminary License must be applied for via IBAMA when planning the implantation, modification or extension of an enterprise, industry or any other potentially polluting activity. This license does not authorize the construction/or installation of project but evaluates the environmental feasibility of the project and, if the application is in accordance with environmental legislation and requirements, authorizes its location and technical conception.

✓ **Installation License (LI - Licença de Instalação)**

In order to obtain the LI, it is necessary to submit a PBA (Programa Básico Ambiental, “Basic Environment Program” in English translation). This PBA is mandatory, as this document will point out all measures to be taken to reduce negative impacts and improve the positive ones, and must be elaborated according to the EIA/RIMA reports and must also be sent to all competent governmental agencies. This license authorizes the infrastructure of the activity to be built in a period that must not exceed six years. In other words, the schedule of construction must be complete within the period established by IBAMA.

✓ **Operation License (LO - Licença de Operação)**

This Operation License is issued after the inspection of all details involved with the proposed project and its activity. At this stage, key inspection/or verification points are if all requirements demanded by IBAMA and other governmental environmental offices during the LI stage, and also during previous licenses, were addressed, and how mitigation measures will be implemented.

If either of three license, mentioned above, are not approved at the first trial, project owner can continue re-trial by conducting additional/or supplemental studies and/or works until relevant documents such as contents of EIA/RIMA become satisfactory within the time limit of each study periods (see Table 5.2.2 for more detailed information).

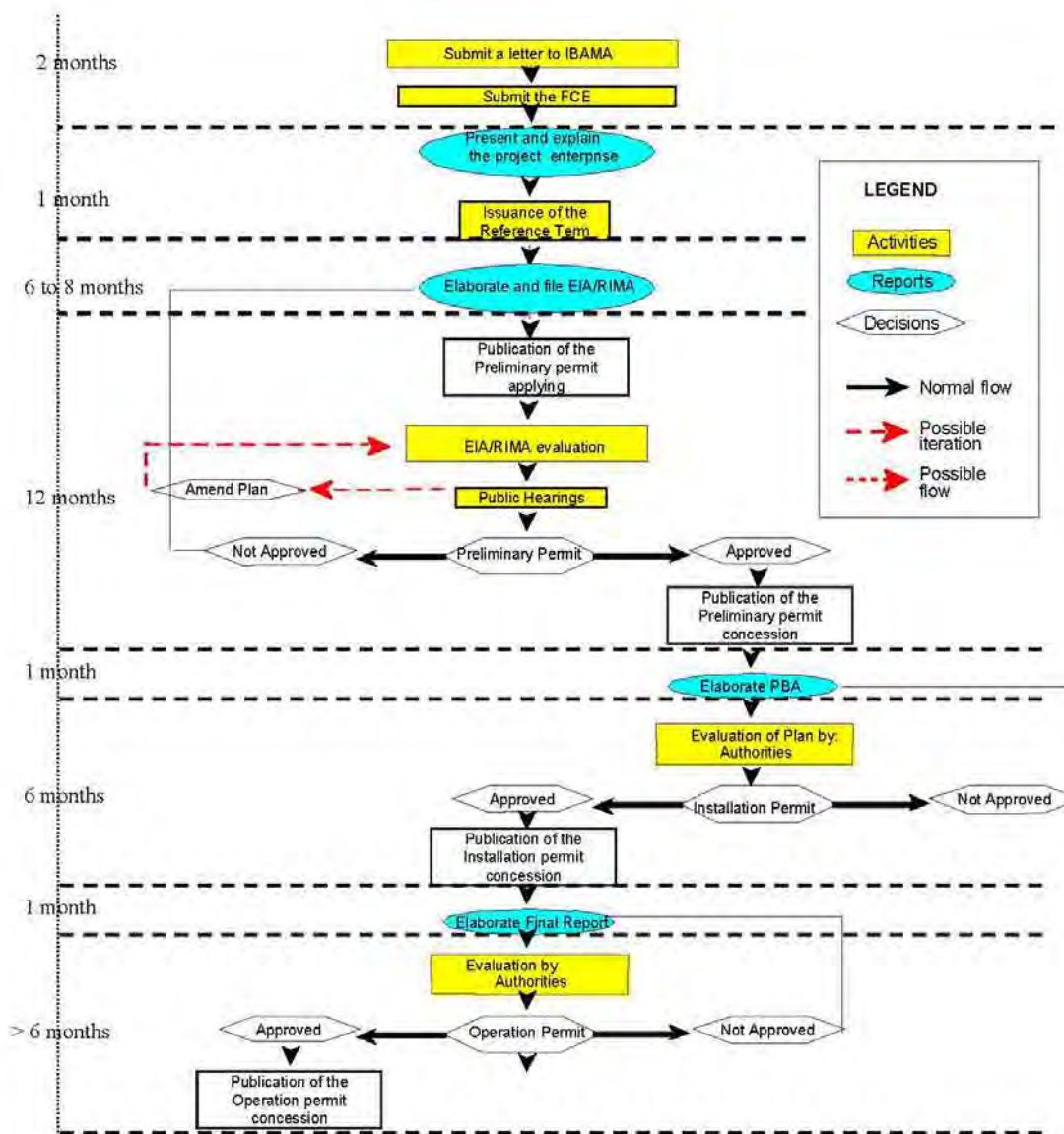


Figure 5.2.1 Diagram of Process to grant Environmental License in IBAMA

(Source: ERM, 2012)

(3) State and Municipality Level

The States, by means of their environmental bodies, will be in charge of environmental licenses for activities:

- Situated or developed in more than one municipality;
- In conservation units controlled by the state;
- Situated or developed in forests and other forms of natural vegetation subject to permanent conservation;
- That have direct environmental impacts that go beyond the territorial limits of one or more municipalities;

- And delegated by the federal government to the states through legal instruments or conventions.

Municipal governments will be in charge of environmental licenses for activities with local environmental impacts, and those that are delegated to the municipal government by the state through legal instruments or conventions.

(4) Additional Information

In 2011, the Complementary Law 140 established cooperation rules to be taken by federal, state and local government levels in order to optimize licensing and inspection proceedings of potential polluting activities. This Complementary Law tried to make clearer the rules for environmental licensing and inspection in Brazil, especially because the three government levels (federal, state and municipality) are empowered to protect the environment since the 1988 Federal Constitution.

The environmental licenses are issued in the name of the company in charge of the operation of the activity in each of its phases. Considering that, every time there is any transference of operation from one company to another, the environmental agency must be informed, and the company that is assuming the operation, must ask for license and permit transference. In some cases, depending on the state or the municipality, some permits are not transferable. In this situation, the company must apply for a new permit prior to assume the operation of the activity.

According to each activity, other authorizations and permits, such as authorizations for water use, effluent emissions and chemical product use, may be required. Some activities may also not be subject to environmental licensing. In this case, these activities shall obtain a certificate waiving environmental licensing from the respective environmental authority. As for oil & gas exploitation and production, specific environmental permits and guidelines are required. On the subject, the Federal Law 9,966/200 regulates the prevention, control and enforcement of oil pollution and other hazardous substances in Brazilian waters.

5.2.3 Public Participation

In the Brazilian system, a social license to operate also exists. It is related to the idea of transparency and pro-activity of a company towards the society and the local stakeholders in general. It aims to increase the participation of stakeholders in the decision made by the company. It has become quite usual for various stakeholders to take part in the permitting procedures of a company, especially at the time of the public hearing prior to the granting of an environmental permit by the authority.

5.2.4 Participation of Experts, NGOs and Other Third Parties

In general, the participation of experts, NGOs and other third parties within large-scale development project is guaranteed by setting the public audiences in Brazil although the current participation process would need more elaboration at the early project planning process.

Usually, a date of the public audience is settled to present the environmental study and the project of the proposed activity to the communities located close to the affected area, with the presence of a significant proportion of the local population as well as non-governmental organizations, third parties and others who else may be interested, including the media, students and entrepreneurs. All complaints, reservations and questions raised at the meeting must be answered within a defined period and must again be presented to the population. Usually, the larger the activity is, the longer it takes to attend and address all doubts and questions.

During this process, it is mandatory for the responsible for the activity to get a municipal certification declaring that the local for installation is in accordance to the local law of use of the soil. Also, it is mandatory to inform other governmental offices, according to their particular competence, about the potential risks, damages and impacts of the project.

5.2.5 Information Disclosure

As stated by the CONAMA Resolution 006/86, “all the permit requests, renewing and issuing must be published at the official journal, as well as at regional or local periodicals of great circulation”. Failure in doing so causes the cancellation of the permit by the government or the judicial power, by means of a class action.

In Brazil, the EIA is a technical/scientific report, while the RIMA is a public consultancy document aimed at acquainting the local community with the issue using simple and objective language. The results and conclusions of both reports must be available to communities by printed and digitalized materials as well as sent to the other governmental bodies such as FUNAI.

The RIMA reflects the conclusions obtained in the EIA. It must be elaborated in clear, easy-to-understand language, with figures, images and other visual aids and, as a minimum, must address the following points:

- Aims and justification of the project/activity, its relation and compatibility to local and governmental policies.
- Project/activity description and its technological/localization alternatives highlighting and detailing each category in the building and operating stages: raw material, labor, energy

resources, operational processes/techniques, possible effluents, emissions, residues, waste of energy, direct and indirect employment offers.

- Results, in an abridged form, of the studies of environmental diagnosis of the influenced area.
- Description of probable environmental impacts due to installation and operation of the activity, considering all aspects of the project.
- Characterization of the environmental quality of the influenced area, establishing a comparison between the project and the possible alternatives, as well as the possibility of non-execution of the proposed project.
- Description of the expected effects caused by the measures proposed to mitigate the negative impacts, mentioning also those that cannot be avoided and their effects.
- Program and schemes for monitoring and supervising the impacts.
- Recommendations about the most favorable alternative, conclusion and general commentaries.

5.3 Environmental Management Plan (EMP)

Basically, EIA Report shall contain relevant monitoring and supervision schemes, defining a program for monitoring and supervising both positive and negative impacts, indicating factors, aspects and parameters to be taken into account during the project implementation phase. In the licensing processes and based on the EIA/RIMA, the project owners have the obligation to support the implementation and maintenance of environmental management plan including the conservation unit – CU of the full protection group – Article 36 of the Law 9985/2000.

The existence of criticisms to the current management model of the environmental licensing process arises from the need of greater transparency, publicity and agility to present the results to the society and to define the requirements to be met by project owners. There is a deficit in the management capacity of methods – standards, concepts and procedures – that makes the monitoring and control of results difficult, as well as the compatibility of IBAMA's internal procedures and articulation mechanisms with the competent agencies such as IPHAN, PALMARES, FUNAI and others.

5.4 Strategic Environmental Assessment

The strategic environmental assessment (SEA) is proactive instrument of environmental policy that aims to anticipate the consideration of environmental issues in strategic decisions. It is appropriate for policies, plans programs of a more strategic nature than those applicable to individual projects. In Brazil, although not supported by legal requirements, there is a growing interest of academic and governmental institutions about the implementation of SEA, and also a strong demand from financial institutions like the WB and IDB.

SEA has only gotten some relevance in the Brazilian framework in mid 90's, when it became to be applied as a requirement for funding approvals. Since then this type of decision got more frequent and had assumed the main role in SEAs in the country. However, Brazil remains without a legal framework to guide the criteria and procedures of SEA. In the following years, some legislative and institutional initiatives at federal and state levels (see Table 5.4.1) had pointed to the formal implementation of SEA as an environmental policy instrument.

Table 5.4.1 Legal and Institutional Initiatives for SEA Implementation in Brazil

Year	Scale	Institution	Initiative description
1994	State – São Paulo	State Council of Environment of São Paulo	Attempt to institutionalization of SEA to adequately address cumulative effects of large projects
2002	Federal	MMA	Promoted a study on SEA recommending its adoption by legislation
2003	Federal	Deputies Chamber	Project of Law N° 2.072 - Introduce mandatory SEA of PPPs making
2004	Federal	Brazilian Court of Audit	Court Decision N° 464 - Adoption of SEA in developing the Multi-Year Plan and planning policies, plans and sector programs
2008	State – Bahia	State Government	Decree N°11.235 – Provides for the use of SEA in assessing environmental impacts of plans, programs, projects and sector public policies on environmental policy and to protect biodiversity in the state of Bahia
2009	Municipal – São Paulo (State Capital)	Municipal Government	Law N°14.933/2009 – Provides for the use of SEA to integrate the climate dimension in plans, programs and public and private projects
2010	State – São Paulo	State Government	Decree N°55.947/2010 – Provides for the use of SEA to integrate environmental and social consequences of human activities, to be systematic applied to policies, plans and public and private programs, considering the challenges of climate change
2010	Federal	MMA	Public consultation - aims to establish the principles, conditions and basic criteria for the use of SEA as a tool to advance environmental policy processes of formulating strategies for action that occur at different levels of decision of the Federal Government

Source Complemented from Teixeira (2008), Sánchez (2008).

At the end of 2010, MMA launched a public consultation to define the guidelines for SEA in decisions of the federal government. According to the MMA, the objective of this guideline is to "set the principles, conditions and basic criteria to apply SEA as an advanced instrument of environmental policy in formulating strategies for action that occur in different levels of decision of the Federal Government" (MMA 2010). This initiative brought some questions about what kind of decisions were to be supported by SEA in Brazil.

5.5 Monitoring

The Article 6, IV, of the CONAMA Administrative Act n° 1 states that the EIA shall contain a

monitoring program of the negative and positive impacts caused by the project. The Relatorio RIMA [Environmental Impact Report] shall describe the monitoring program of impacts according to the article 9° of the CONAMA Administrative Act n° 1.

5.6 Major Issues and Challenges in the Current System

Overall EIA enforcement in Brazil has accumulated many experiences, and there are several tasks to catch up with environmental and social considerations guidelines such as WB, IDB and JICA. One of important tasks Brazilian EIA enforcement system should pay attentions to is appropriate information disclosure and the public participation. There are no right-to-know provisions that require information disclosure to the public at the early planning stage.

Moreover, Brazilian law does not provide any opportunity for public comment concerning a draft EIA. The public is invited to participate in the EIA process only when the developer already concludes it. Neither the environmental agencies nor the developers have a legal duty to answer to all substantial questions eventually raised on the public comment periods. So, only legal way to file complaints to development projects officially is to start lawsuit against the project owners. Therefore, current public participation framework is not effective.

Moreover, although there were great improvement within the entire environmental legal system, some of the current Brazilian legislations are not clear about the record agencies shall make in order to decide whether an activity or work may potentially cause significant impacts on the environment, and, as a consequence, requires an EIA, which may allow some arbitrary conclusions.

Brazilian EIA should also be improved to demand the environmental agencies to routinely inspect the project development after the conclusion of an EIA, in order to guarantee that all conditions stated on the final EIA having been accomplished. More detailed discussions about those issues and challenges, mentioned above, are addressed in next section.

5.7 Gap Analysis Between the Present Domestic Regulations, the JICA Guidelines for Environmental and Social Considerations, and the World Bank Safeguard Policy

➤ Current Issues with Environmental Approval Process in Brazil

As mentioned earlier, there is no significant difference in the environmental clearance process among Brazil, WB and JICA's procedures. One of uniqueness in the environmental approval process in Brazil is that there are three different licenses to be obtained before project of concern can start its operation. This process begins with the project owner and/or developer

applying for a preliminary license (LP – Licença Prévia) in the preliminary stage of project planning and design, when different locations and technological alternatives can be considered. The project owner and/or developer's team carries out the necessary environmental studies, which are defined beforehand and later reviewed by the relevant environment agency. These take the form of an Environmental Impact Study (EIA – Estudo de Impacto Ambiental) and its Environmental Impact Report (RIMA – Relatório de Impacto Ambiental) .

With the LP, the project owner and/or developer should elaborate the engineering design for the project following the conditions and measures defined in the LP in order to apply for an installation license (LI – Licença de Instalação). If the LI is given, the project owner and/or developer can start the implementation of the project of concern. When the project is completed and ready to start, the project owner and/or developer requests an operation license (LO - Licença de Operação), which is issued after the environment agency checks if the conditions established in the LP and LI were met.

Recently, several environmental concerns, disputes and/or conflicts, were raised at large-scale infrastructure development projects in Brazil. Those are mainly due to the facts that appropriate program of environmental and social considerations were not incorporated at the early planning stage of the project cycle, and the project owners and/or developers proceed relevant engineering design works without satisfactory mitigation measures implementation plans.

➤ **Comprehensive ToR Development at early project Planning Stage**

In other words, most of those environmental disputes, mentioned above, would be able to be avoided or lessened if competent agencies such as FUNAI and IPHAN and/or organization can participate or were invited to discussions. Those involvement shall be held at the early project planning stage, and then, potential critical environmental and social factors can be identified through intra-disciplinary discussions and relevant management program including mitigation measures are developed in order to make the design of the development project of concerns more environmentally sound and sustainable one.

➤ **Public Participation**

In general, the public participation process is required within the current EIA regulation in Brazil. However, most of them are conducted at the later planning stage. So, when some possibilities of new alternative development plan is presented from communities and/or other stakeholder groups, it is difficult to feedback those comments and/or suggestions into the planning process and/or design framework since most of design works are at almost final stage. To mitigate this situation, it would be beneficial to develop comprehensive PI scheme that

would make public participation at the early planning stage possible, reflecting those opinions into the project design.

➤ **Project Categorization**

Also, when the area of concerns of project of concerns is huge and contains some important sites such as the national park, any clear guidelines regarding the project demarcation among federal, state and municipality do not exist yet, so that, entire development project tends to be segmented into several parts without overall supervising administration. As a result, entire environmental management framework, to be required for the implementation of appropriate environmental and social considerations, does not become coherent one.

Some State governments have guideline for this project categorization for the environmental review. However, the overall legal framework of this project categorization for the environmental clearance is still not defined clearly although there were great improvements so far, compared with past cases.

➤ **Credibility of Environmental License**

WB Environmental and Social unit in Brazil found that actual environmental clearance process, in particular, conducted at state and/or municipality government levels, need more efforts to catch up with relevant WB environmental and social policies. So, recently, WB Brazil Office shifts to focus on the capacity development program for the environmental administration, conducted at state and municipality level, in order to strengthen overall environmental governance including improvement of relevant EIA/RIMA studies. So, recent WB-funded development projects tend to be "a package type" one that combine soft and hard components altogether while making the entire study period more than several years to improve overall capacity of the environmental reviews to be conducted by C/P officials.

Chapter 6 Land Acquisition and Involuntary Resettlement

6.1 Legal Framework

6.1.1 Backgrounds¹

(1) Sesmaria System

Portugal's occupation of Brazil is a unique episode in the history of the European colonization of the Americas. Unlike Spain, Portugal applied a model of absolute centralized administration to her newly acquired territories, instead of promoting colonial institutions. The colonies utilized the same political, administrative, and judicial organization and the same legal norms—especially the *Ordenações do Reino* (the Kingdom's Legal Rules)—as the metropolitan territories. Brazil and Portugal's legal professionals were educated at Coimbra University in Portugal. Indeed, the Portuguese Crown considered the Brazilian territory as integral a part of its property as the Moorish territories that the Kingdom had reclaimed in the eleventh and fourteenth centuries.

As a result, the colonization of Brazil followed the same pattern of development that Portugal followed in the fourteenth century. The Crown employed the *sesmaria*—a system of land management first used under Ferdinand I in 1375—to distribute property among private entrepreneurs and to promote colonization. Because the land remained public property, it can be said that the *sesmaria* in modern legal terminology as a kind of gratuitous concession of the right to use the land, subject to a series of conditions such as limiting the land's occupation and restricting its use to certain stipulated economic activities. The *sesmaria* could be transferred by contract or through inheritance, but restrictions on the right of use could not be altered.

The Land Statute, approved in 1850, created private property in Brazil for the first time. The statute mirrored the Continental Law's definition of the concept of dominium by treating private property as an individual and absolute right. It converted *sesmaria* rights holders into landowners of the estates they already held, and extended the same ownership rights to anyone who possessed public land for at least 100 years before the statute's passage. In this way, the statute perpetuated the concentration of rural property in the hands of the same few who held the land in colonial times, effectively blocking the distribution of land to the European and Japanese immigrants who came to Brazil after independence. The Brazilian *sesmarias* closely resembled those distributed in southern Portugal: they were attached to large tracts of land, concentrated in the hands of a small group of *latifundium* estate landowners, employed intensive slave labor, and specialized in cultivating monoculture crops for export.

¹ Cunha A.S., *The Social Function of Property in Brazilian Law*, *Fordham Law Review*, 2010

The unique process that led to Brazil's independence meant that any changes from the Portuguese legal system developed extremely slowly, especially in the domain of Private Law. Although the Brazilian Constitution of 1824, which created the new Brazilian Empire, stipulated that a Civil Code would be written, a lack of consensus prevented the drafting of a definite version. And while nineteenth-century efforts to codify a Private Law statute did result in the creation of some important documents, the first Brazilian Civil Code was not adopted until 1916, twenty-seven years after the formation of the Brazilian Republic in 1889.

With independence came the dissolution of the sesmaria system, leaving Brazil with no legal instrument governing land appropriation. This made it extremely difficult to promote agrarian frontier expansion and to grant rural credit in the absence of reliable collateral. Thus, in 1850, the Brazilian Parliament approved Imperial Law No. 601, popularly known as the Lei de Terras (Land Statute), along with other attempts at structural economic reform aimed at preparing the country for the gradual abolition of slavery.

(2) Land Statute (1850)

The Land Statute created private property in Brazil for the first time. The statute mirrored the Continental Law's definition of the concept of dominium by treating private property as an individual and absolute right. It converted sesmaria rights holders into landowners of the estates they already held, and extended the same ownership rights to anyone who possessed public land for at least 100 years before the statute's passage. In this way, the statute perpetuated the concentration of rural property in the hands of the same few who held the land in colonial times, effectively blocking the distribution of land to the European and Japanese immigrants who came to Brazil after independence.

This Land Statute had no social concerns. Its main aim was preventing immigrants and former slaves from becoming landowners. Rather than promoting the settlement of new families in rural areas and redistributing land, it deliberately inflated property values by creating a scarcity of estate deeds. In transforming rural estates into commodities, it created a substitute for slave ownership to deal with problems of capital immobilization, value reservation, and provision of debt collateral.

(3) Civil Code and City Statute (2001)

The first draft of Civil Code was prepared in 1916. This draft Civil Code originally contained an innovative limitation on the exercise of property rights by providing that "this statute protects, within the limits of the law, the owner's right to make whatever use he sees fit of his property, and to claim this property, in the case of corporeal goods, from those who unlawfully possess

it.” However, the Federal Parliament omitted this text from the final version, which simply provided that “this law assures to the owner the right to use, enjoy and dispose of his property, and to recover it from the power of whoever unjustly possesses it.”

Because the Federal Parliament omitted it from the 1916 Civil Code, the social function of property remained a mere legal principle until the Brazilian Constitution of 1934 established it as a constitutional principle. In its bill of individual rights, the Constitution established that “the right of property is protected, provided it is not exerted against any social or collective interests, in the forms determined by the law.”

Debate concerning the convenience and necessity of a new Brazilian Civil Code started as early as the 1940s, during World War II. In 1969, the Ministry of Justice appointed a group of seven jurists to write a draft. Their draft was sent to Parliament in 1975, approved by the Lower House in 1984, by the Senate in 2001, and finally promulgated in 2002. One way the 2002 Civil Code expresses this “social sense” is its provision for “a new concept of property, based upon the constitutional principle that the function of property must be social, [that] overcomes the interpretation according to which . . . property is an exclusive function of the interests of individuals, owners, or possessors.”

According to Brazilian legal doctrine, the idea of “any social or collective interests” encompasses the concept of a social function of property; it thus acquires constitutional status and may be put into effect according to “the forms determined by the law.” In other words, social function becomes an external limitation that the government must impose on the exercise of property rights. Pursuant to this authorization, limitations were enacted in normative instruments of urban policy, such as the Lei de Loteamento para Venda de Terrenos em Prestações (Statute Concerning the Plotting of Land to be Sold in Installments) and the Estatuto da Cidade (City Statute, 2001), as well as legislation concerning agrarian policy, such as the Estatuto da Terra (Land Statute, 1964) and the Lei da Reforma Agrária (Land Reform Law, 1993).

The 1988 Constitution introduced institutional and legal processes for the democratization of the state. It also opened up possibilities to resolve a range of problems stemming from social inequality in cities in Brazil, particularly by recognizing the right of the citizens to participate in formulating and implementing public policy, and to promote public control of the state. In Brazil, in order to implement the principles and instruments laid down in Article 182 of the Constitution (Chapter on Urban Policy), specific federal legislation was required. Twelve years after the promulgation of the 1988 Constitution, the urban reform movement finally succeeded in obtaining congressional approval for Law no. 10,257, known as the City Statute (2001).

6.1.2 Land Tenures

(1) Introduction

In Brazilian law, various instruments can be used for the legal recognition of the use, possession or ownership of urban land. These instruments are specifically laid down in the City Statute (2001) and the civil code (2002).

The civil code established rules for personal and real rights. Personal rights may be subject to some free choices between the parties, who can create some own rules. For a personal right, it is necessary to have two persons, the creditor and the debtor of some obligation. A real right is the relation between one person and a piece of property. In accordance with Article 1225 of the civil code, rights to the following are considered real rights: property, land, the use thereof, use of housing, access facilities, the right of the buyer of the property, the pawn or pledge and the mortgage. Real rights can not be a subject of free choices between the parties, and they cannot create their own rules. The rules governing real rights are regulated.

For example, to be valid, the manner of buying and selling urban or rural property must be in accordance with the rules. According to Article 1277 of the civil code the ownership of the urban or rural property is considered to be acquired by the purchaser only when the act is registered in the Public Register. It is important to stress that the types of rights considered below, with the exception of rental, are considered real rights by Brazilian law.

(2) Zone of Special Social Interest (ZEIS)

The Zone of Special Social Interest (ZEIS) is one of the instruments for land ownership regularization foreseen in Article 4 (V) (f) of the City Statute. ZEIS is a special zoning category that allows variable rules to be applied to the use and occupation of land in projects of urban land ownership regulation.

It applies to areas that are presently occupied in discordance with the formal legislation as regards the allotment, use, occupation or construction standards. The objective is to safeguard the right to adequate housing.

(3) Tenure Types

1) Ownership

- ✓ Buying and selling

Ownership through purchase is the most common tenure system provided for in the civil code for the formal land market of urban property acquisition. It is a contract agreed between the seller and the purchaser for transfer of the property deeds on the payment of an amount covering the value of the real estate in question. Having signed the preliminary or final deeds, the owner is obliged to sell his/her property under the agreed conditions, and undertakes to provide the final ownership deed when all agreed payments have been received. The buyer of the real estate will then be recognized by the authorities and community as the new owner and the deed drawn up in his/her name is registered and filed in the public property registry. If the buyer or seller is a woman, the transaction can be completed in her single or married name at her choice. If a couple is legally married the joint registration of their property is obligatory. The public registry must include the name of both in accordance with the civil code.

✓ Donation

If the landowner agrees to donate his/her property to another person, a donation or transfer contract to other person shall be made without payment. This approach has been utilized by the municipal and state governments in providing popular housing to families in situations of risk, such as during floods and landslides. In these programmes, the land belongs to the state or the municipality and in some case a partnership is created between the two authorities. Through this partnership the state government constructs the housing on municipal land and afterward donates both land and housing to the beneficiary of the programme. The donations include the titling of the land and property in the name of the beneficiary. In this case, the cost of the land and the titling is free to the beneficiary. The ownership registration process is the same as used in the formal real estate market. In some programmes resources for the cost of registration of the donation title are included.

2) User Rights

✓ Special Concession for Use of Public Lands for Housing Purposes

Housing rights are also recognized for people and families who are in irregular possession of urban public areas, conferring, in this case, not the ownership of areas involved but the right to possession and use. Each level of government must recognize this special right to lands under its jurisdiction in accordance with the terms of Provisional Legal Measure #2,220 of September 4 2001. Article 1 of this measure stipulates the criteria that must be met by the beneficiaries, which are generally as follows:

- The area occupied must not exceed 250 m²;
- The resident must prove his/her uninterrupted possession for five years prior to July 30, 2001;

- The land is used only for residential purposes;
- The occupier neither owns nor has a right to any other public property; and
- The occupier has not been legally notified by the public authority to vacate the property.

Candidates fulfilling the requirements for possession may apply for a special concession with the public authority. If the authority refuses or does not decide within 12 months of registration of the completed application, the candidate has the right to require the possession through court (Article 6). Where the candidates are low-income groups the public defense or some legal service can claim their rights in the court.

6.1.3 Legal System and Governance Structure

Brazil is a federal republic, with a representative system and democratic regime in accordance with the Brazilian Constitution of 1988. The Brazilian state is organized into the following federal units: One union, 26 states, 5,559 municipalities and one federal district (the capital Brasilia). All of these units are autonomous. The Brazilian federal system, as an innovative component of political decentralization, recognizes the municipality as a component and autonomous member of the federation, along with the union and the states. Municipalities can approve their own municipal constitution. As a general rule, matters of predominant international and national interest are the responsibility of the union; all matters that not listed as exclusive federal powers by the Constitution are the responsibility of states. In Brazil, there is no regional jurisdiction and matters of local interest fall within the responsibility of the municipalities.

As a federal system, there is a division of legislative jurisdictions and political-administrative responsibilities and obligations between the union, states and municipalities. The legislative jurisdictions are those related to the formulation and adoption of legislation by the federal, state and municipal parliaments. The political-administrative responsibilities are related to the implementation and monitoring of public policies and programmes – in other words, everything related to activities that are mandatory to the union, states or municipalities. The rights and fundamental guarantees of the people are supposed to be implemented through legislation and public policies, which seek to fulfill the fundamental objectives of promoting social justice, eradicating poverty and reducing social inequalities.

(1) Major Land Laws

There is a great effort of the building sector representatives to re-establish the conditions for a mass production as it happened in the past and they are pushing government to develop a new regulatory framework. From the side of the government there is no such a policy, although many initiatives have been tackled since the 90's when new housing programs and funding were

incorporated to the Housing Financing System (SFH). The institutional and regulatory framework is changing and many laws have been approved recently. Some of them are looking closely on the interest of the housing construction economic sector and others related to an urban reform.

Table 6.1.1 summarizes major land-related laws, implemented in Brazil. In terms of urban development, the Law 9785/99 is important in terms of promoting changes in land regulation, recuperating municipalities competence to regulate urban land, as established in the Constitution and replacing a law of the military regime. The 1964 Land Statute (Law No. 4504) regulates rural lands and governs Brazil's redistributive land reform program and the related issues of transfer and acquisition. This law strengthens the rights of tenant farmers and sharecroppers. The Law on Union Land (Law No. 9,636) deals with regularization, administration, alienation and leasing of union lands (i.e., government lands)

Table 6.1.1 Land Law of Brazil

Law	Descriptions
Federal Law 6766/79 (1979) amended by Law 9785/99 (1999) on division of urban land	Regulates the division of urban land into allotments or building sites, as well as the establishment of urban standards and requirements for adequately creating such divisions. Such standards and requirements include: the minimum acceptable infrastructure, the highway system, urban and community services, uses of public areas; the responsibilities of private parties (land owners, entrepreneurs) and the public authorities; and the definition of urban crimes. The 1999 amendment provides legal instruments to protect the right to housing and strengthen tenure security.
The Land Statute Law 4504/64 (1850, revised in 1964)	Regulates "the rights and obligations concerning rural property assets for the purposes of implementing Agrarian Reform and Agricultural Policies" (Article 1). Agrarian reform is understood as a "collection of measures that aim to promote a better distribution of land by modifying the traditional regime of possession and use in order to better attend the principles of social justice and obtain an increase in land productivity" (paragraph 1). The law also proposes to assure the opportunity of property access to all, under the condition of the fulfillment of land's social function (Article 2).
The Law on Union Land 9636/9	Deals with the regularization, administration, alienation and leasing of lands belonging to the union. Article 1 refers to planned regularization and utilization, and authorizes the union to institute action in the Secretariat of Union Assets and by the Ministry of Planning, Finance and Management, for the identification, demarcation, registration, inspection and regularization of occupation of its land. To fulfill these objectives, the union is authorized to ratify conventions with the states and municipalities in whose territory the lands are located.
City Statute (2001)	The City Statute establishes a new chapter in the democratic management of the city, and defines the urban policy councils and urban conferences as democratic management tools. To implement the City Statute, the Ministry of the Cities considers proposal from the National Forum of Urban Reform, which call for a conference to draw up the constitution of the National Council of the City. The basis for establishing this body is derived from the system of direct democracy and the principle of popular participation enshrined in the Constitution.
Civil Code (2002)	This new civil code deals with family rights, inheritance rights, possession and property rights. While previous civil code of 1916 referred to a person as a "man", the new code employs the word "person". With relation to the ownership of property of such as union, equality between men and women is assured in the acquisition, management and administration of goods brought into the union or acquired after the formation of the family (Article 1642).

Source Land Tenure, Housing Rights and Gender Review Series: Latin America, UN- Habitat, 2005

(2) The Concession of Real Right

The Concession of Real Right (CDRU) is an instrument for the regularization of informal settlements on public land. It can be used in cases of the occupation of public or private areas, where the requirements of the special concession or adverse possession are not applicable or cannot be met by occupiers. The CDRU was created by Decree 271 on February 28 1967 and is regulated by the City Statute. It consists of the real right of use applicable to public or private lands, for the purposes of urbanization, industrialization, building, land cultivation or any other social interest use.

(3) Cession of Possession

Article 26 of Federal Law 6766/70 on the division of the land established this instrument for the regularization of irregularly occupied private land or property. The municipality, the state or the union may concede the possession of such private assets to the irregular residents, if the property in question had already been expropriated for the execution of social housing projects, and governmental temporary possession (by force of the expropriation) had been registered in the public property registry. The Article 26 instrument must be signed between the municipality or other governmental authority and the beneficiary population by the means of a contract specifying all the obligations and duties, the financial clauses and the possibility and terms of its conversion into an ownership title.

(4) Surface Rights

The right of use of land surface has only recently been introduced by means of Article 21-24 of the City Statute, although it is also generally regulated in Article 1369 to 1377 of the civil code. This City Statute defines surface rights as property rights that can be separated from the ownership of the land and links their implementation to the collective interest of assuring access to the land. Article 21 of the City Statute establishes that “the urban property owner shall concede to another party the right to the use of the surface of his/her land, for a specified or unspecified time, through public deed registered in the public deeds office.

The surface right includes the right to the land, the subsoil or the aerial space related to the land. The person receiving the surface rights will be entirely responsible for the fees and taxes on the surface of the property, also accepting responsibility proportional to their effective share of occupation. The surface rights can be transferred to the third parties. Upon the death of the person receiving the surface rights, their rights are transferred to heirs.

6.1.4 Land Management System

(1) Introduction

The responsibility for the management of land in Brazil is divided among the federal union, the state and the municipalities. Each federal entity has its own organization in the spheres of the executive, legislature and judiciary that form a complex system of land management. Moreover the National Association of Registries, an association of registers, provides guidelines to the register. The union also has federal legislation about public registration. Table 6.1.2 summarizes levels of land management jurisdiction in Brazil.

The public register systems and cadastres fit into state level. However, the union and the municipalities have their own cadastre systems to register the lands and the buildings belonging to them, but these administrative cadastres do not replace the public system, which is always at state level.

Table 6.1.2 Levels of Land Management Jurisdiction

Union level

- **Legislature**
 - National Congress (composed of Chamber of Deputies and the Federal Senate)
- **Executive**
 - Departments of Justice, Metropolitan Affairs, Urban Development, Agrarian Development
 - Housing and Land Public Companies
 - Department on Public Assets
 - Land Institute
 - State Attorneys
- **Judiciary and Institutions essential to the operation of Justice**
 - General Inspector of Administration
 - Affairs of Justice
 - Special Courts of Public Registry
 - State Public Prosecutors
 - Common Courts
 - Public defender
 - Public Registers - Registration Services

State level

- **Legislature House of Representatives**
- **Executive**
 - Ministries of the City, Planning, Agrarian Development
 - Justice
 - Secretary of the Assets of the Union
 - INCRA
 - Palmares Cultural Foundation
 - National Indian Foundation (FUNAI)
 - Union Attorneys
- **Judiciary and Institutions essential to the operation of Justice**
 - Federal Justice
 - Supreme Federal Court
 - Superior Court of Justice
 - Federal Regional Courts
 - Federal Public Prosecutor
 - Federal Public Defender

Municipal level

- **Legislature Municipal Chamber**
- **Executive Municipal Departments of**
 - Planning
 - Urban Development
 - Housing
 - Municipal Assets
 - Land or/and Urbanisation
 - Finances
 - Legal Affairs
- **Institutions essential to the operation of justice**
 - Municipal legal assistance services
 - Municipal attorneys

(Source: Land Tenure, Housing Rights and Gender Review Series: Latin America, UN- Habitat, 2005)

Although Brazil is a federal state, the responsibility for the management of land is divided among the federal union, the state and the municipalities. Each federal entity has its own organization in the sphere of the executive, legislature and judiciary that form a complex system of land management. Current federal jurisdiction over public land is summarized in Table 6.1.3. Management of each type of land is described in following section separately.

Table 6.1.3 Federal Jurisdiction over Public Land

Type of land	Responsibility
Urban union lands	National Secretary of Union Assets, together with the Ministry of the Cities
Rural union lands	INCRA, together with the Ministry of Agrarian Development and the National Secretary of Union assets
Indigenous land	FUNAI, together with the Ministry of Justice and National Secretary of Union Assets
Quilombo land	INCRA, together with the Ministry of Agrarian Development and National Secretary of Union Assets

(Source: UN- Habitat, 2005)

(2) Union Land: The National Secretary of Union Assets

The National Secretary of Union Assets, an organization subordinated to the Ministry of Planning, is responsible for the administration and conservation of (urban and rural) union land assets, and for adopting the necessary measures for the regulation of these assets. All administration activities related to union lands fall under the responsibility of this office, including the provision of the required certifications and registrations at the competent registries; the authorization of lawful occupation and the corresponding registrations; the establishment of guidelines for the use of these lands; the establishment of guidelines for the use of these lands, the demarcation of boundaries; identification, classification; and all other related aspects.

(3) Urban Land: The Ministry of Cities

The Ministry of Cities is responsible for the policies of urban development, including housing, sanitation and transportation policy. The ministry has a National Council of the City, formed by 70 members of the government and various segments of civil society, and which defines the actions and programmes related to national urban land policies. The national Secretary of Housing is responsible for the implementation of the national housing policy. The National Secretary of Urban Programmes is responsible for implementation of the City Statute, such as the National Campaign for Participatory Master Plans in Cities. Their mandate also includes the definition and implementation of a land tenure regularization policy in urban areas.

(4) Rural Land: Ministry of Agrarian

Federal Law # 10,267/01 created a Public System of Land Registry that, among other things, unifies the rural properties registry and exchanges information with the public registry, adding to the information on rural properties and conferring greater control over information on public and private property. It also created the National Cadastre of Rural Properties (CNIR), with a common information base managed by INCRA and the Department of Federal Revenue, and shared with public institutions of production and users of information on rural environments.

The Ministry of Agrarian Development, through INCRA, is responsible for the identification, delimitation, demarcation and titling of lands occupied by the descendants of the Quilombo communities, without interfering with and respecting the state, Federal District or municipality jurisdictions.

(5) Indigenous Land: FUNAI

FUNAI is a federal government foundation subordinate to the Directorate of Land Affairs under the Ministry of Justice, and is responsible for the control and coordination of all indigenous matters, for contacts with the tribal leaders and for the regularization of indigenous lands. Pursuant to Federal Decree#1,775/96 within the Directorate of Land Affairs, the General Coordination of Boundary Demarcation has drawn up an agreed Manual of Technical Rules for the Demarcation of Indigenous Lands. This manual is applied to complement anthropological identification studies with the cartographic measurements necessary for the delimitation of the boundaries of the traditional indigenous lands. These borders are inspected (by contracted third parties) to ensure conformity with the law and to report violations to the Directorate of Land Affairs. Notwithstanding this structure, invasions of the indigenous lands occur repeatedly, especially where valuable deposits of natural resources are involved.

(6) Quilombo Land: Palmares Cultural Foundation

The Palmares Cultural Foundation was established by Federal Law no. 7,668 of 1988 to further the constitutional principles of the reinforcement of citizenship and the identification and preservation of ethnic minority groups that have contributed to the formation of Brazilian society, such as the cultural and economic values deriving from the African and native Brazilian influences. It is of fundamental importance in programmes related to land regularization, assisting and accompanying the Ministry of Agrarian Development and the INCRA in their efforts to guarantee the preservation of the cultural identity of the native Brazilians and the descendants of the Quilombo communities. Through its Administrative Resolution #6 of March 1, 2004, the Palmares Cultural Foundation also set up a general registry of the remaining Quilombo communities, to form a permanent record of the declaration of self-identification of these and related communities for land entitlement and ownership purposes.

The jurisdiction over the management of public lands at federal level is shown in Figure 6.1.1. List of key organizations at the federal land management is summarized in Table 6.1.4.

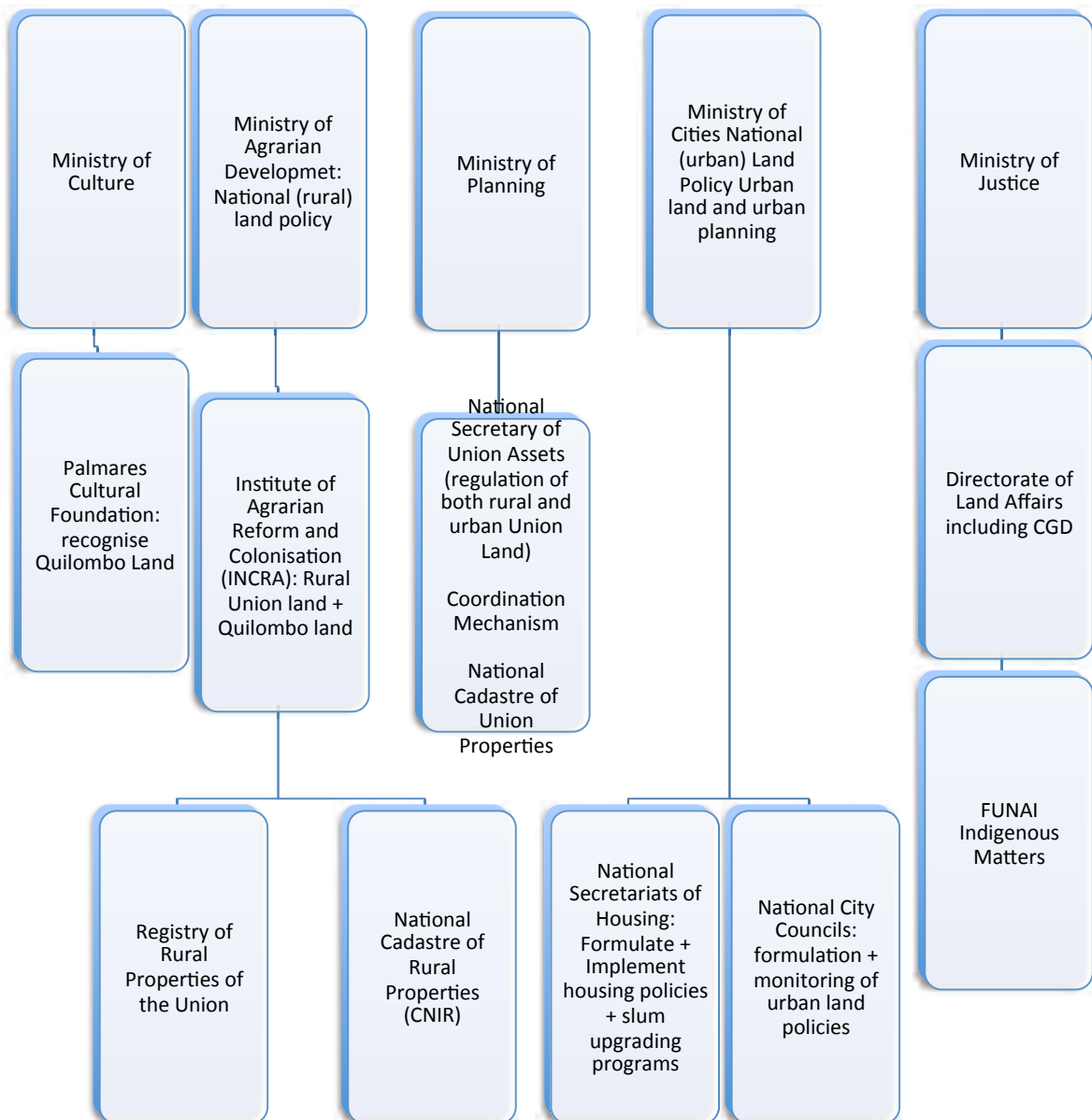


Figure 6.1.1 Relevant Organizations in Federal Land Management

(Source: UN- Habitat, 2005)

Table 6.1.4 Description of key Organizations at the federal Land Management

Organization	Descriptions
The National Secretary of Union Assets	<ul style="list-style-type: none"> Organization subordinated to the Ministry of Planning, which is responsible for the administration and conservation of urban and rural union land assets, and for adopting the necessary measures for the regulation of these assets. Related to union lands fall under the responsibility of this office, including the provision of the required certifications and registrations at the competent registries; the authorization of lawful occupation and the corresponding registrations; the establishment of guidelines for the use of these lands; the demarcation of boundaries; identification; classification; and all other related aspects.
The Ministry of Cities (MC)	<ul style="list-style-type: none"> Responsible for the policies of urban development, including housing, sanitation and transportation policy. Has National Council of the City, formed by 70 members of the government and various segments of civil society, and which defines the actions and programmes related to the national urban land policies. National Secretary of Housing, belonging to MC, is responsible for the implementation of the national housing policy. The National Secretary of Urban Programs is responsible for implementation of the City Statute, such as the National Campaign for the Participatory Master Plans in Cities. Their mandate also includes the definition and implementation of a land tenure regularization policy in urban areas.
Ministry of Agrarian Development and INCRA	<ul style="list-style-type: none"> Responsible for the identification, recognition, delimitation, demarcation and titling of lands occupied by the descendants of the Quilombola communities, without interfering with and respecting the state, Federal District or municipality jurisdiction (based on the Federal Decree 4887/03 and the Normative Resolution 16 from 24/3/04 issued by INCRA). Federal Law 10267/01 not only created a Public System of Land Registry that unifies the rural properties registry and exchanges information on rural properties, but also established the National Cadastre of Rural Properties (CNIR), with a common information base managed by INCRA and the Department of Federal Revenue, and shared with public institutions of productions and users or information on rural environments.
FUNAI	<ul style="list-style-type: none"> Federal government foundation subordinate to the Directorate of Land Affairs under the Ministry of Justice. Responsible for the control and coordination of all indigenous matters, for contacts with the tribal leaders and for the regularization of indigenous lands.
Palmares Cultural Organization	<ul style="list-style-type: none"> Established by Federal Law 7668/88 to further the constitutional principles of the reinforcement of citizenship and the identification and preservation of ethnic minority groups that have contributed to the formation of Brazilian society, such as the cultural and economic values deriving from the African and native Brazilian influences. It is of fundamental importance in programmes related to land regularization, assisting and accompanying the Ministry of Agrarian Development and the INCRA in their effort to guarantee the preservation of the cultural identity of the native Brazilians and the descendants of the Quilombola communities. Through its Administrative Resolution 6 of March 1 2004, it also set up a general registry of the remaining Quilombola communities, to form a permanent record of the declaration of self-identification of these and related communities for land entitlement and ownership purposes.
Federal and state public defender system	<ul style="list-style-type: none"> Provides free legal services and assistance to the low-income population following the article 134 of the Constitution. Therefore the public defender may act to promote land access for the low-income populations in land regularization processes that involve the federal public lands.

Source Land Tenure, Housing Rights and Gender Review Series: Latin America, UN- Habitat, 2005

(7) State Land Management

At the executive level, the states have autonomy to organize their administrative structures. To deal with housing and land issues, the states have established institutions such as the secretaries or departments of urban development, metropolitan affairs, housing and land companies,

agrarian development and public assets. Furthermore, some states have created land institutes, with cartographical services, to handle matters such as the identification and registration of unregistered or abandoned land, surveying of idle and inadequately used lands, and provision of technical assistance in the execution of policy.

At the judiciary level, the states may act in matters concerning the rights of possession of private or public state and municipal land; to settle family disputes concerning possession or ownership of land, buildings and houses; or disputes arising from marriage, inheritance or domestic violence situations. Key organizations of the state land management are summarized in Figure 6.1.2.

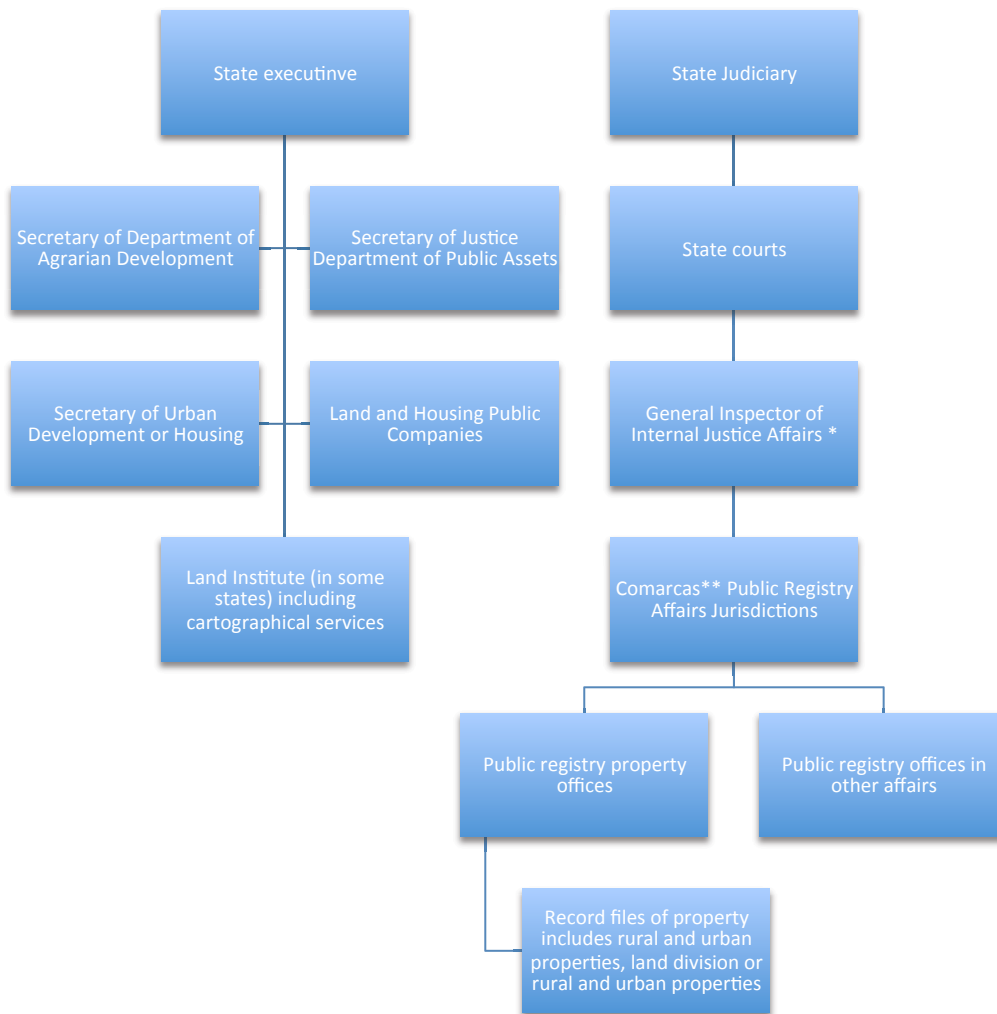


Figure 6.1.2 Organizations of State Land Management

Note: *The General Inspector of Internal Justice Affairs inspects, disciplines and provides administrative orientation of criteria and procedures of the Public Registries. It also approves special regulations (provimentos) on land registration

**The State Courts are administratively divided into regional districts called comarcas. A comarca can attend to two or a large municipality like Sao Paulo. Each comarca may have specialized judgeships organized into special jurisdictions.

Source: Land Tenure, Housing Rights and Gender Review Series: Latin America, UN- Habitat, 2005

Concerning the role of public registry offices, the system of public registries at the state level,

regulated by Federal Law 6015/76 deals with the legalization of possession and ownership of land. The federal Law 6015/76 contains general rules on registration of different kinds of property tenure. This law is mandatory to the public registry property offices, which are considered auxiliary services of the state judiciary. The state law on the organization of the state judiciary defines the organization and the territorial jurisdiction of the public registry property offices.

(8) Municipal Land Management

In accordance with the Brazilian Federal Constitution of 1988 the municipalities are responsible for fostering proper land use management by planning and monitoring the use of subdivisions and urban land occupancy. Master Plan, approved by the Municipal Council, is mandatory for cities with over 20,000 inhabitants and is the basic instrument for land development and urban expansion policy. Municipalities are also required by federal law to have zoning codes and a complete classification of all land areas by type of land use permitted.

The municipal administrative departments (or public companies) for urban or housing development also play an important role in the day-to-day processes of land regularization and upgrading. All municipal land is registered in the city archives along with information about its use, the beneficiary and the kind of tenure. The land assets are controlled by the financial secretary and specialized departments of municipal attorneys who also have the duty of promoting the protection of municipal green areas, building or monuments considered part of the historical or cultural heritage, and for social housing. To facilitate all these activities, complete and detailed land and public asset registry files are essential.

Furthermore, the municipality also needs a great deal of detailed information on the type of possession or ownership of the individual allotments, so that the administrators may decide the most appropriate use for each area and contain real estate speculation. The great majority of Brazilian municipalities have a specific record file for individual urban property owners for tax purposes.

6.2 Land Acquisition Process and Relevant Organizations

(1) Outline

In Brazil, all lands are classified into public and private lands. Privately-owned land can be freely sold and purchased, with the following restrictions:

- Federal: land near the border and in national security areas, natural parks, protected environments, areas home to species in danger of extinction, areas of natural vegetation

cover, and Indian Reservations;

- State: limitations based on environmental regulations, water resources;
- Municipal: limitations based on urban land use, traffic congestion, noise, vibrations, visual pollution, and deforestation.

Foreign-owned businesses are subject to basically the same legal requirements as Brazilian businesses. Real property is registered in the National Registry of Deeds (cartório dos registros de imóveis) and at the land registry (cadastro) at the municipal level. In large cities, most of the register entries are fairly reliable. However in smaller, more remote cities, the records become less and less reliable.

(2) Land Acquisition Process

In Brazil, land acquisition and site development procedures are handled at the local level, and each municipality has its own set of regulations and procedures. The land acquisition and site development process is one of the most complicated components of the investment process in Brazil with several approvals and permits to acquire. The land acquisition process starts with identification of suitable land and checking the municipal zoning and master plans for its fitness for the intended industrial application. In the land identification stage, consulting with the Environment Authorities is informal, and no document will be issued. However, the investor may apply for a preview license (LF), which can take up to 3 months to be issued. The LF, although not mandatory, is strongly recommended for polluting industries such as chemicals.

Then, the investor needs to obtain a land use certification from the municipality and check with the State Environmental Authority for location fit. Prior to the acquisition of any real estate, a location approval should be obtained through a consultation by which the Municipality is asked whether the planned activity can be permitted in the location stated. Uses considered to be prohibited in any special zone or sector are subject to evaluation by the local authority after which contacting the Municipal Housing and Urban Planning Council (COMHURB) and the local planning board, may be on a preliminary basis and authorizes the location of the activity in return for public amenities or facilities proportional to the benefit obtained.

Once the State Environmental Authority approves the location, the investor should check the land size and its boundaries with the data register and request correction at the courts if necessary. Prior to acquiring urban land it is necessary to check data from Municipal Land Tax Registry Records (IPTU) with property title data from the Registry of Deeds. And prior to acquiring rural property it is necessary to check data from Federal Revenue tax booklets (ITR) with property title data from the Registry of Deeds. In case of discrepancies corrections must be requested, which can take several months. The investor should also check existing court liens on the property and obtain clearance certificates from judicial district authorities on current owners.

It may be necessary to make a topographic survey and correct the register entry. The description in the real estate register must be checked against the municipal land register, and sometimes comparisons must be made with each adjoining neighbor. If there are differences, each situation must be cleared up in court.

The final step is the transfer of the title at a notary office and subsequent registry in the National Registry of Deeds. Title to a piece of land is acquired by a Notarized Transfer of Title subsequently registered with the Registry of Deeds. To purchase and register a piece of land, if all documents are in order, the purchaser first must pay the real estate transfer tax (ITBI). Then a purchase and sale agreement is signed in the presence of a notary, who records the deed. This document is in most cases preceded by a purchase and sale commitment. The cost of the notarized document is proportional to the value of the real estate changing hands. The document is then registered with the Registry of Deeds, which formalizes the transfer of land. Registration with the Registry of Deeds takes 15 business days and costs R\$ 360.

The real estate transfer tax (ITBI) is paid at the Notary when the title is transferred. This tax is levied by the municipality and is approximately 6 % of the purchase price or the assessment on the property, whichever is higher. According to the Federal Supreme Court, the ITBI tax should be 2 %. However to get the 2 % rate it is necessary to file suit against the municipality through a writ of security (mandato de segurança). The lawsuit is apparently always successful but takes several months to complete.

Prior to the purchase, the following information on real estate is needed:

- Property title document. An inquiry to establish the identity of the owner of a property may take 5 to 30 days after which a registration certificate may be applied for;
- Urban land and buildings tax (IPTU) valid until the date of the purchase and sale agreement (for urban property);
- Certificate attesting that no real estate tax is owed to the municipality (for urban property);
- Certificate attesting that no federal tax on rural land (ITR) is owed (for rural property);
- Rural property taxpayer certificate issued by Brazilian Agrarian Reform Institute (IBRA) (for rural property);
- Document showing that no property expropriation procedure or project has been initiated by any municipal, state, federal, or metropolitan agency or other authority (both urban and rural properties);
- Document showing that no property conservation procedure or project has been initiated by any local, municipal, state, or other authority (urban and rural properties);
- Property Certificate and Twenty-Year Certificate (titleholder records for the last 20 years).

If the current owner of the property is an individual, the following information and certificates

on sellers prior to the purchase are needed:

- Up-to-date certificate from courts dealing with civil matters and federal crimes in the judicial district of the place of residence of each seller and where the property is located, covering a period of 10 years;
- Up-to-date certificates from all “organismos de protesto” in the judicial district of the residence of each seller and where the property is located, covering a period of 5 years;
- Explanatory certificates covering actions in process, listed in prior certificates;
- Certificate from the state judicial and regulatory supervisory body and also from the competent Federal Regional Court listing the courts that issued the protesto and are located in the judicial districts or sectors where the property is located and where the seller lives.

If the current owner of the property is a legal entity, the following information and certificates on sellers prior to the purchase are needed:

- Clearance certificates from the courts with jurisdiction in federal civil and criminal cases in the judicial districts where the principal owner of the company resides and where the company is located, covering a 10-year period;
- Up-to-date certificates from all protesto courts in the judicial districts where the principal owner of the company resides and where the company is located, covering a period of 5 years;
- Clearance certificates issued by the labor courts of the judicial district where the principal owner of the company resides or by the appropriate regional branch of the Ministry of Labor, covering a period of 10 years;
- Explanatory certificates regarding all actions referred to in the above certificates;
- Relevant sections from the Articles of Incorporation, existing amendments, and minutes of the meeting at which the company directors were elected and, if necessary, a full copy of the Articles of Incorporation and copies of minutes permitting sale of the property in question, all entered in the appropriate Registers;
- Up-to-date clearance certificate from the National Social Security Institute (INSS), valid for six months, in the name of the owner;
- Up-to-date debt clearance certificate 81 (Certidão Negativa de Dívida-CND) issued by the Federal Revenue Authority (Receita Federal) in the name of the owner;
- Certificate showing that nothing is owed to the Unemployment Compensation Fund in the name of the owner.

In general, municipalities offer support services and incentives for investors to locate in their districts. States also have support services for large investors and they may earmark certain private parcels for industrial zones, which they then promote. Municipal and state direct-investor-support agencies provide such services as searching for company sites and negotiating

with the public utilities. In São Paulo State, support is provided directly by the State Department of Science, Technology, and Economic Development, and in Campinas Municipality by the Department of International Cooperation. In Rio de Janeiro State, support is provided by CODIN and in Resende Municipality by the Department of Industry, Trade, and Tourism. Table 6.2.1 summarizes the outline of the current land registration process in Brazil.

Table 6.2.1 Summary of Land Registration Process in Brazil

No.	Procedure	Time to complete	Associated costs
1	Obtain a Labor Justice Certificate (Certidão da Justiça do Trabalho) from the Regional Labor Court	3 days (simultaneous with procedures 2, 3, 4, 5, 6, 7, 8, 9, and 10)	R\$ 5.53 + R\$ 5.53 for every additional page
2	Acquire 10 Certificates of Registries and Disputes (Certidão dos Cartórios de Protestos) from the Distributor of Disputes Registry	Less than a day (online procedure and simultaneous with procedures 1, 3, 4, 5, 6, 7, 8, 9 and 10)	R\$ 9.34 for each 5 year certificate (the total is BRL 93.40)
3	Acquire a Civil Distributor's Certificate (Certidão dos Distribuidores Cívies), a Fiscal Executive Certificate (Certidão de Executivos Fiscais) and a Bankruptcy Certificate (Certidão de Falências e Concordatas) from the City Court Office	1 day (simultaneous with procedures 1, 2, 4, 5, 6, 7, 8, 9 and 10)	R\$ 17.5 (x 3 certificates) + R\$ 5 for every additional sheet
4	Obtain a Certificate of Good Standing on Labor Debts (Certidão Negativa de Débitos Trabalhistas)	Less than a day (online procedure and simultaneous with procedures 1, 2, 3, 5, 6, 7, 8, 9 and 10)	no cost
5	Obtain a 20-year certificate (Certidão Vintenária)	Less than a day (online procedure and simultaneous with procedure 1, 2, 3, 4, 6, 7, 8, 9 and 10)	R\$ 37.01 per certificate
6	Request a Land-Tax Certificate and a Cadastral Certificate (Certidão de Dados Cadastrais do Imóvel) from City Hall	Less than a day (online procedure and simultaneous with procedure 1, 2, 3, 4, 5, 7, 8, 9 and 10)	No cost if obtained online
7	Acquire a Clearance Certificate from Tax Agency and a Federal Tax Clearance Certificate	Less than a day (online procedure and simultaneous with procedure 1, 2, 3, 4, 5, 6, 8, 9 and 10)	no cost
8	Acquire a Worker's Fund Certificate (Certidão de Regularidade de Situação do FGTS) at the federal bank- Caixa Economica Federal	Less than a day (online procedure and simultaneous with procedure 1, 2, 3, 4, 5, 6, 7, 9 and 10)	no cost
9	Acquire a Federal Justice Certificate (Certidão da Justiça Federal) from the Receita Federal - (Certidão de Distribuição de Ações e Execuções Cívies, Fiscais, Criminais e dos Juizados Especiais Federais Criminais Adjuntos junto ao Poder Judiciário – Justi	Less than a day (online procedure and simultaneous with procedures 1, 2, 3, 4, 5, 6, 7, 8 and 10)	no cost
10	Notary obtains company information	Less than a day (online procedure and simultaneous with procedures 1, 2, 3, 4, 5, 6, 7, 8 and 9)	no cost
11	Drafting of Public Deed of Purchase and Sale (Escritura Pública de Venda e Compra) by a Public Notary (Tabelião de Notas)	3 days	R\$ 3,569.07 (according to scale on www.anoregsp.org.br)
12	Pay transfer tax (ITB I) at the Municipal Bank	1 day	2% of the property value registered with the cadastre of the Prefecture
13	Register the escritura (transfer deed) at the appropriate Real Estate Registry with jurisdiction over the property to finalize registration and name change	15 days	R\$ 2,599.28
14	Update the land taxation records (IPTU – Imposto Predial e Territorial Urbano) to the new owner's name at City Hall	5 days	no cost

Source The World Bank, International Finance Group, doingbusiness.org, 2013

6.3 Involuntary Resettlement

6.3.1 Backgrounds

Involuntary resettlement has emerged as a critical issue in Brazil as it expands implementation of its massive Growth Acceleration Programme (Programa de Aceleração do Crescimento: PAC), which includes the world's largest slum upgrading programme. Brazil already has some policies in place to protect residents – the country's Federal Constitution ensures the social right to housing and dignified living conditions, and its City Statute regulates the use of urban property for the collective good. However, resettlements were being implemented on an ad hoc basis from project to project, with varying treatment and compensation for those affected.

In Brazil, although the implementing agency intended to provide the infrastructure and services resettlers needed, the federal government often did not or could not allocate the funds needed to do so. Eventually, this led to delays that further increased costs in total.

No specific law regarding the prevention of the involuntary resettlement exists yet. However, as mentioned above, Article 5 of Federal Constitution speculates that all persons are equal before the law, without any distinction whatsoever, Brazilians and foreigners residing in the country being ensured of inviolability of the right to life, to liberty, to equality, to security and to property. Recently, there are some movements to alleviate the negative impact of involuntary resettlement. In 2013, Brazil's Ministry of Cities approved a policy that could ease those growing pains. The initiative, developed with support from the World Bank, Inter-American Development Bank and Cities Alliance, is designed to protect citizens who are involuntarily resettled from their homes.

6.3.2 National Policy on Land Acquisition, Compensation and Resettlement

(1) National Land Policy

The National Plans for Development, the National Policy of Integration, the Development Area for the Amazonia, and the Development Area for the Central-West Region were all created in the 1970's to develop the infrastructure for regional development. The economic crisis of the 1980's put a halt to this initiative and resulted in a relative absence of land policy.

In 1988, when the new Federal Constitution (BRASIL, 1988) was passed, the Union was given more responsibilities on the “design and implementation of national and regional plans on land administration issues and on economic and social development matters”. It was also made responsible for the definition of guidelines on urban development. Following the 1998 Constitution, the Union, the States and the Municipalities are responsible for protecting the

environment. The Municipalities are responsible for the land administration of the urban land.

In the 1990's, the Multi-Annual Plan (1996-1999) set forth a framework that provided for a new stage of land planning with spatial references, since the Plan introduced national integration and development into the country's agenda. This experience continued in the second Multi-Annual Plan (2000-2003) as well as in the third one (2004-2007). Thanks to these Plans, land was used once again as a reference for public policies integration. Meanwhile, the State is no longer the largest investor, but an agent that tries to foster and encourage the private sector to make investments. The Multi-Annual Plan became the main guidance for Brazilian public policies.

In 2004, within the scope of the Multi-Annual Plan, the PPP (Public Private Partnership) Law was drafted to appeal to private investors, both national and foreign. The law also aimed at encouraging these potential investors to make investments in the areas the Government sees as priorities. The public private partnership agreement is a contract between the Government and private companies that legally binds them to implement or manage services and activities of public interest with funding and investment from the private sector.

The Government agrees to offer the private partner an additional revenue that would increase any income from the service provided to the public. The agreement is valid for a term of up to 30 years. When the public private partnership term is complete, the property of the asset goes to the State.

(2) National Resettlement Policy (2013)

Up until 2013, Brazil did not have specific national legislation on involuntary resettlement. Landowners affected by development projects were compensated through the application of the legislation on expropriation. Other socioeconomic impacts of development projects (including those related to land acquisition) were addressed through the environmental licensing process on a case-by-case basis. Given the lack of normative criteria for establishing the extent and limits of the responsibility of the project sponsor regarding social impacts, the decisions on the specific requirements for projects that involve resettlement were largely left to the discretion and professional judgment of technical staff.

In Brazil, there is no specific Legislation regulating the resettlement plan. Projects financed by international institutions follow their guidelines, such as WB and IDB. Projects financed by Banco do Brasil follow "Equator Principles", based on International Finance Corporation (IFC), WB, guidelines on various issues including involuntary resettlement of peoples. Projects financed by BNDES (National Bank of Social and Economical Development) follows a protocol of socio-environment responsibilities signed by the MMA, BNDES, Banco do Brasil, Banco da Amazônia, Caixa Econômica Federal and Banco do Nordeste.

In Brazil, the land acquisition - related legal framework has been already established, and when resettlement event occur, its relevant compensations are paid to PAPs although that compensation scheme sometimes does not cover fully (e.g., losses of business and/or job opportunities, associated with the relocation to new sites).

A study conducted by the WB in 2010-2011 noted that Brazilian authorities across the board recognized involuntary resettlement as a significant part of the country's development agenda, and that a guiding policy was needed. The Ministry of Cities approached the WB and the Cities Alliance for the necessary support.

Formally approved on 18 July 2013, the new resettlement policy regulates procedures and measures to be adopted in cases of involuntary resettlement of families from their homes or business (place of economic activities), caused by the execution of the Growth Acceleration Programme (Programa de Aceleração do Crescimento: PAC) and actions under the management of the Ministry of Cities. Some key elements of the policy include:

- Before any interventions proposed to the Ministry of Cities take place, an assessment must be conducted that includes a study of alternatives to involuntary displacement as well as effective economic solutions;
- People residing or developing economic activities in an area targeted for intervention should only be displaced in specific cases, such as if the intervention is critical for infrastructure projects, ensures adequate housing, eliminates hazardous risk factors, and protects environmental conservation areas;
- If displacement is inevitable, a plan for resettlement and compensatory measures must be drafted to ensure that affected people will be offered adequate solutions to offset the displacement. These plans must be approved by the Ministry of Cities or a designated alternate;
- Failure to follow the regulations will result in suspension of funds for the project.

6.3.3 Grievance Redress Mechanism (GRM)

The Public Prosecutor's Office (Ministério Público) and the Public Defender's Office (Defensoria Pública) have a role in protecting the interests of the affected population during expropriation and involuntary resettlement - working both in the judicial and extrajudicial spheres. In addition, the affected people have the right to access the courts to resolve complaints related to resettlement issues.

Indeed the Public Prosecutor can intervene in the expropriation process and investigate irregularities in the compensation procedures. His intervention in conflicts related to

expropriation and involuntary resettlement often results in the execution of Conduct Adjustment Terms (Termos de Ajustamento de Conduta, TAC)² among the project sponsor, the Public Authority, the Public Prosecutor, and the affected population.

As for the Public Defender, created by Article 134 of the Federal Constitution to provide full and free legal assistance to those who prove insufficiency of resources, he can have significant participation in cases of involuntary resettlement programs, which most frequently involve the displacement of low-income residents, or those without sufficient resources, who need the assistance of the state to guard against eventual illegalities perpetrated during the process.

In the judicial sphere, depending on the nature of the conflict, it is possible to submit the lawsuit to the Special Courts, as an alternative to Common Courts. In the extra-judicial sphere, it is possible to take the disputes to the chambers of arbitration.

6.3.4 Information Disclosure

According to Article 9 of CONAMA Resolution n 1, Jan 26th 1986 (sole paragraph), the RIMA, containing the information including land expropriation must be prepared and be presented for its proper understanding. Content must be translated into accessible language, using illustrated by maps, charts, tables, graphs and other visual communication techniques. So that, the advantages and disadvantages of the project of concerns as well as all environmental consequences of its implementation can be understood by various stakeholders.

Public hearing is included as a requirement under the environmental licensing process in 1986 (CONAMA resolution # 001 of January 23, 1986 (001/86)). Basically, communities and/or person to be affected by the project of concerns are invited with the presence of the executing agency in the project area. This consultations (it is called as “Public Audience” in Brazil) with the persons affected by projects (PAPs) are encouraging common practices in Brazil, and public hearings are required by the environmental licensing process. However, consultations are not always meaningful and effective. Consultations and public hearings are often a simple forum for disseminating information related to the development project. In some cases, the resettlement plan is presented to the affected population for the first time during the project’s public hearing carried out as part of the environmental licensing process, in which all aspects of the project are discussed. The language adopted during the public hearings used to be often too technical, which inhibits effective popular participation. The relevant documents are not always available before the hearings or are not presented in a form and language that are easily understandable by the affected populations.

² Supported by provision in article 5, paragraph 6 of Federal Law 7347/85 (Public Civil Action)

The cases that were evaluated as part of this study illustrate the importance of consultations with affected people and their participation in the development of resettlement and rehabilitation measures. Projects that facilitated the participation of the affected communities from the planning phase ensured more satisfaction among those resettled and prevented conflicts during project implementation. Urban projects that offered housing solutions developed with the participation of the affected families led to successful and conflict-free relocation. Successful resettlement programs adopted agile, transparent, and accessible communication channels (such as using the local radio and relying on public events and regular meetings), and in some cases established field offices at the resettlement sites.

6.3.5 Monitoring

The environmental licensing process and Brazilian legal frameworks applicable to resettlement do not explicitly require monitoring and evaluation of resettlement programs. However, the environmental licensing process requires the mitigation of social impacts, such as resettlement. Therefore, the license grantor has the mandate to require resettlement plans and to ensure that the implementation of plans is monitored and evaluated.

6.4 Major Issues and Challenges in the Current System

The 1988 Constitution guarantees land ownership as a fundamental right. The Constitution recognizes customary land rights of the indigenous groups (to be described in more detail in Chapter 7). In addition, Brazilian law allows land acquisition through unchallenged possession for a specified number of years. Also, the Constitution and the Land Statute allow for the compulsory acquisition of idle or underutilized land in the public interest (in Brazil, understood as interests of the state or government) or for redistribution to the landless with compensation to the landowner. However, in the event of a land-taking, such owners are often entitled to meager compensation.

In this case, the owner may obtain some compensation, such as the concession of the right to occupy another property instead of that which he/or she is losing. Where the public administration or others have provided the necessary infrastructure, the respective contracts shall specify that the resulting right of surface must be transferred to the population occupying the area.

Article 5(X) of 1988 Constitution recognizes the inviolable right to privacy and to compensation for property damages. The right to property is recognized as a fundamental right as long as the property fulfills its social function. The law provides for an expropriation procedure for the public necessity or social interest, but fair compensation shall be paid in case of expropriation. However, there are no provisions on evictions in the Constitution. More

detailed discussions of the gap between the currently existing regulations and JICA Guidelines for environmental and social considerations, recognized in events of expropriations, are summarized in following section.

6.5 Gap Analysis Between the Existing Domestic Regulations, the JICA Guidelines for Environmental and Social Considerations, and the World Bank Safeguard Policy

In Brazil, there is no specific Legislation regulating the resettlement plan although some projects financed by international institutions follow their guidelines, such as WB and IDB, as mentioned earlier. The land expropriation and resettlement, caused by development project, is one of significant land dispute and conflicts. Overall environmental and social considerations, paid to PAPs, needs more efforts to catch up with levels of those of reputable international standards such as WB.

➤ Land Disputes and Conflicts

As described earlier, Brazil's Constitution and the Land Statute allow for the compulsory acquisition of idle or underutilized land in the public interest. In Brazil, the systematic land acquisition legal framework has been already established and its relevant compensation is paid to PAPs to some extents although that compensation scheme sometimes does not cover fully (e.g., losses of business and/or job opportunities, associated with the relocation to new sites).

The land expropriation and resettlement, caused by the development project, is still one of significant land dispute and conflicts. Basically, the Government of Brazil is good to secure the land for any development projects, but overall environmental and social considerations, paid to PAPs, needs more efforts to catch up with levels those of reputable international standards. Among of them, the involuntary resettlement is one of significant issues. Sometime, the land expropriation and relevant demolition of PAP's properties are taken place before resettlement sites are not prepared yet. Eventually, some of those vulnerable people migrate into urban area and would make worse the environment and safety therein.

➤ Involuntary Resettlement

Regarding the involuntary resettlement, WB (OP 4.12 Annex A), IDB (OP-710) and JICA have same principle/or policy in order to make each assistances sustainable, and request recipient nations to pay attentions to those policies through the entire project implementation cycle. In Brazil's case, the involuntary resettlement of vulnerable peoples such as illegal squatters without proper land title, is still controversial although some small improvement signs to tackle current resettlement practice have been recognized recently.

In last November 2013, WB and IDB held joint meeting with the Ministry of Cities (MC), the Government of Brazil, in order to share same understanding of current involuntary resettlement-related issues in Brazil. In that meeting, MC reported that MC has revised its own Ministry's land-expropriation-related code, incorporating both WB and IDB's relevant involuntary resettlement policies, and then, new expropriation regulation was enacted in order to apply only for this ministry's urban development project. The preparation of this new code was initiated 2 years ago, and main features are i) planning of all MC-urban development project shall take participatory approach, (ii) pay appropriate and enough compensation to land title-less vulnerable people. In the long term, the concept of this MC's new expropriation regulation is expected to be disseminated to other ministries eventually while being incorporated into the future environmental and social clearance process at both State and Municipality levels in Brazil.

In ODA projects, the land take, required for the construction of the infrastructure development project, is one of the undertakings of the Government of Brazil. However, occurrences of many disputes and/or conflicts relating to the land take negotiations of private properties such as houses, shops and agricultural land due to development projects have been reported across the entire country, and some of those projects are suspended for the time being although the relevant legal framework for the land expropriation is clearly specified in Brazil.

Project proponents should follow the JICA Guidelines. As mentioned above, it is important to develop comprehensive RAP-related ToR at the early planning stage while conducting a relevant follow-up study to monitor PAPs such as vulnerable peoples. That follow-up study shall be conducted as the joint study of both Brazilian C/P and JICA in future JICA-funded development project. Also, it is essential to establish proper information disclosure and stakeholder meeting framework prior to land take process and design of this framework shall be conducted through series of discussions between Brazilian C/P and JICA.

Chapter 7 Indigenous People, and Ethnic Minority Groups

7.1 Social and Economic Situation

7.1.1 Background

In Brazil, minority groups include Afro-descendants (at least 40 %), Japanese (1 %), various indigenous tribe groups and Jews (data: Instituto Brasileiro de Geografia e Estatística 2000, UNDP). Figure 7.1.1 shows the distribution of indigenous tribe communities and its relevant protected areas in Brazil. Brazil currently has 197 forest-dwelling indigenous groups, living either on reservations or in one of four national parks. Among of them, Quilombora (part of Afro-Brazilian: note that Quilombola communities are descendants of slaves who fled Brazil's cotton plantations in the 19th century¹) is one of dominant ethnic minorities in Brazil. Figure 7.1.2 shows the number of certified Quilombora's communities by State in Brazil. More detailed descriptions of legal protection of those indigenous tribe and ethnic minority are described in following sections.

¹ The Guardian, <http://www.theguardian.com/global-development/gallery/2013/jun/24/brazil-Quilombola-land-rights-in-pictures>



Figure 7.1.1 Distribution of Indigenous Communities and its relevant protected Areas.

Source: Sistema de Monitoramento, <http://monitoramento.seppir.gov.br>

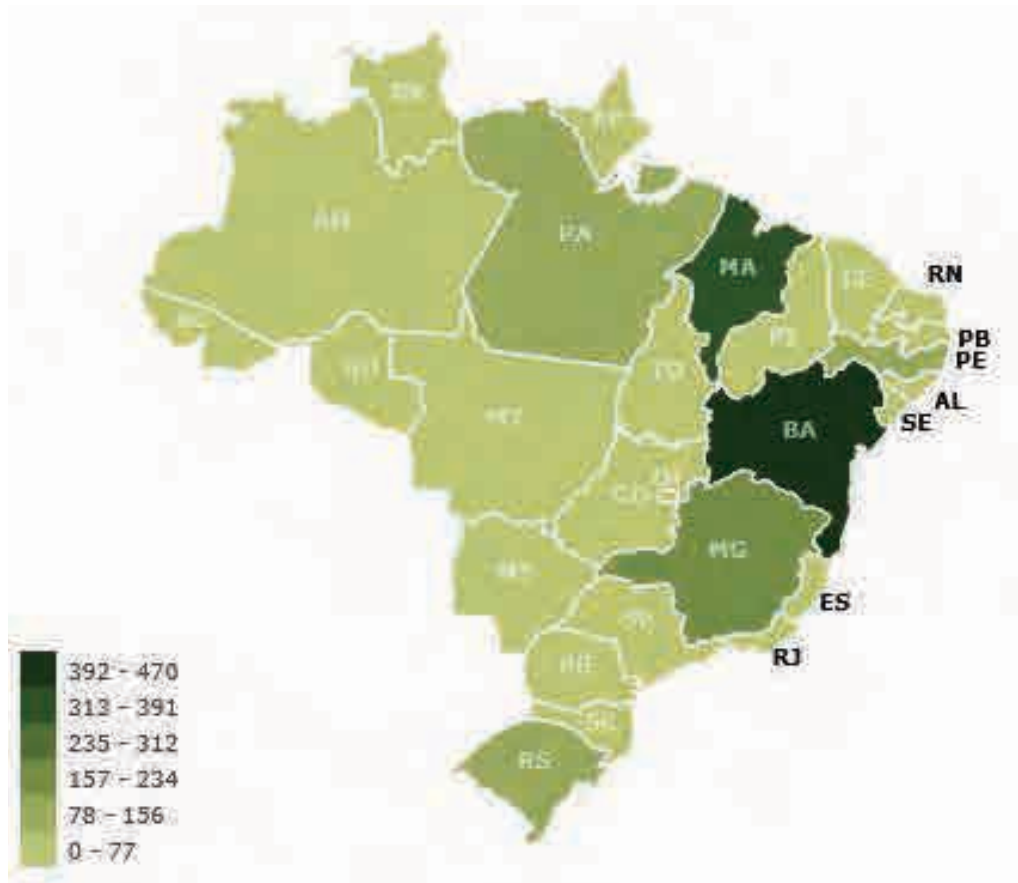


Figure 7.1.2 Number of Registered Quilombola Community

Source: Sistema de Monitoramento, <http://monitoramento.seppir.gov.br/paineis/pbq/index.vm?eixo=1>

7.1.2 Current Social Situations

(1) Over view of Indigenous Peoples and Ethnic Minority Groups

According to the Instituto Brasileiro de Geografia e Estatística, white people shares 48 % of entire population, and then, Mulato (43 %), Afro-descendants (8 %), Asian (1 %) and indigenous groups (0.4 %). Here, Mulatto is a term used to refer to a person who is born from one white parent and one black parent, or more broadly, a person of any proportion of European and African ancestry². Figure 7.1.3 show the ethnic and minority composition of Brazil. Table 7.1.1 summarizes ethnic and minority composition at both urban and rural areas in Brazil.

² Wikipedia, <http://en.wikipedia.org/wiki/Mulatto>

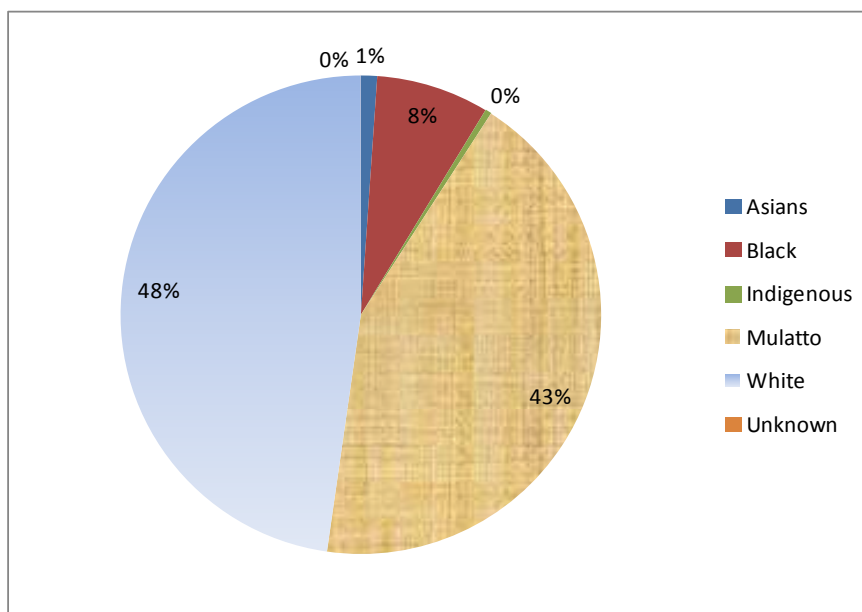


Figure 7.1.3 Population distribution by racial and/or ethnic groups

Note: total population is of 1,90,755,799 (see Table 7.4.1)

Source: UN Statistics Division, 2011

Table 7.1.1 National and ethnic group in Brazil

	Urban	Rural	Total
Asians	1,803,377	280,911	2,084,288
Black	12,430,469	2,087,492	14,517,961
Indigenous	315,192	502,771	817,963
Mulatto ³	66,158,924	16,118,409	82,277,333
White	80,212,529	10,839,117	91,051,646
Unknown	5313	1,295	6,608
Total	160,925,804	29,829,995	190,755,799

UN Statistics Division, 2011

Brazil currently has 197 forest-dwelling indigenous groups, living either on reservations or in one of four national parks. According to the 2000 Brazilian Demographic Census, about 730,000 people or 0.4 % of the total population identified as indigenous. Nevertheless many non-governmental organization (NGO) leaders and scholars dispute these numbers and opt to use the 0.2 % figure from the 1991 Census (Note: the entire population, summarized in 1991 Census is of 146,917,459⁴). Although over half of the indigenous population is concentrated in the northern Amazon states and the north-east of the country, there is also considerable indigenous population in the states of Mato Grosso do Sul and São Paulo, where 8.6 and 7.3 % of the total indigenous population reside respectively according to the Instituto Socioambiental.

It is reported that Afro-Brazilians are the majority in the north-eastern states. Large agricultural plantations and slave ports dominated this warm temperate region, but black people are also

³ Term to refer to a person born from one white parent and one black parent, or more broadly a person of any proportion of European and African ancestry.

⁴ Wikipedia, http://en.wikipedia.org/wiki/Demographics_of_Brazil

well represented in major industrial metropolitan areas throughout the country.

(2) Japanese Brazilian

Excluding the period 1941-50, Japanese migration to Brazil has continued uninterrupted since 1908. By the 1980s their numbers had reached 750,000. Today, Brazil has the largest Japanese-descendant population outside of Japan, and there are strong ties between the two countries. Prior to 1914 the majority of Japanese immigrants were contracted laborers. Later, efforts were made to establish agricultural colonies. Many also worked on coffee plantations. Although they were the subject of popular protest by xenophobic elements in Brazil in the early 1900s, Japanese and their descendants have become acculturated and accepted into middle-class society; trends in social mobility, industrialization and urbanization contribute constantly to this process. The largely Japanese-descendant Liberdade neighborhood (Little Tokyo, located in Sao-Paulo) is a strong example of the Japanese-descendant presence in the heavily industrialized city of São Paulo. Mixed marriages among Issei (first-generation immigrants) are almost unknown, although they are common among second- and third-generation immigrants in urban areas.

(3) Jewish Community

Brazil's Jewish population lives mainly in São Paulo, Rio de Janeiro and Porto Alegre, with small communities in Pernambuco, Bahia, Belém and Manaus. Since 1945, Jews have played a part in all areas of Brazilian political, economic and military life. Historically anti-Semitism was not a major social problem in independent Brazil, and Jewish communities were able to retain their religion while serving in public life, unlike in neighboring countries, such as Argentina, where conversion was required in order to obtain high-ranking positions in the military and government.

Brazil has several neo-Nazi, anti-Semitic organizations, active since the 1930s. Carecas (“skinhead” in English Translation) groups operate in Brazil, mainly in the cities of Rio de Janeiro and São Paulo. The Confederação Israelita do Brasil (CONIB), founded in 1951, represents all the Jewish federations and communities in Brazil and campaigns against anti-Semitism in the media and more generally in Brazil.

7.2 Legal Framework and Relevant Organisations

7.2.1 General View

On the international level, Brazil is part of the following conventions relevant to indigenous people and ethnic minorities' rights:

- International Convention on the Prevention and Punishment of the Crime of Genocide (ratified in 1948),
- International Convention on the Elimination of All Forms of Racial Discrimination (ratified in 1965),
- International Covenant on Civil and Political Rights (ratified in 1966),
- International Covenant on Economic, Social and Cultural Rights (ratified in 1966),
- Convention on the Elimination of All Forms of Discrimination against Women (ratified in 1979),
- Convention on the Rights of the Child (ratified in 1989),
- ILO 111 Discrimination (Employment and Occupation) Convention (ratified in 1958),
- ILO 169 Convention Concerning Indigenous and Tribal Peoples in Independent Countries (ratified in 1989),
- ICC Rome Statute of the International Criminal Court (ratified in 1998),
- American Convention on Human Rights (ratified in 1969),
- Additional Protocol to the American Convention on Human Rights in the area of Economic, Social and Cultural Rights (ratified in 1999).

On the national level, the Brazilian 1988 Constitution along with the Law 7716 of 1989 and the Law 9459 of 1997 includes indigenous and ethnic minorities rights and criminalizes acts of racism with high penalties of imprisonment to protect the existence of minorities.

Racial Whitening or "Whitening" is an ideology that was widely accepted in Brazil between 1889 and 1914⁵. This past Brazilian policy of 'whitening' has denied the existence of ethnic minorities⁶. Those unable to express themselves in the national language have been banned from voting. Since the United Nations World Conference against Racism, Xenophobia and related forms of Intolerance held in Durban, South Africa in 2001, Brazil has taken important steps to recognize the diversity of the nation, although the country still has a long way to go in order to reach racial equality.

In Brazil, the voting is compulsory for all literate citizen over 18 years old, and optional to a) illiterate people; b) people over 16 and under 18 years old, and c) over 70 years old. As the voting is compulsory in Brazil, indigenous people are obliged to vote if they are more than 18 years old and if they are literate in Portuguese. The Electoral Code (Law No. 4.737/1965) prohibits voter registration of those who do not speak the national language (i.e., Portuguese). So, the indigenous people, sometime, decide not to vote. This is because indigenous people have the constitutional right to live according to their uses, customs and traditions. According to the Statute of Indian (Law No. 6.001/1973), the Indians are considered in three categories of

⁵ Wikipedia, http://en.wikipedia.org/wiki/Racial_whitening

⁶ UNHCR, refworld, <http://www.refworld.org/docid/4954ce5a23.html>

civilization: a) the isolated, who have little or no contact with the society, b) in the way of integration, who are in permanent contact with society, while preserving their customs, and c) the integrated, recognized in the full exercise of civil rights.

Lands right entitlements for Afro-Brazilian, in particular, Quilombola communities, are legally recognized in Brazil through the 1998 Constitution. For example, this new constitution granted the Quilombolas, one of the most important afro-descendant groups in Brazil, the right to the title on their land. The constitution also mandates the protection and preservation of these federally-certified lands (or Quilombos) by creating a specific institution devoted to assisting in the titling process. Table 7.2.1 summarizes key legal codes regarding the protection of indigenous and Quilombo communities.

Table 7.2.1 Summary of Key Domestic Legal Codes

Code	Descriptions
Statute of Indian (1973)	This statute is the name attributed to Law 6.001. Promulgated in 1973, it contains rules on the relations of the state and Brazilian society with the indigenous communities. In general lines, the state followed a principle established by the old Brazilian civil code of 1916, that the Indians are “relatively capable”, and should be tutored by a state indigenous institution, (from 1910 to 1967) the Serviço de Proteção ao Índio/SPI; currently Fundação Nacional do Índio, (FUNAI) until they are fully integrated in the national community, that is, integrated in Brazilian society. This statute has been revised several times, most recently in 1996.
Normative Instruction No 1 of January 9, 2012	This instruction state rules on the involvement of FUNAI within environmental licensing process or relevant activities within the development projects that would affect the socio-cultural activities of indigenous land. Article 3 mentions that FUNAI shall conduct relevant social assessment for the development project of concerns regarding following aspects, I. Precaution for socio-biodiversity ; II. The autonomy of indigenous peoples ; III. Respect their social organization , customs, languages, beliefs and traditions ; IV. The rights to the lands they traditionally occupy by the Indians ; V. The exclusive use of the wealth of the soil, the rivers and the lakes existing in indigenous lands; VI. The rights over the land; VII. The prohibition of the removal of indigenous peoples from their lands , except in cases provided constitutionally VIII. The free participation of indigenous peoples, through appropriate procedures, respecting their traditions and representative institutions; IX. The cooperation with indigenous peoples; X. The prevention and mitigation of environmental and socio-cultural impacts Article 19 mentions that the issuance of the installation permit is subsidized by the adoption of the Indigenous Component of the Basic Environmental Program (PBA).
Decree #5051/2004	fully complied with the ILO Convention 169. Article #1 of Decree #5051/2004 defines indigenous tribes within an independent country, according to the set of social, cultural and economic conditions which can distinguish them from other sectors of the national collectivity.
CONAMA Resolution 237/97	Define the basic characteristics of the EIA process in Brazil.
Decree 3.912 (2001)	The first presidential decree to implement regulations for titling of Quilombo land. Although purporting to implement Article 68 of 1988 Constitution’s Temporary Constitutional Provisions Act (ADCT), this decree dramatically limited the possibilities for Quilombo recognition because it only recognized land that had been occupied by Quilombos in 1888—the year slavery was abolished—and that was still occupied by descendants of those Quilombos on October 5, 1988, the date of the new Constitution.
Decree 6.261 (2007)	Executive order issued in late 2007, deepened and institutionalized the basic goals and precepts of the Quilombola Social Agenda. Also, emphasizes access to land, infrastructure and quality of life, development, and citizenship.

Concerning lands of indigenous people, the Brazilian Constitution has a specific definition

stating that “lands traditionally occupied by Indians are those on which they live on a permanent basis, those utilized for their productive activities, those indispensable to the preservation of the environmental resources necessary for their well-being and for their physical and cultural reproduction, according to their uses, customs and traditions. In respect to the protection of indigenous territories, the Brazilian Constitution contains specific State duties to demark indigenous territories. Concerning constitutional rights over existing natural resources in indigenous lands, it has also established differentiated rights according to the type of natural resource”⁷. In respect to land, river, and lake resources, indigenous people have the right to use and enjoy these natural resources. They also have the right to consult with the government with respect to hydraulic or mineral resources.

Concerning indigenous languages, the Brazilian Constitution contains also specific articles. Brazil recognizes the existence of indigenous languages as part of their national heritages.

7.2.2 Planning of Development Projects and Indigenous People

In Brazil, any development project that would cause negative impacts on properties and/or lands of indigenous tribes requires EIA/RIMA study and IBAMA is the agency responsible for the environmental license approval (not a state environment agency) since issues related with indigenous tribes are always dealt by Federal Agencies (Article 6 of Normative Instruction No. 1, 2012).

Also, Article 18 of this normative instruction mentions that FUNAI will give the final opinion regarding the Preliminary License (LP) after appropriate tribe community meeting are held while sending an official letter to IBAMA. If the study is approved (or approved with minor revising), then entire project can move forward to another step (preparation for the LI). Otherwise, relevant studies with revised ToR shall be conducted again until its approval.

Article 19 mentions that the Indigenous Component of the Environment Basic Program (PBA – Programa Básico Ambiental) shall be conducted for the preparation for the LI. During the licensing process, IBAMA conduct a series of discussions with relevant environmental agencies (OEMAs) involved in the licensing, IPHAN, FUNAI, PALMARES, control unit of endemic diseases (Secretariat of Health Surveillance, Ministry of Health), and others.

In the licensing process, environmental studies are prepared by the project owner, and then, be submitted to IBAMA for their analysis and approval. For each stage of licensing specific environmental and social studies must be prepared. To subsidize the LP step, in case to expect significant potential negative impacts, the project owner shall pass forwards EIA/RIMA study

⁷ (Constituição Federal [C.F.] [Constitution] (Braz.) Art. 231, § 1, translated in CONSTITUTIONS OF THE WORLD: FEDERAL REPUBLIC OF BRAZIL 125 (Gilbert H. Flanz & Patrice H. Ward eds., 2004)

reports to IBAMA.

By the same token, in order to subsidize the LI process, the project owner shall prepare the Basic Environmental Plan (PBA) detailing the environmental programs necessary to minimize the negative impacts and maximize positive impacts identified within the EIA study.

To subsidize the LO process, the project owner shall prepare a series of reports describing the implementation of environmental programs and mitigation measures established during LP and LI phases.

7.3 Procedures and Relevant Organizations

The Brazilian Government has established the Special Secretariat for the Promotion of Racial Equality (SEPPIR) at the ministerial level to deal with its non-discrimination policy. SEPPIR works closely with the National Council of Racial Equality Promotion, consisting of 20 representatives of civil society, including representatives of ethnic and religious minorities, and government actors.

The Palmares Cultural Foundation, a public organization established by the 1988 Constitution and linked to the Ministry of Culture, was created to promote and protect afro-descendent culture in Brazil and secures the land titles for afro-descendant communities. By 2006, the foundation had identified “743 Quilombola communities, 42 of which have been officially recognized and 29 of which have received titles. The organization formulates and implements policies that enhance the participation of afro-descendants in the country’s development process, and has contributed to important advances in the recognition of ethnic minorities’ rights to land and natural resources.

In Brazil, the 2005 Common Country Assessment (CCA) includes a chapter on “Racial and Ethnic Discrimination: Reducing Exclusion and Vulnerability”, outlining the government’s weak responses to the effects of racism and discrimination. This contributed to the elaboration of the United Nations Development Assistance Framework (UNDAF) outcomes.

The Inter-American Commission, an institution created by the American Human Rights Convention in 1959, legitimized indigenous peoples’ demands and offered a progressive interpretation of Article 2 of the American Declaration, and Article 1 of the American Convention on Human Rights (ACHR), to resolve those cases by ordering states to protect and guarantee indigenous and ethnic minorities’ collective rights. It has also created a Special Rapporteur on the Rights of Persons of African Descent and Racial Discrimination. This Special Rapporteur has conducted one informal country visit to Brazil in 2005.

The Inter-American Court of Human Rights, another institution established by the ACHR, has made a number of important decisions impacting on the rights of minorities in the Americas. In Brazil, in 2006, the Commission examined the case of Simone André Diniz vs the Republic of Brazil. The case concerned racial discrimination against the applicant in applying for a job and the failure of the justice system to adequately investigate her complaint. The Court found that the State of Brazil had violated the applicant's right equality before the law, the right to judicial protection and the right to a fair trial. The case exposed long-standing systematic failures in Brazil to implement its own stringent domestic laws against racial discrimination. In its recommendations, the Court has urged the government to make the legislative and administrative changes needed so that the anti-racism law is effective and to promote awareness campaigns against racial discrimination and racism.

The Human Rights Committee also identifies gaps in Brazil's reporting and requests information about minority communities who have been neglected by Brazil (e.g., in relation to the Romani community in Brazil in 2005). The following table lists other relevant minority based and advocacy organizations in Brazil.

Table 7.3.1 Minority based and advocacy organizations in Brazil

No.	Organization's name
In relation with Afro-Brazilians	
1	CEERT (Centro de Estudos das Relações de Trabalho e as Desigualdades) http://www.ceert.org.br/
2	Criola www.criola.org.br
3	Geledés – Instituto da Mulher Negra www.geledes.org.br
4	Instituto Steve Biko http://www.sbf.org.za/Main_Site/index.php
5	Integrare http://www.integrarebrasil.com.br/
6	Mulheres Negras http://www.mulheresnegras.org/
7	Soweto Organização Negra (Black Human Rights NGO) http://www.soweto.com.br/
In relation with indigenous people	
1	Coordenação das Organizações Indígenas da Amazonia https://www.socioambiental.org/pt-br/noticias-socioambientais/coordenacao-das-organizacoes-indigenas-da-amazonia-coiab-elege-nova-diretoria
2	Instituto Socioambiental https://www.socioambiental.org
3	Kanindé http://www.kaninde.org.br/
4	Survival International http://www.survivalinternational.org/
5	Reporter Brazil http://reporterbrasil.org.br

Source World Directory of Minorities and Indigenous Peoples

Table 7.3.2 summarizes major process of registering the indigenous areas in Brazil.

Table 7.3.2 Registration Process of Indigenous Reserves

Process	Descriptions
1. Identification	Study by a working group of FUNAI of the original borders (anthropological studies, legal and historical documents, conversations, archaeology, sociology etcetera). The study report has to be approved by the president of FUNAI. After publication of a summary of the report in the State Newspaper, anyone interested can dispute this FUNAI report up to 90 days. Then, FUNAI has 60 days to elaborate opinions about the arguments of the interested and hand the report over to the Ministry of Justice.
2. Declaration	Ministry of Justice has 30 days to declare the spatial scale of the indigenous area.
3. Demarcation	Physical delimitation of the indigenous area.
4. Homologation	President of the Republic puts his signature to approve the demarcation of the proposed reserved area.
5. Registration	Indigenous area is officially registered in the notary office (within a maximum of 30 days after homologation).

(Source: Gesellschaft für bedrohte Völker, <http://www.gfbv.de/inhaltsDok.php?id=975>)

7.4 Affirmative Actions

On the education level, affirmative action policies have been in place since 2001 in Brazil to increase the enrolment of Afro-Brazilians in tertiary education. As for the non-discrimination policy, various forms of affirmative actions for Afro-Brazilians and other ethnic groups have been introduced such as support to business development by Afro-descendants, job training and targeted social programs for predominantly Afro-descendants neighborhoods.

Brazil has also reduced the migration of many Afro-Brazilians and minority groups in urban slums by adopting several programs and actions directed towards the diversification of the form of access of housing such as building of houses for residents in land reform settlements, indigenous and Quilombola (slave descendant) communities, in addition to the supply of direct subsidies to the poorer population.

In 2005, the UN Country Team (UNCT) Brazil adopted a specific UNDAF outcome aimed at combating discrimination by building capacity, promoting participation and increasing accountability. This UNDAF tries to address the main reasons why, although living in a rich country with outstanding potentialities, a high proportion of Brazilians still face systematic constraints to enjoy their human rights. Despite profound reforms, inequality – between the rich and the poor, men and women, white, black and indigenous people, between regions and between generations – remains as a central national characteristic. The realistic United Nations contribution to advance human development requires the concentration of efforts on those issues that may help change this scenario and may result in the social inclusion of the excluded and the vulnerable. Such efforts should necessarily focus on promoting the equal access to public services, ensuring gender and race equity, reducing vulnerability to violence, promoting transparent policies and human rights, and supporting more sustainable economic development – the five UN priorities for the next programming cycle (2007-2011).

The following table summarizes the Brazilian Program Outcome 2 in relation with gender and racial/ethnic inequalities, the second UN priority. The means to achieve the reduction of gender, racial and ethnic inequalities are described in four country program outcomes (2-1~2-4), which express the need to strength capacities on gender and race mainstreaming, i.e. incorporation of a gender and race perspective into legislation, policies and programmes, during the design implementation, monitoring and evaluation stages; enhance institutional capacity of organizations that fight for gender and race equality; improve capacities by women and youth organizations, as well as by organized groups of black and indigenous peoples to participate in all decision making platforms; enhance competences of institutions to promote equal opportunities for women, black and indigenous peoples of all income levels to access education, health and employment, where inequalities are more acute. Table 7.4.1 summarizes major outcome of several social program for the protection of ethnic and/or racial minority in Brazil.

Table 7.4.1 Brazilian Program Outcome

Name	Major Outcome
National priority	Main goal 1: social inclusion and reduction of social inequalities Challenge 8: Promote reduction of racial inequalities Challenge 9: Promote reduction of gender inequalities
UNDAF Outcome 2	2. Gender and racial/ethnic inequalities are reduced, taking into account territorial heterogeneities
Brazil Program Outcome (Country Program Output)	
2.1 Increased mainstreaming and crosscutting of the gender and racial/ethnic dimension in their design, implementation, management, monitoring and evaluation of policies and programs.	2.1.1 Public manages and social players trained in mainstreaming the gender and racial/ethnic dimension in design, implementation, management, monitoring and evaluation of policies and programs. 2.1.2 Government and non-government agents trained in conception, generation, analysis and use of data and indicators disaggregated by sex, race/color and ethnicity. 2.1.3 Society and governments informed and sensitized in ensuring gender and racial/ethnic equality rights, including for refugees and asylum seekers.
2.2 Increased political institutional, managerial and financial capacity of government and non-government spheres in the promotion of gender and race equity.	2.2.1 Institutional capacities developed in the implementation of international commitments and national, state and municipal plans related to gender, race, refugee and ethnic issues. 2.2.2 Strengthened advocacy capacities and non-government networks and institutions in the promotion of gender, racial and ethnic equity.
2.3 Increased participation of youth, women, blacks and ethnic minorities in public and private decision-making spheres.	2.3.1 Enhances Institutional capacities in the implementation of legislation and mechanisms for increased political participation of women, youth, blacks and indigenous people. 2.3.2 Mechanisms for promotion of diversity and of participation of women, youth and blacks in the decision-making levels of companies implemented and disseminated.
2.4 Equal opportunities of access to education, health services and decent work for women, blacks, and ethnic minorities increased (including refugees and asylum seekers).	2.4.1 Strengthened institutional capacities in promoting equal opportunities of access to education, health (including HIV prevention and care) and decent work for women, youth, blacks, refugees and ethnic minorities. 2.4.2 Increased institutional capacity, including that of empowers and workers organization, in combating gender and racial/ethnic discrimination, as well as discrimination against refugees.

Source The UN in Brazil : UNDAF 2007-2011, UCNT Brazil, December 2005

Some general action plans related to minority groups on specific health sector were also achieved in Brazil. For example, the National Pact to Reduce Maternal Mortality included

specific objectives for “the inclusion of gender, race and ethnicity considerations in all strategies and measures”, and “the consideration of social inequalities in decision-making processes”⁸. Brazil now includes census questions that allow the population to self-identify as indigenous if they wish. This helps with the data collection concerning the indigenous population.

7.5 Major Issues and Challenges in the Current System

7.5.1 Issues concerning the Afro-Brazilians

(1) Census

Although the country has been collecting data on race since the 1872 Census, the information did not shed light on the socio-economic condition of Afro-descendant groups, because data sets were limited and difficult to compare across years. Afro-Brazilians are categorized in the census as mixed race, pardo or preto. In the 1980s and 1990s Afro-Brazilian activists tried to influence the population to recognize their African ancestry and not to deny their blackness. Black movement groups also analyzed the census data independently and found significant socio-economic gaps between racial groups. The data demonstrate the close correlation between people of African origin, whether they are classified as preto or pardo, and poverty.

For practical and political purposes, most researchers, academics and activists use this combined data for all Afro-descendants because the socio-economic indicators show significant differences between Afro-descendants (pretos and pardos) and whites in Brazil, and little difference among people of African descent.

(2) Socio-economic Inequality

Afro-Brazilians are about half the population, but their economic participation is only 20 % of the GDP. Unemployment is 50 % higher among Afro-Brazilians than among whites, and blacks who are employed earn less than half of what whites earn. The majority of Afro-Brazilians (78 %) live below the poverty line compared to 40 % of whites, and the life expectancy of African-descendants is only 66 years compared to 72 years for European-descendants. Half of all blacks are illiterate, while less than 20 % of whites are unable to read. Only 4 % of Afro-Brazilians between the ages of 18 and 24 have attended a university, compared to 12 % of whites. The heated debate about affirmative action in higher education only impacts 25 % of the current African-descendant population, because the vast majority of Afro-Brazilians have less than 11 years of formal schooling; 40 % of blacks have completed less than seven years of schooling, and are therefore ineligible for college admission.

⁸ Corinne Lennox, *State of the World's Minorities and Indigenous Peoples 2013*, Addressing health inequalities in the post-2015 development framework

The statistics disaggregated by race widely available throughout Brazil demonstrate a consistent socio-economic gap between blacks and whites due to discrimination in every aspect of society. Recent data from the Institute of Applied Economic Research (IPEA) and the UNDP, for example, demonstrates that Afro-Brazilians, regardless of level of education, position or title, are far much more likely to experience downward socio-economic mobility than whites. Race and poverty are strongly correlated, in large part because racial discrimination causes poverty.

(3) Human Rights

A report by the UN Special Rapporteur on Torture found that most victims of torture in Brazilian prisons were of Afro-Brazilian descent. According to the US Department of State, Afro-Brazilians receive higher sentences than their white counterparts for the same crime, and are more likely to suffer discrimination in prison. The IPEA found that black people were at least twice as likely to be killed by the police than whites in cities like Rio de Janeiro. The situation of blacks in the criminal justice system in Brazil could be far worse than the data indicate. The Institute for Religious Studies (ISER) found that police homicides were twice as high as officially reported and that, in the majority of the cases investigated (64%), the victims were shot in the back at close range - and most of these victims were of African descent. In Rio de Janeiro a hot line established to track racist discrimination during a two-year period found 104 cases of discrimination in the criminal justice system. The police, who operate with impunity, considered this an unusually high number because most individuals do not report these crimes out of fear of retaliation⁹. In Rio de Janeiro 80 % of robbery victims did not register the crime with the police because they were afraid to interact with police officers and 76 % of citizens thought that the police force as a whole was directly involved with death squads terrorizing black communities. Afro-Brazilians are gravely impacted by serious crime; death by homicide is 87 % higher among African-descendants than in the population as a whole.

Since the UN World Conference against Racism, Brazil has taken significant measures to increase equality in the region. Edna Roland, an Afro-Brazilian activist was an important contributor to this process and was designated a conference rapporteur and a UN eminent expert on African-descendants. One of the major results of the conference in Brazil was the formation of the Secretariat for the Promotion of Racial Equality, SEPPPIR, with over 150 staff members and over 200 racial inclusion initiatives. Led by Minister Matilde Ribeiro, this office is responsible for Brazilian inclusion policy for black people and closely follows the nation's policy towards Africa. SEPPPIR is a significant step forward, and the minister has been effective at influencing other ministries to take on projects to promote the inclusion of black people. Despite the success of SEPPPIR, the government has not fully embraced the importance of social

⁹ World Directory of Minorities, Human rights chapter, <http://www.minorityrights.org/?lid=5285&tmpl=printpage>

inclusion at the most senior levels of government. Promoting racial equality in Brazil means facing the daunting task of including the majority of the population in society; therefore it must be viewed as a core activity by the government and provided with substantial financial and political resources.

Brazil has also sought a role as an international leader on issues of race. Brazil has taken a leadership role in the Inter-American Court of Human Rights at the Organization of American States (OAS). Brazil is the sole supporter of the Special Rapporteur for African-Descendants, a position held by Dr Clare Roberts, former president of the Inter-American Court. Brazil has also taken the lead on the Inter-American Convention against Discrimination, which is currently under consideration by the Inter-American Court of Human Rights and has been strongly opposed by the US government. This convention attempts to provide black people with a regional mechanism to redress human rights violations throughout the Americas. Currently, a case of racial discrimination must be tried as a generic human rights violation, because there is no statute that oversees cases of racial discrimination in the OAS. The creation of the Inter-American Convention is a vital step to provide African-descendants and other minorities with a form of redress in countries where national courts have been reluctant to address racial inequities.

Brazil has also been the leading nation requesting follow-up to the UN World Conference against Racism, Xenophobia, and Related Forms of Intolerance. In 2006, Brazil sponsored the Conference of the Americas, which was envisioned as a continuation of the Santiago +5 preparatory committee session before the UN World Conference. This meeting was well attended by civil society representatives and included a wide range of issues related to discrimination and intolerance.

(4) Land Rights

According to SEPPPIR, there are 1,170 recognized Quilombolas heritage communities, but the real total could surpass 3,000. It is noted that Quilombolas (or Qilombos) are colonial-era maroon settlements established by self-liberated African-based who fled to dense jungles or remote mountain regions to escape enslavement and created independent African-based communities. This would represent some 1.7 million people¹⁰. The highest concentrations are in once inaccessible areas of Bahía (north-east), Pará (north), Mato Grosso (west), Goiás (central) and Minas Gerais (south-east). Qilombos also exist in major cities like Rio de Janeiro and São Paulo.

Fugitive African slaves created Quilombos during the seventeenth and eighteenth century.

¹⁰ Maurice Bryan, *State of the World's Minorities 2008, Americas*, p.90

Currently the inhabitants of these communities, 'Quilombolas', continue to struggle to assert their cultural identity and historical ties to these lands. However, while these isolated communities were able to maintain their unique cultural traditions and identities, living conditions in these settlements are often some of the worst in Brazil.

In 2007, 91 % of Quilombo families had monthly incomes of less than US \$190, though the national minimum wage is US \$204/month. A government study shows that the number of malnourished children under the age of five in Quilombos is 76 % higher than among the child population as a whole. Only 3.2 % of Quilombo children have access to sanitation.

Quilombos have been recognized since the mid-1990s under ILO Convention No. 169 and the current programme includes granting collective land titles as well as improving roads and providing sanitation, water, education and health services.

Titling is viewed as all-important since some Quilombos that existed before major cities like Rio de Janeiro and São Paulo were established eventually became absorbed as poor urban neighborhoods.

7.5.2 Issues related with Indigenous Groups

(1) Outline

In this sub-section, issues of indigenous ethnic group (non-Afro-Brazilian) are discussed. In general, indigenous groups are facing issues directly connected to their land dispossession, their health and their working opportunities (agricultural mechanization and use of toxic chemicals reducing their employment opportunities). Before describing specifically some issues by indigenous groups, here is one of the recent 2012 energy expansion projects that indigenous groups are protesting against. It is the Belo Monte Dam construction project on the Xingu River that would pose a great risk to their health and well being according to them. It is noted that the project owner of this hydroelectric dam construction project is Norte Energia consortium, which is led by state-owned electricity company¹¹. Moreover, for indigenous groups, the Xingu River is also regarded as a living entity. Brief outline of major ethnic groups highlighted within Belo Monte Dam construction project are described, separately.

(2) Guarani-Kaiowa Group

In the state of Mato Grosso do Sul in south-west Brazil, violent disputes occurred in 2012 on ancestral lands claimed by the Guarani-Kaiowa, the second largest indigenous group in Brazil

¹¹ Economist, <http://www.economist.com/news/americas/21577073-having-spent-heavily-make-worlds-third-biggest-hydroelectric-project-greener-brazil>

(around 44,000). According to local media, their lands, having been taken over by large-scale farmers and ranchers, they were forced to live along the roadsides waiting for the Brazilian government to demarcate their ancestral territory. Growing weary of this situation, the indigenous Guarani-Kaiowa community of Pyelito Kue/Mbarakay came back to occupy a small part of their lands. When ordered by the court to leave in October, they publicly threatened to engage in mass suicide to protest their continuing dispossession. In the end, facing the public local and international clamor, the Brazilian government ordered the court ruling to be revoked, allowing the Pyelito Kue Kaiowa families to stay until the demarcation process is completed.

Since 2005, the Brazilian government has recognized indigenous rights to 9,317 hectares of Guarani-Kaiowa territory. However, actual possession has been delayed by litigation and negotiations on landholder compensation. Because of this on-going delay and the state government strong support to agribusiness, those seeking to enlarge their landed estates take over the indigenous ancestral land forcing them of their own territories.

In the Guarani-Kaiowa groups, there is a high rate of suicide because of this continuous land dispossession (a total of 555 suicides between 2003 and 2010 in Mato Grosso, that-is-to-say a suicidal rate of nearly 80 a year). There are also health concerns related to malnutrition since the large-scale agro-industry, including the intensive use of pesticides in the Guarani-Kaiowa areas, is taking part in the destruction of rivers and forests that have traditionally represented indigenous hunting and fishing food survival sources.

(3) Arara Group

Forced relocation and decreasing land plots have threatened the Arará way of life, and many Arará are seeking work from neighboring communities of settlers in order to gain greater material wealth for their families. The forced dispersion of the Arará is causing tension between two registered zones of Arará in the Cachoeira Seca do Iri IT, a group of 56 Arará, and the Arara IT, where the bulk of the community resides.

Increased access to education has also further eroded the Arará culture. Since 1994 an increasing number of Portuguese-speaking teachers have arrived in the community. As a result, Portuguese is becoming the dominant language for young people, while most elders remain monolingual. The growing presence of missionaries is limiting the passing on of traditional knowledge and beliefs, and contributing to the forced integration of the Arará.

(4) Awa Group

It has taken over two decades to demarcate Awá land. The government and the state-owned mining company received almost US \$1 billion in 1982 from the World Bank to improve mine

transport. Improvements to the railroad system further threatened the Awá way of life as the railway divided the Awá hunting territory. In 1992 the World Bank, sponsored a land demarcation programme for this part of Maranhão, but the land still has not been registered. The railway and the increasing presence of ranchers compromise the Awá's ability to hunt. The Awá people remain on the brink of extinction.

(5) Kayapo Group

The Kayapó have two very different perspectives on outsiders - the Gorotire village has retained mining rights, while Kapot has remained distant from commercial interests. Members of the community have hired whites to mine the land, and Kayapó have sold their products to major international corporations such as the Body Shop. Two Kayapó chiefs, Ropni (or Raoni) and Bepkoroti (Paulinho Payakã), have become international celebrities. The international pop star Sting works closely with Raoni on environmental issues and co-authored a book based on his experiences. Despite the amount of contact the Kayapó have with outsiders, there is still internal tension that has enabled them to retain a level of skepticism about outsiders. This balance may help explain some of the economic and political success of the community.

(6) Makuxi and Wapixana Groups

There is hope that with the recognition of the Makuxi territory on 15 April 2005 by the Brazilian government as Raposa-Serra do Sol, acts of violence will end. At least 20 members of the community died defending their land rights in the 1990s.

(7) Nambiquara Group

The Nambiquara, have conducted their own community census and their population is growing slightly. Medical and educational services are being offered with greater frequency throughout the community, but more support is still needed.

(8) Tikuna Group

In 2004 the sentences were reduced for the man who ordered the Tikuna murders, along with the 14 others tried in absentia. The Tikuna remain threatened and are being persecuted in the region. There has been little information gathered or written on the culture and traditions of this community that faces annihilation.

(9) Tukano Group

The FOIRN (Federation of the Indigenous Organizations of the Upper Rio Negro) has

undertaken several health, education and development projects in the region. They coordinate the DSEI (Special Indigenous Medical District) of the Rio Negro and have hired 200 health workers, of whom 90 per cent are of indigenous origin. Many of these projects have been undertaken with support from the Instituto Socioambiental.

(10) Urueu-Wau-Wau Group

Missionaries are increasing their activities in the community and the local NGO Kanindé has worked to fight against outside influences in the community. The community has limited access to health care and as a result viral and bacterial infections are common. The health condition of the community has been brought to the attention of UNDP and there are nascent government programmes to address the concerns of the Urueu-Wau-Wau.

(11) Yanomami

The increasing influence of military bases at Maturacá, Surucucus and Auaris has generated a host of social problems and prostitution. Migration to Roraima continues from other regions in Brazil, bringing criminal influences. Further, a forest fire that took place in 1998 has made it more difficult for the Yanomami to protect their land boundaries.

Within an interview with the international NGO Survival International, held in September 2007, Davi Yanomami, an indigenous leader of the Yanomami organization Hutukara, spoke out against the government's current proposals to pass a new mining law, which the Yanomami argue will destroy and rob them of their legally demarcated lands, as well as damage their way of life and the health and livelihood of their communities. The Yanomami see the law as threatening to offer a green light to miners to invade their territories and encourage the further amassing of private wealth for multinational companies, while they will remain in poverty.

7.6 Major Issues and Challenges in the Current System¹²

The Brazilian policy of 'whitening' has denied the existence of ethnic minorities. Those unable to express themselves in the national language have been banned from voting. Since the United Nations World Conference against Racism, Xenophobia and related forms of Intolerance held in Durban, South Africa in 2001, Brazil has taken important steps to recognize the diversity of the nation, although the country still has a long way to go in order to reach racial equality.

In response to international pressure, the government has begun to recognize its failings in managing indigenous lands and the limited scope of its actions in indigenous communities.

¹² UNHCR, refworld, <http://www.refworld.org/docid/4954ce5a23.html>

Instead of mitigating bad relations with indigenous communities and their advocates, these limited actions have led to new concerns regarding the abandonment of indigenous people by the nation. The demarcation of indigenous land still has not been completed and is a continuing source of conflict. However, the land titling process is moving forward more quickly than in the past, in part due to pressure from the UN Committee on the Elimination of Racial Discrimination, which recommended in 2004 that the demarcation of all indigenous lands be completed by 2007, and that the state party adopt urgent measures to recognize and protect the right of indigenous peoples to own, develop, control and use their lands, territories and resources.

Despite these advances, problems continue throughout the reserves, in part, because the state environmental protection agency has only small number of staff member for protected lands. FUNAI's activities have been severely curtailed in the past due to funding problems, and a lack of political will to register approximately 11 % of the nation's land to the indigenous community, which represents less than 1 % of the population. Where land has been demarcated, the exclusive rights of indigenous peoples to these resources are recognized under Article 231 of the constitution.

7.7 Gap Analysis Between the Present Domestic Regulations, the JICA Guidelines for Environmental and Social Considerations, and the World Bank Safeguard Policy

➤ Overall protection status

In Brazil, the protection of indigenous communities within development projects has been one of controversial issues, and relocations of indigenous communities due to development activities have frequently occurred before 1974 due to the shortage of enough anthropological knowledge at that time. Currently, there has been a great improvement, and the relocation of indigenous and/or minority communities due to the development project is prohibited except the road construction and the electric transmission line set-up (note that electric transmission line facilities are usually constructed along the road, so that this transmission line project becomes exemption also). Basically, any development projects that would affect properties and/or lands of indigenous tribes shall conduct EIA/RIMA study with close consultation with FUNAI. In that EIA/RIMA study, IBAMA (not state environmental agency) is the environmental administration agency responsible for the examination of the environmental license application process.

➤ Lack of Comprehensive ToR Development at early project Planning Stage

Although an almost comprehensive legal protection system for indigenous communities is

established within the development projects, there are still some social issues regarding the relocation of indigenous tribe communities due to the implementation of the large-scale development projects such as Belo Monte Dam construction project, Para State.

Normative Instruction No 1 of January 9, 2012 specifies the participation process for the indigenous communities within development projects and all meaningful process shall be established through the instructions/or guidance of FUNAI who is authorised to command the environmental licensing process of activities or development projects, that would causes socio, cultural and environmental impacts on indigenous people and lands.

As mentioned earlier, the current ESIA legal system has a weakness to predict or identify potential critical environmental and social factors such as the protection of indigenous tribes at the early planning stage. So, some development projects without appropriate FUNAI's involvement in the beginning tend to be controversial although LPs (Licença Prévia) of projects of concerns are approved. Sometime, FUNAI stepped in the past mega-scale development projects that caused significant negative impacts on indigenous communities and provided guidance to indigenous communities people as well as project owners to mitigate negative impacts on indigenous tribe's communities.

Besides, most of the public participation processes, conducted before the relocation events, are tend to be organized at the later planning stage at when the entire design framework is consolidated and no possibilities to conduct design amendments to mitigate those negative impacts.

In other words, there is no choice but to select the relocation option for some indigenous tribe communities. Although there are vast reserves for indigenous tribes across the northern part of Brazil, some of new relocation sites happened to be the land near to the hostile communities, and triggered inter-tribe wars.

This weakness also are shared among several sectors of central federal government, and new project planning code to encourage the participation or involvement of competent agencies such as FUNAI, PALMERES, IPHAN into the early project planning process are prepared. It is noted that the specific enactment schedule of this new code is not known (as of February 2014).

For the time being, it would be beneficial to strengthen project proponents and donors screening process while establishing close relationship between project proponents and donors and social administration staff of Brazil (e.g., FUNAI and PALMERES) in order to conduct reliable evaluation of significance of potential impacts on indigenous tribe communities, that may be caused by the project implementation and thus, guarantee the overall credibility of the environmental approvals.

Chapter 8 Environmental and Social Considerations in Other Donors' Projects

8.1 World Bank (WB)

8.1.1 Environmental Assessment

(1) Gap Analysis Between the Present Domestic Regulations, and the World Bank (WB) Safeguard Policy

As discussed in Chapter 5, there is no significant difference in the environmental clearance process among Brazil and WB procedures. One of uniqueness in the environmental approval process in Brazil is that there are three different licenses to be obtained before project of concern can start its operation, named LP, LI, and LO.

Recently, several environmental concerns, disputes and/or conflicts, were raised at large-scale infrastructure development projects in Brazil. Those are mainly due to the facts that appropriate program of environmental and social considerations were not incorporated at the early planning stage of the project cycle, and the project owners and/or developers proceeds relevant engineering design works without satisfactory mitigation measures implementation plans. In most cases, those environmental concerns and/or disputes for the large-scale development project were raised after LPs were issued, and then, publicly noticed. Unfortunately, when great public concerns were raised, most of engineering design of development projects was almost close to the final design. So that, what's usually happened are that there is no possibility to amend the design framework in order to reflect concerns, raised through the conflicts among project owners/developer, environmental agencies, NGOs and communities, but delay the entire project cycle such as the postponement of project implementation and operation. In other words, much efforts shall be conducted in order to achieve broad project consensus at the early stage of the project cycle.

WB Environmental and Social unit in Brazil found that actual environmental clearance process, in particular, conducted at state and/or municipality government levels, need more efforts to catch up with relevant WB environmental and social policies. Sometimes, it is observed that the credibility of environmental licenses, approved by some local governments, do not match the WB's environmental policies, and eventually, those projects tend to cause troubles later after those implementations started. So, recently, WB Brazil Office pays more attention to the contents and the quality of EIA/IEE report to be used for the environmental clearance of the WB-funded development project. To achieve this, currently, WB shifts to focus on to implement capacity development program for the environmental administration, conducted at state and municipality level, in order to improve the quality of relevant EIA/RIMA studies, eventually

leading to improvement of the credibility of environmental licenses, issued by those state and/or municipality governments. So, recent WB-funded development projects tend to be "a package type" one that combine soft and hard components altogether while making the entire study period more than several years to improve overall capacity of the environmental reviews to be conducted by C/P officials.

(2) World Bank Safeguard Policy

The WB conducts environmental screening of each proposed project in order to determine the appropriate extent and type of environmental assessment (EA). The WB classifies the proposed project into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts as follows¹:

- **Category A:** A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. EA for a Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the 'without project' situation), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. For a Category A project, the borrower is responsible for preparing a report, normally an Environmental Impact Assessment (EIA) (or a suitably comprehensive regional or sectoral EA), that includes, as necessary, elements of the other instruments referred to in paragraph 7 of Operational Policy (OP) 4.01.
- **Category B:** A Category B project has potential adverse environmental impacts on human populations or environmentally important areas—including wetlands, forests, grasslands, and other natural habitats—which are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases, mitigatory measures can be designed more readily than for Category A projects. The scope of the EA for a Category B project may vary from project to project, but it is narrower than that of a Category A assessment. Like Category A, a Category B environmental assessment examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. The findings and results of an EA for a Category B project are described in the project documentation (Project Appraisal Document and Project Information Document).

¹ World Bank,
<http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,cont entMDK:20064724~menuPK:64701637~pagePK:64709096~piPK:64709108~theSitePK:502184,00.html>

- **Category C:** A Category C project is likely to have minimal or no adverse environmental impacts and therefore does not require further EA action beyond screening.
- **Category FI:** Category FI projects are those in which the World Bank provides funds to participating national banks, credit institutions, and other financial intermediaries (FIs) for lending at the FIs' risk to final borrowers. In the case of such projects, the FI screens each subproject proposed for financing and classifies it into one of the three categories A, B, or C.

For all Category A and B projects, the borrower provides relevant material in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted (OP 4.01, 14).

Table 8.1.1 Recent WB-funded Projects that Conducted EIA in Brazil

Project Name (ID)	Date of Approval	Description
Strengthening Service Delivery for Growth, Poverty Reduction and Environmental Sustainability in the State of Ceará PforR (P127463) http://www.worldbank.org/projects/P127463?lang=en	November 21, 2013	<p>Category B</p> <p>The objective of the Program to Strengthen Service Delivery in Skills Development, Early Childhood Development, and Water Quality Project for Brazil is to support the Government to improve public service delivery particularly in the areas of skills development, family assistance and water quality. The operation has two complementary components, a US\$ 315 million Program using the Program-For-Results, or PforR instrument (Program), and a US\$ 35 million technical assistance component using the Investment Project Financing (IPF) instrument.</p> <p>To inform preparation of the State of Ceará's PforR Operation to Strengthen Service Delivery in Skills Development, Family Assistance and Water Quality Programs, the WB prepared an Environmental and Social Systems Assessment (ESSA) of existing environmental and social management systems used to address the environmental and social effects of the state government programs selected to achieve the PforR results.</p>
Rio Grande do Norte: Regional Development and Governance (P126452) http://www.worldbank.org/projects/P126452/rio-grande-norte-regional-development-governance?lang=en	June 25, 2013	<p>Category B</p> <p>The objective of the Rio Grande do Norte Regional Development and Governance Project for Brazil is to support the borrower's efforts to: (i) increase food security and access to productive infrastructure and markets for family agriculture; (ii) improve the quality of, and access to, health, education and public security services; and (iii) improve systems for public expenditure, human resource and physical asset management in the context of a results-based management approach.</p> <p><u>Environmental Remark</u></p> <p>Upon Considering the project scope, objectives, impacts and mitigation measures identified within this EA as part of social and environmental safeguards of the WB, ESIA document is prepared in three volumes: Volume 1 - Report of ESIA; Volume 2 - Mark of the Participation of Indigenous Peoples Policy, and Volume 3 - Marco Involuntary Resettlement while checking compliance with the</p>

		guidelines issued by the WB.
Rio de Janeiro Strengthening Public Sector Management Technical Assistance Project (P127245) http://www.worldbank.org/projects/P127245/rio-de-janeiro-strengthening-public-sector-management-technical-assistance-project?lang=en	June 14, 2013	<p>Category C</p> <p>The objective of the Rio de Janeiro Strengthening Public Sector Management Technical Assistance Project for Brazil is to support institutional capacity strengthening in the Municipality of Rio de Janeiro to enhance public service delivery, including in health, education and environmental management.</p> <p><u>Environmental Remark</u></p> <p>This project does not support construction or any other activity that demands EIA with exception of the Health Sub-Component which focus mainly on promoting increased quality and efficiency in the use of the health network. One of the vehicles for this increased efficiency is the Primary Health Care Units which generate a modest amount of health care waste (HCW). Final disposal of health care waste is the responsibility of the generator. So, health impact-centered assessment study is conducted while satisfying WB Safeguards.</p>
Sao Paulo State Sustainable Transport Project (P127723) http://www.worldbank.org/projects/P127723/sao-paolo-transport-climate-change-disaster-risk-management?lang=en	June 14, 2013	<p>Category B</p> <p>The objective of the Sao Paulo Sustainable Transport Project for Brazil is to contribute to the improvement of the Borrower's transport and logistics efficiency and safety while enhancing the Borrower's capacity in environmental and disaster risk management. The project has three components. The first component is improving transport and logistics efficiency and safety.</p> <p><u>Environmental Remark</u></p> <p>One of important project component is to Strengthening sustainable environmental and land use planning and territorial management capacity (Estimated cost of US\$18 million, of which US\$12.6 million financed by the WB Loan). Its aim is to improve environmental enforcement and environment quality monitoring (US\$6.5 million of which US\$4.55 million financed by WB), improve the State capacity to manage and monitor environment through studies, small works and the acquisition of goods aimed at, inter alia: (i) improving environmental monitoring and control of the SMA with a view to strengthen enforcement, through pilot initiatives focusing on innovation, and (ii) strengthening the capacity of the State Environmental Agency (CETESB) in air and water monitoring in the Project area to ensure efficient and reliable data collections on air and water quality.</p> <p>Also, supporting the modernization of the Environmental Licensing System (US\$6.5 million of which US\$4.55 million financed by the WB) while improving the state-wide capacity to efficiently are important task.</p>
SWAp for Parana Multi-sector Development Project (P126343) http://www.worldbank.org/projects/P126343/parana-multi-sector-development-project?lang=en	November 6, 2012	<p>The objective of the SWAp for Parana Multi-Sector Development Project for Brazil is to make access to economic and human development opportunities more equitable and environmentally sustainable in the Borrower s territory through the modernization of the borrower s public sector and revenue management. There are two components to the project. The first will co-finance selected government programs (Eligible Expenditure Programs - EEPs) that support the Government of Parana's (GOP's) integrated approach to promoting social and economic development. The second will provide technical assistance to strengthen Public Sector Management (PSM).</p> <p><u>Environmental Remarks</u></p> <p>One of important environmental task is to conduct relevant environmental and disaster risk</p>

		<p>management (DRM) study. Regarding environmental management, the key goal is to strengthen overall environmental compliance and monitoring by improving the state government's capacity for delivering environmental registering, licensing, and oversight services. In the case of DRM, the aims are to improve the response capacity and identification of risk in short/medium term while developing an integrated disaster risk management policy in a medium/long term. The state government's strategies to tackle these issues translate into two Eligible Expenditure Programs to be supported by this Project.</p> <p>Also, modernization of the Environmental Licensing System is one of important task. This program aims to revise the state procedures for environmental licensing and build capacity in the state environmental agencies in order to strengthen environmental compliance and monitoring. The modernized Environmental Licensing System would ensure that responsibilities for ensuring compliance with environmental legislation are properly allocated and that the necessary data and systems are updated. It will be used to monitor and control productive landscapes, vegetation cover in private landholdings, logging concessions and water rights management.</p>
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Source: World Bank,

http://www.worldbank.org/projects/search?lang=en&searchTerm=&countrycode_exact=BR

8.1.2 Current Condition and Problems Related to Implementation of Land Acquisition

(1) Gap Analysis Between the Existing Domestic Regulations and the World Bank Safeguard Policy

As discussed in Chapter 6, the main objective of WB's OP 4.12 Annex A is to make avoid the occurrence of the involuntary resettlement, and thus, to make each assistances sustainable. In Brazil's case, the involuntary resettlement of vulnerable peoples such as illegal squatters without proper land title, is still controversial although some small improvement signs to tackle current resettlement practice have been recognized recently.

In last November 2013, WB and IDB held joint meeting with the Ministry of Cities (MC), the Government of Brazil, in order to share same understanding of current involuntary resettlement-related issues in Brazil. In that meeting, MC reported that MC has revised its own Ministry's land-expropriation-related code, incorporating both WB and IDB's relevant involuntary resettlement policies, and then, new expropriation regulation was enacted in order to apply only for this ministry's urban development project. In the long term, the concept of this MC's new expropriation regulation is expected to be disseminated to other ministries eventually while being incorporated into the future environmental and social clearance process at both State and Municipality levels in Brazil.

(2) WB's OP 4.12 Annex A

Acquisition and Involuntary Resettlement in cases where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits.

The Resettlement plan must include all the necessary measures to ensure that the displaced persons are²:

- Informed about their options and rights pertaining to resettlement;
- Consulted and provided with technically and economically feasible resettlement alternatives; and
- Provided prompt and effective compensation at full replacement cost for losses of assets attributable directly to the project.
- WB also emphasizes importance of conducting regular monitoring by an External Monitoring Agent to confirm:
- Results of internal monitoring;
- that the compensation process has been accomplished adhering to procedures communicated to project-affected families and indigenous peoples during consultation;
- whether the resettlement entitlements were suitable to the objectives, whether the objectives were suited to the project-affected families, and if livelihood and standard of living were restored or enhanced;
- the affected enterprises received enough assistance to re-establish themselves;
- if vulnerable groups were provided with effective and sustainable income earning opportunities to help restore pre-project income levels .

Resettlement planning includes early screening, scoping of key issues, the choice of resettlement instrument, and the information required to prepare the resettlement component or subcomponent. The scope and level of detail of the resettlement instruments vary with the magnitude and complexity of resettlement. In preparing the resettlement component, the borrower draws on appropriate social, technical, and legal expertise and on relevant community-based organizations and NGOs.

Over the past decade, Brazil has made significant progress in improving resettlement policy, practice and outcomes. The review found good practice examples related to identifying adverse impacts resulting from land acquisition, comprehensive planning for physical relocation,

² World Bank,
<http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,cont entMDK:20064610~menuPK:64701637~pagePK:64709096~piPK:64709108~theSitePK:502184,00.html>

improved consultations with affected people, and good design of land-based economic rehabilitation programs. However, there are additional aspects of resettlement that it needs to tackle to be at par with the best international practice in this area. For example, the resettlement plans are sometimes prepared only to comply with licensing procedures and not properly followed during implementation; projects do not take full advantage of consultations as a tool for developing resettlement solutions and reducing project risks; and the compensation provided to affected persons is not always adequate to restore their incomes and standards of living. The encouraging news is that most of the good practices that can inform improvements are evident within Brazilian projects. The focus now should be to make these good practices systemic, so that it is applied consistently across all projects involving involuntary resettlement.

In order to achieve those goals, Brazil could establish minimum standards on involuntary resettlement. As is common in many countries, land acquisition and involuntary resettlement in Brazil is governed mostly by federal and state legislation on land expropriation. There is no specific national policy or guideline to address physical displacement (relocation) or economic displacement (loss of income sources or livelihoods) of those affected by development projects. At the same time, there is ample scope for policies to be made more consistent across sectors, and practices needs to become more uniform, regardless of the financiers involved. The energy sector stands out as an example of good policies and practices related to involuntary resettlement—primarily because of the experience gained in the sector over the past few decades in the design and implementation of projects involving large-scale resettlement. Table 8.1.2 summarizes recent WB-funded projects with resettlement events in Brazil.

Table 8.1.2 World Bank Projects with Resettlement Events in Brazil

Project Name (ID)	Date of Approval	Descriptions
Rio Grande do Norte: Regional Development and Governance (P126452)	June 25, 2013	See Table 8.1.1
Sao Paulo State Sustainable Transport Project (P127723)	June 14, 2013	See Table 8.1.1

Source: World Bank, <http://www.worldbank.org/projects>

8.1.3 Current Condition and Problems Related to Considerations for Indigenous Peoples

(1) Gap Analysis Between the Existing Domestic Regulations and the World Bank Safeguard Policy

As discussed in Chapter 7, the protection of indigenous communities within development projects in Brazil has been one of controversial issues, and relocations of indigenous communities due to development activities have frequently occurred before 1974 due to the

shortage of enough anthropological knowledge at that time. Currently, there has been a great improvement, and the relocation of indigenous and/or minority communities due to the development project is prohibited except the road construction and the electric transmission line set-up (note that electric transmission line facilities are usually constructed along the road, so that this transmission line project becomes exemption also).

However, there are still some social issues regarding the relocation of indigenous tribe communities due to the implementation of the large-scale development projects. As mentioned earlier, the current ESIA legal system has a weakness to predict or identify potential critical environmental and social factors such as the protection of indigenous tribes at the early planning stage. So, some development projects tend to be controversial although LPs of projects of concerns are approved.

(2) Project Preparation for Indigenous People

In the WB's Safeguard Policies related to the considerations for indigenous peoples, the following procedures are stipulated³:

- Screening by the Bank to identify whether indigenous peoples are present, or have a collective attachment to the project area;
- Social assessment by the borrower. The assessment should include baseline information on the demographic, social, cultural and political characteristics of the affected indigenous peoples' communities;
- Free, prior, and informed consultation with the affected indigenous peoples' communities at each stage of the project, and particularly during project preparation, to fully identify their views and ascertain their broad community support for the project;
- Preparation of an Indigenous Peoples Plan or an Indigenous Peoples Planning Framework; and
- World Bank assumes the responsibility of disclosing the information to the public in accordance with World Bank Policy on Disclosure of Information, while the borrower should make it available to the affected indigenous peoples' communities in a culturally appropriate form, manner, and language.

Much has been achieved in Brazil since the 1988 constitution came into force: indigenous people have exclusive and "original" rights to their land and most territories in the Amazon have been recognized; the population of many indigenous groups and communities is increasing; and organizations working in their interests are thriving although there are still relocation of

³ World Bank,
<http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,contentMDK:20553653~menuPK:64701637~pagePK:64709096~piPK:64709108~theSitePK:502184,00.html>

indigenous tribe communities, due to several large-scale infrastructure development projects (most of them are hydro-electric plant projects) such as Belo Monte Hydropower plant construction project, Para State. This Belo Monte Dam complex is designed to divert 80 % of the Xingu River's flow, devastating an area of over 1,500 km² of Brazilian rainforest while resulting in the forced displacement of between 20,000 - 40,000 people. The project is causing grave and direct impacts to the land and livelihood of thousands of riverine and urban families as well as 1,000 indigenous people from several communities while provoking profound indirect impacts throughout the Xingu basin's communities, rivers, and forests.

8.1.4 Confirmation System for Monitoring

As discussed in Chapter 5, much effort would be required to catch up with various safeguard policies of WB. Speaking of the monitoring, due to the weakness of both screening and relevant ToR development, to be conducted at the early stage of the project cycle, the implementation of follow-up environmental and social monitoring programs and resultant activities, based on domestic regulation, are, sometimes, not comprehensive and not well-organized ones.

The WB has developed a monitoring and evaluation system for use during the project implementation as well as after completion of the project. At first, the WB task team will conduct a mid-term monitoring review. During the course the review, the team's environmental and social considerations specialist periodically (at least twice in a year) visits the field to monitor.

The team verifies compliance with the conditions agreed upon between the WB and the borrower, and the monitoring results done by the borrowers. The WB also stipulates that the borrower reports on:

- Compliance with measures agreed with the WB on the basis of the findings and results of the EA, including implementation of any EMP;
- The status of mitigation measures;
- The findings of monitoring programs; and
- Measures set out in the legal agreements, any EMP, and other project documents.

There are significant gaps in the monitoring activity between WB policies and those of Brazil. This is mainly due to the fact that no stipulation of monitoring, either by the project proponent or the regulatory agencies, exists in Brazil.

8.1.5 Implementation of Information Disclosure during Project Formulation, Project Screening and Project Implementation

(1) Gap Analysis Between the Existing Domestic Regulations and the World Bank Information Disclosure Policy

As discussed in Chapter 5, the information disclosure system including the public participation process is required within the current EIA/RIMA regulation in Brazil. However, most of them are conducted at the later planning stage. So, when some possibilities of new alternative development plan is raised from communities and/or other stakeholder groups, it is difficult to feedback those comments and/or suggestions into the planning process and/or design framework since most of design works are at almost final stage.

(2) Outline of WB Information Disclosure System

The WB's Safeguard Policies state that, for meaningful consultations between the borrower, project-affected groups and local NGOs in all Category A and B projects, the borrower should provide relevant material in a timely manner prior to consultation and in a form and language understandable and accessible to the groups being consulted.

For a Category A Project, the borrower provides a summary of the proposed project's objectives, description, and potential impacts for the initial consultation. In addition, for a Category A project, the borrower makes the draft EA report available at a public place accessible to project-affected groups and local NGOs. Any separate Category B report for a project proposed for IDA financing is made available to project-affected groups and local NGOs.

8.2 Inter-American Development Bank (IDB)

8.2.1 Environmental Assessment

Environmental safeguard of IDB is almost same to that of WB, so similar gap regarding the environmental assessment process exists. Similar to WB, IDB continue to make a stimulate on the further capacity development of environmental administration, in particular, the environmental clearance process (e.g., abiding the schedule, quality control of the environmental license and others).

For all applicable Bank operations, the project team will complete, when necessary in collaboration with an environmental and/or social specialist, the Safeguard Screening Form in order to identify potential environmental and environmentally related socio-cultural impacts and risks of the operation. The Safeguard Screening Form (SSF) includes a checklist of

environmental and social issues to assist the project team in classifying the operation. Based on the SSF, the project team will propose, as early as possible in the project cycle, an environmental impact following Category “A,” “B” or “C” for the operation [IDB, Implementation Guideline for the Environment and Safeguard Compliance Policy, 2007].

- **Category A:** An operation will be classified as Category “A” when it is likely to cause significant negative environmental and associated social and cultural impacts whether direct, indirect, regional or cumulative. This concept applies also to the operation’s associated facility. Negative impacts are considered significant when: (i) they extend over a large geographic area; (ii) they are permanent or occur for an extended period of time; and (iii) they are of high intensity and/or high magnitude. An absolute definition of significant impact is not possible, as the significance of an activity may vary with the setting. The determination of whether a project may have a significant impact on the environment requires professional knowledge and judgment. This should be based, to the extent feasible, on scientific data and local information. Generally, an environmental/social professional with training and/or experience in environmental assessment should make this determination;
- **Category B:** Operations that are likely to cause mostly local and short-term negative environmental and associated social and cultural impacts and for which effective mitigation measures are readily available will be classified as “B.” The magnitude/intensity of Category B projects are moderate in terms of direct, indirect, regional and cumulative impacts and standard procedures, know-how, and skills for the design of the mitigation measures are readily available and implementable.
- **Category C:** Operations that are likely to cause minimal or no negative environmental and associated social and cultural impacts will be classified as Category C. For the most part, these are operations that do not involve works or result in physical modification of the environment. Operations that are clearly designed to produce positive environmental outcomes, unless they include physical works, are considered to be Category C operations.

Environmental Impact Assessments (EIAs) are prepared by the borrower for projects with potentially substantial environmental impacts. EIAs are made available to affected populations and local nongovernmental organizations by the borrower before the Bank proceeds to the formal analysis of a project. Due to their length, EIAs are normally made available to the broader public for consultation only, in hard copies, through the Public Information Center. Table 8.2.1 summarizes recent approved EIAs for IADB-funded projects in Brazil.

Table 8.2.1 Recent Approved EIAs

Project Name (ID) (EIA Report ID)	Date of Approval	Description
<p>Road Program for Logistic and Integration - Ceara IV (BR-L1326) (EIA: 2964/OC-BR) http://www.iadb.org/en/projects/project-description-title,1303.html?id=BR-L1326</p>	<p>24 July 2013</p>	<p>Category B</p> <p>The Ceara IV is a multiple works program and will finance: (i) the rehabilitation of 1,375 km and the paving of 648 km roads, (ii) the implementation of a pilot on result-driven maintenance/rehabilitation process in the EC-060, a major route connecting the two largest cities, Fortaleza (north) and Crato (southern), and (iii) institutional strengthening of the DER / CE, including developing a State Plan of Logistics and Transport (PELT) and the implementation of actions identified in the Transport Master Plan and Environmental Management Plan, both funded by the Program Ceara III. It will also finance the development of technical, economic, social and environmental studies, engineering design, and management of activities and audits, all related to the implementation of the program.</p> <p><u>Environmental Remarks</u></p> <p>Since the program was classified as category "B," the following activities were conducted during program preparation: (i) an evaluation of works executed under the Ceara III program in terms of environmental issues (see optional electronic link 3); (ii) a field visit to all of the road segments targeted by the Ceara IV program; (iii) an environmental analysis of the entire representative sample of the Ceara IV program, including consultation and participation meetings in the main communities served by the road segments in question; and (iv) the program's EIA, which is a requirement for obtaining the preliminary permit.</p>
<p>Acre Sustainable Development Program II (BR-L1289) (EIA: 2928/OC-BR) http://www.iadb.org/en/projects/project-description-title,1303.html?id=BR-L1289</p>	<p>10 April 2013</p>	<p>Category B</p> <p>In spite of the success of the early investments done in the program BR-0313, deforestation continues albeit within small areas owned by poor small landholders and the stock of degraded lands is still growing in lands that are not suitable for cattle ranching. Consequently, development is still slowly taking pace. In this context, the GoAc has requested support from the Bank to finance to implement the second phase of the Programa de Desenvolvimento Sustentável do Acre, now numbered BR-L1289. The program BR-L1289 builds upon the legacy of the previous program BR-0313 and it is aimed at developing a novel policy package to further reduce deforestation and forest degradation through large-scale implementation of the system of forest concessions and increase the recovery of degraded land with the establishment of economically and environmentally viable forest plantations.</p> <p><u>Environmental Remarks</u></p> <p>Since the program was classified as category "B", strategic environmental and social assessment was conducted in order to identify the most relevant environmental and social characteristics of the area of influence of the program, the principal risks and impacts of the program.</p>
<p>Pro-Energy RS Generation and Transmission Program (BR-L1303) (EIA: 2813/OC-BR) http://www.iadb.org/en/projects/project-description-title,1303.html?id=BR-L1303</p>	<p>01 November 2012</p>	<p>Category B</p> <p>The Companhia Estadual de Geração e Transmissão de Energia Elétrica (CEEE-GT) is seeking financing to fund part of its investment program 2010-2013 in the generation and transmission area for \$142 million.</p> <p><u>Environmental Remarks</u></p> <p>No appropriate information and/or document regarding environmental and social consideration are obtained within this study.</p>

Source: Inter-American Development Bank,
<http://www.iadb.org/en/about-us/approved-projects-eias,6589.html>

8.2.2 Current Condition and Problems Related to Implementation of Land Acquisition

Similar to the environmental safeguard, IDB's safeguard policy regarding the involuntary resettlement is almost same to that of WB, so similar gap regarding the involuntary resettlement exists.

OP-710 summarizes the IDB's policy for the involuntary resettlement, caused by IDB's funded projects. This policy applies to all IDB-funded operations, in the public or private sector, whether IDB financing is directly channeled (as in investment loans) or administered by intermediaries (as in multiple works, time-slice or multi-sector credit programs). It excludes colonization schemes, as well as the settlement of refugees or victims of natural disasters.

The objective of this policy is to minimize the disruption of the livelihood of people living in the project's area of influence, by avoiding or minimizing the need for physical displacement, ensuring that when people must be displaced they are treated equitably and, where feasible, can share in the benefits of the project that requires their resettlement.

In order to achieve the overall objectives of this policy, operations which may require resettlement will be evaluated and prepared according to following two fundamental principles,

- Every effort will be made to avoid or minimize the need for involuntary resettlement. A thorough analysis of project alternatives must be carried out in order to identify solutions that are economically and technically feasible while eliminating or minimizing the need for involuntary resettlement. In examining the trade-offs between alternatives, it is important to have a reasonable estimate of the numbers of people likely to be affected, and an estimate of the costs of resettlement. Particular attention must be given to socio-cultural considerations, such as the cultural or religious significance of the land, the vulnerability of the affected population, or the availability of in-kind replacement for assets, especially when they have important intangible implications. When a large number of people or a significant portion of the affected community would be subject to relocation and/or impacts affect assets and values that are difficult to quantify and to compensate, after all other options have been explored the alternative of not going ahead with the project should be given serious consideration.
- When displacement is unavoidable, a resettlement plan must be prepared to ensure that the affected people receive fair and adequate compensation and rehabilitation. Compensation and rehabilitation are deemed fair and adequate when they can ensure that, within the shortest possible period of time, the resettled and host populations will: (i) achieve a minimum standard of living and access to land, natural resources, and services (such as potable water, sanitation, community infrastructure, land titling) at least equivalent to pre-resettlement levels; (ii) recover all losses caused by transitional hardships; (iii) experience

as little disruption as possible to their social networks, opportunities for employment or production, and access to natural resources and public facilities; and (iv) have access to opportunities for social and economic development.

Table 8.2.2 summarizes recent IDB-funded projects with resettlement events in Brazil. It is noted that no appropriate information and/or document regarding relevant ESIA studies of each project are obtained within this study.

Table 8.2.2 IDB Projects with Resettlement Plan in Brazil

Project Name (ID)	Date of Approval	Descriptions
Sao Bernardo do Campo Urban Transportation Program II (BR-L1315) http://www.iadb.org/en/projects/project-description-title,1303.html?id=BR-L1315	December 12, 2012	Category B The urban transportation improvement measures financed through this Program can be divided in three groups, interventions on highway infrastructure, taking advantage of these interventions to improve public transit operations, and improvement of the urban transportation system management. The specific Program components are: i) engineering and management; ii) completion of the municipal beltway; iii) upgrading the traffic signal system; (iv) operative improvement of the public transit system; (v) improvement of highway safety at critical spots; vi) traffic management and institutional strengthening: traffic system management, technical updating training, environmental liabilities recovery plan, dangerous cargo master plan, environmental sector at PMSBC; and vii) RoW expropriation, environmental compensation and human resettlement.
Improve Road Access to Small Municipalities in Minas Gerais-Phase II (BR-L1231) http://www.iadb.org/en/projects/project-description-title,1303.html?id=BR-L1231	December 15, 2009	Category B The State of Minas Gerais is implementing a road program to improve the accessibility for small municipalities, called PROACESSO. This program benefits 224 municipalities located in the poorest and less developed areas of Minas Gerais, mainly in the northeast region of the state. The Bank's participation has been done through a CCLIP divided in two phases. The first one was approved in 2005 and is currently in execution. The conditions to start the preparation of phase 2 have been accomplished. As in its first phase, the Programa will focus on the improvement of dirt roads that provide access to municipalities with low Human Development Index (IDH) values. The specific components of the Program are: i) engineering and administration; ii) interventions to improve local roads; iii) institutional and road management strengthening; and iv) expropriations, resettlements and social and environmental compensations. In order to differentiate between the Bank's program and the global state program, the Bank's Program was called PROACESSO-BIDH, due to its focus on accessibility to municipalities with low HDI. The Bank's Program Phase II is expected to implement improvements in close to all of PROACESSO roads that still need to be paved. JBIC and WB are also financing part of the global PROACESSO roads through parallel loans.
Estrada Nova Watershed Sanitation Program – PROMABEN (BR-L1065) http://www.iadb.org/en/projects/project-description-title,1303.html?id=BR-L1065	July 09, 2008	Category A The program will finance works for the urban and environmental restoration of the Estrada Nova watershed in Belem, Brazil. It will be financed drainage, water supply, sewerage and thoroughfares. There will also be investments in the remediation of the existing landfill and the studies for a new landfill. The works will need the resettlement of some 1,100 families.

Source: Inter-American Development Bank, <http://www.iadb.org/en/projects>

8.2.3 Current Condition and Problems Related to Considerations for Indigenous Peoples

(1) Online

Similar to the environmental safeguard, IDB's safeguard policy regarding indigenous people is almost same to that of WB, so similar gap regarding the considerations for the indigenous people exists.

Based on OP 765, IDB seeks to support socio-cultural development processes that are appropriate to the economy and governance of indigenous peoples, giving priority to territorial and cultural integrity, to a harmonious relationship with the environment, and to security in the face of vulnerability, while respecting the rights of indigenous peoples and individuals. This policy and strategy seek to strengthen the IDB's role and renew its commitment to the development with identity of indigenous peoples. The objective of this policy is to enhance the IDB's contribution to the development of indigenous peoples by supporting the region's national governments and indigenous peoples in achieving the following objectives [IDB, Operating Guidelines: Indigenous Peoples Policy (IPP), 2006]:

- Support the development with identity of indigenous peoples, including strengthening their capacities for governance.
- Safeguard indigenous peoples and their rights against adverse impacts and exclusion in Bank-funded development projects.

The policy contains two sets of directives. The first requires IDB to use its best efforts to promote the development with identity of indigenous peoples. The second creates safeguards designed to prevent or minimize exclusion and adverse impact that IDB operations might generate with respect to indigenous peoples and their rights.

(2) Promoting Development with Identity

IDB will use its best efforts to support the region's national governments and indigenous peoples, as well as relevant private sector and civil society actors, in mainstreaming indigenous issues in local and national development agendas and in IDB's project pipeline. It will pursue this through specific initiatives and, where technically feasible and appropriate, the integration of complementary activities, operations, and general initiatives.

- Mainstreaming specifically Indigenous Issues in Development Agendas through Independent Operations. IDB will seek to support the initiatives of governments and indigenous peoples designed to promote indigenous social, economic, political, and organizational development through socio-culturally appropriate activities and operations

and innovative mechanisms. IDB will conduct participatory diagnostic studies and promote the inclusion of the corresponding conclusions and recommendations into the design of projects, programs, and technical cooperation operations. To be considered by IDB, these operations specifically targeting indigenous beneficiaries must have the respective country's support or non-objection and be based on socio-culturally appropriate processes of consultation with the indigenous peoples concerned. The consultations will be carried out in a manner appropriate to the circumstances, with a view to reaching agreement or obtaining consent.

- Mainstreaming Indigenous specificity in Projects with a General Approach. For activities and operations not specifically targeting indigenous peoples but of potential benefit to them, IDB will promote and support the implementation, by borrowing member countries or project proponents,¹⁰ of the appropriate adjustments to address the needs and development opportunities of indigenous peoples. This includes technically feasible complementary measures to: (i) identify and target indigenous peoples that could potentially benefit; (ii) implement socio-culturally appropriate and effective consultation processes with these peoples; (iii) respect the traditional knowledge, cultural heritage, natural assets, social capital, and the systems specific to indigenous peoples with respect to social, economic, linguistic, spiritual and legal¹¹ systems; (iv) adapt services and other activities to facilitate access to them by indigenous beneficiaries, including equitable treatment and, whenever feasible, adequate procedures and criteria, and programs for capacity building and compensation of exclusion factors; and (v) design complementary measures and activities through a process of good faith negotiation with affected indigenous communities.

(3) Safeguards in IDB Operations

In order to be eligible for IDB financing, operations need to comply with applicable legal norms, satisfy the safeguards established in the present policy and set forth in paragraphs below, and be consistent with other IDB's policies [IDB, Operating Guidelines: Indigenous Peoples Policy (IPP), 2006].

- a) Adverse impacts.
- b) Territories, land, and natural resources.
- c) Indigenous rights.
- d) Prevention of ethnically based discrimination.
- e) Indigenous culture, identity, language, and traditional knowledge.
- f) Trans-border indigenous peoples.
- g) Not-contacted indigenous peoples

Table 8.2.3 summarizes the list of recent IDB-funded projects interacting with indigenous

communities in Brazil.

Table 8.2.3 Recent IDB Projects with Indigenous Communities in Brazil

Project Title (ID#)	Date of Approval	Descriptions
Program for accelerating progress of Education in Amazonas (BR-L1328) http://www.iadb.org/en/projects/project-description-title,1303.html?id=BR-L1328	September 24, 2013	Unknown (no document available) Consists of following 4 components, i.e., (1) Expanding the coverage of basic education and the Youth and Adult, (2) Improved progression, completion and quality of basic education, (3) Management and monitoring and evaluating the school network, and (4) Program Administration.
Development of the Cerrado Native Fruit Chain ç Maranhão (BR-M1097) http://www.iadb.org/en/projects/project-description-title,1303.html?id=BR-M1097	14 July 2010	Category C This project seeks to harness the current trend of looking for food with special values and of easy consumption, "superfruits" and derivatives, through the support of the production and processing of native fruits in the region of Cerrado as a strategy for the Cerrado biome preservation and income generation for small local producers, mainly of indigenous origin. The general objective of the Project is to improve the earning capacity of small producers of native fruit of the Cerrado region. The specific objective is to improve the participation of small producers of native fruit of the Cerrado region in the value chain and implement innovative pilot projects within the chain.
To Support the Qualification in Agroecological Production of Young Kayapós India (BR-M1094) http://www.iadb.org/en/projects/project-description-title,1303.html?id=BR-M1094	16 July 2009	Unknown (no document available) The general goal of the Program is to contribute for the institutional strengthening of the Raoni Institute and to promote the consolidation of a model of local sustainable development in the Indian Reserve Kapoto Jarina. More specifically, the program has as goal, to promote the technical qualification of young Indians in agro-ecological production and provide technical assistance for the development of productive activities through sustainable handling and exploitation of local typical products.

Source: Inter-American Development Bank,
<http://www.iadb.org/en/projects/advanced-project-search,1301.html?query=indigenous+brazil>

8.2.4 Confirmation System for Monitoring

Similar to the environmental safeguard, IDB's policy regarding monitoring activities is almost same to that of WB, so similar gap regarding the considerations for the monitoring exists.

Policy directive regarding the supervision and compliance of the environmental safeguards is defined in Policy Directive B.7 of IDB's "Implementation Guidelines for the Environment and Safeguards Compliance Policy (2007)". IDB monitor the executing agency/borrower's compliance with all safeguard requirements stipulated in the loan agreement and project operating or credit regulations. Safeguard requirements, such as those in an Environmental and Social Management Plan (ESMP) must be incorporated into the project contract documents, its operating or credit regulations, or the project bidding documents, as appropriate, setting out as necessary milestones, timeframes and corresponding budgetary allocations to implement and monitor the plan during the course of the project. Safeguard indicators, as appropriate, should be clearly defined in the logical/results framework, followed up in project monitoring reports and reviewed in mid-term reviews and project completion reports. Compliance with safeguard

commitments and identification of unexpected safeguard issues will be analyzed, reviewed and reported as part of IDB's administration and portfolio review missions. Category "A" projects will be reviewed at least annually to assess safeguard compliance. Whenever ex-post evaluations are conducted, these will evaluate the sustainability outcomes of an operation.

8.2.5 Implementation of Information Disclosure during Project Formulation, Project Screening and Project Implementation

Similar to the environmental safeguard, IDB's safeguard policy regarding indigenous people is almost same to that of WB, so similar gap regarding the information disclosure process exists.

Access to information policy is described within IDB's "Disclosure of Information policy (OP-102). This policy is based on the following principles:

- ✓ **Principle 1:** Maximize access to information. IDB reaffirms its commitment to transparency in all of its activities and therefore seeks to maximize access to any documents and information that it produces and to information in its possession that is not on the list of exceptions. Further, so long as IDB is not legally obligated to non-disclosure, and has not received information with the understanding that it will not be disclosed, information on the list of exceptions will be disclosed in accordance with timelines and procedures specified for that purpose.
- ✓ **Principle 2:** Narrow and clear exceptions. Any exceptions to disclosure will be predicated upon the possibility, narrowly and clearly defined, that the potential harm to interests, entities or parties arising from disclosure of information would outweigh the benefits, that IDB is legally obligated to non-disclosure, or has received information with the understanding that it will not be disclosed. IDB may, in exceptional circumstances, decide not to disclose information that would be normally accessible if it determines that the harm that might occur by doing so will outweigh the benefits of access. IDB may also, in exceptional circumstances, make available to the public information ordinarily excluded from disclosure when it determines that the benefit would outweigh the potential harm.
- ✓ **Principle 3:** Simple and broad access to information. IDB will employ all practical means to facilitate access to information. Guidelines for maximizing access to information will include clear and cost-effective procedures and timelines for processing requests and will be based on use of a system for classifying information according to its accessibility over time.
- ✓ **Principle 4:** Explanations of decisions and right to review. When denying access to information IDB will provide an explanation for its decision. Requesters who believe they

have been denied access to information in violation of the policy will have the right of review of such decisions by an interdepartmental Access to Information Committee chaired by the Office of the Presidency. In the event that the requesters are denied access to information by the Committee, they may have further redress through review by an external panel established by the Bank for that exclusive purpose.

The Environment and Safeguards Compliance Policy (GN-2208-20, paragraph 4.20) provides that “as part of the environmental assessment process...appropriate information will be provided in location(s), format(s) and languages(s) to allow for affected parties to be meaningfully consulted.” Management’s annual reports to the Board on implementation of the Access to Information policy (see paragraph 11.1) will review the practices of borrowers with respect to the disclosure of environmental and social assessments related to IDB-financed projects

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Appendix

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Appendix 1 List of International Agreements

Table A1 List of International Agreement

International Agreement	Conclusion date	Date of entry into force
The Washington Convention of 1940		
Vienna Convention for the Protection of the Ozone Layer	22/03/1985	22/09/1988
Stockholm Convention on Persistent Organic Pollutants	22/05/2001	17/05/2004
International Maritime Organization Ballast Water Convention		
International Convention on Civil Liability for Oil Pollution Damage		
Protocol on Environmental Protection to the Antarctic Treaty		
Antarctic Treaty		
Convention on Biological Diversity	05/06/1992	29/12/1993
United Nations Framework Convention on Climate Change	09/05/1992	21/03/1994
Kyoto Protocol to the United Nations Framework Convention on Climate Change	11/12/1997	16/02/2005
United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa	14/10/1994	26/12/1996
Convention on the International Trade in Endangered Species of Wild Flora and Fauna (CITES)		04/11/1975
Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques	10/12/1976	05/10/1978
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal	22/03/1989	05/05/1992
United Nations Convention on the Law of the Sea (UNCLOS)	10/12/1982	16/11/1994
Convention on the Prevention of Marine Dumping Pollution by Dumping Wastes and Other Matter (London Convention)		
Montreal Protocol on Substances that Deplete the Ozone Layer	16/09/1987	01/01/1989
Protocol of 1978 related to the International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL)		
International Tropical Timber Agreement, 1994	26/01/1994	01/01/1997
International Tropical Timber Agreement, 2006	27/01/2006	07/12/2011
Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar)		
International Convention for the Regulation of Whaling		
Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space, and Under Water	24/9/1996	
Convention on Migratory Species of Wild Animals		
Source : International Opportunities Organization/ latinlawyer.com /UN 2013		

Appendix 2 List of IUCN Red List of Animals and Plants

Table A-2.IUCN Red List of Animals and Plants (1/9)

No	Genus	Species	Common Name	Red List Status
ACTINOPTERYGII				
1	Anisotremus	morbandi	Brownstriped Grunt	EN
2	Anthias	salmopunctatus		VU
3	Astyanax	trerythropterus		VU
4	Austrolebias	affinis	Killifish	VU
5	Balistes	vetula	Old Wife, Old Wife, Queen Triggerfish, Triggerfish, Turbot	VU
6	Brycon	orthotaenia		VU
7	Campellobiias	brucei	Santa Catarina Sabrefn	VU
8	Cynolebias	botonei	Brasilia Lyrefn	VU
9	Cynolebias	constanciae	Annual Tropical Killifish, Pearlfish	VU
10	Epinephelus	tajara	Atlantic Goliath Grouper, Jewfish, Goliath Grouper	CR
11	Epinephelus	marginatus	Dusky Grouper	EN
12	Hyporthodus	flavilimatus	Poey's Grouper, White Grouper, Yellowedge Grouper, Yellowfined Grouper, Grouper	VU
13	Hyporthodus	ingritus	Warsaw Grouper, Black Grouper, Black Jewfish	CR
14	Hyporthodus	niveatus	Spotted Grouper, Seabass, Snow Grouper	VU
15	Kajika	abida	White Marlin, Marlin, Skilgabee	VU
16	Lachnoleimus	maximus	Hogfish	VU
17	Leptopbsterium	tordicho		EN
18	Leptolebias	marcoratus	Annual Tropical Killifish, Ginger Pearlfish	VU
19	Leptolebias	minimus	Annual Tropical Killifish, Minute Pearlfish	VU
20	Leptolebias	opalescens	Annual Tropical Killifish, Opalescent Pearlfish	VU
21	Leptolebias	splendens	Annual Tropical Killifish, Splendid Pearlfish	VU
22	Listrura	camposi		VU
23	Lutjanus	analis	Mutton Snapper	VU
24	Lutjanus	cyanopterus	Canteen Snapper, Cuban Snapper, Cubera Snapper, Gray Snapper, Guahuco	VU
25	Makara	negricans	Blue Marlin	VU
26	Megabps	atlanticus	Tarpon	VU
27	Mycteroperca	interstitialis	Crossband Rockfish, Grey Mankok, Hamlet, Harlequin Rockfish, Princess Rockfish, Rockfish, Salmon Grouper, Salmon Rockfish, Scamp, Yellowmouth Grouper	VU
28	Pagrus	pagrus	Common Seabream, Couch's Sea-bream, Couch's Sea Bream, Porgy, Red Porgy, Common Sea Bream	EN
29	Pseudotocinclus	tetensis		VU
30	Scarus	trispinosus	Greenback Parrotfish	EN
31	Simpsonichthys	picturatus		VU
32	Stegastes	sanctipauli	Saint Pauls Gregory	VU
33	Thunnus	maccoyii	Southern Bluefin Tuna	CR
34	Thunnus	obesus	Bigeye Tuna	VU
35	Thunnus	thynnus	Atlantic Bluefin Tuna	EN
AMPHIBIA				
1	Adeobryne	batuensis		VU
2	Adeobryne	maranguapensis		EN
3	Ambates	offersides		VU
4	Ambates	subfolionidifans		VU
5	Ateopus	spumarius		VU
6	Bokermannohyla	zecksohni		CR
7	Bokermannohyla	vubanæ		VU
8	Chiasmocelis	carvalhoi		EN
9	Cyclobramphus	acangan		VU
10	Cyclobramphus	faustoi		CR
11	Dasypops	schirchi		VU
12	Dendrobryncus	carvalhoi		EN

Source: <http://www.iucnredlist.org/>

Table A-2.IUCN Red List of Animals and Plants (continued, 2/9)

13	Euparkere	la robusta		VU
14	Euparkere	la tridactyla		VU
15	Hemiphractus	phnsoni		EN
16	Hobaden	bradei		CR
17	Hypsiboas	cymbalum		CR
18	Melanophryniscus	admirabilis	Red-belly toad	CR
19	Melanophryniscus	dorsalis		VU
20	Melanophryniscus	macrogranulosus		VU
21	Melanophryniscus	montevideus		VU
22	Melanophryniscus	peritus		CR
23	Oreophryne	la quechii		VU
24	Phrynomedusa	fimbriata		EX
25	Phyllomedusa	ayeaye		CR
26	Phyllomedusa	atlantica		VU
27	Phyllomedusa	soaresi		EN
28	Proceratophrys	moratoi	Botucatu Escuerzo	CR
29	Scinax	abacraz		CR
30	Scinax	belbini		EN
31	Scinax	favovichi		CR
32	Scinax	pekoiti		CR
33	Thoropa	lutzi		EN
34	Thoropa	petropolitana		VU
AVES				
1	Acrobatoms	fonsecai	Pink-legged Graveteiro	VU
2	Agamia	agami	Agami Heron	VU
3	Alecturus	risora	Strange-tailed Tyrant	VU
4	Alecturus	tricolor	Cock-tailed Tyrant	VU
5	Amazona	brasiliensis	Red-tailed Amazon, Red-tailed Parrot	VU
6	Amazona	festiva	Festive Amazon, Festive Parrot	VU
7	Amazona	pretrei	Red-spectacled Amazon, Red-spectacled Parrot	VU
8	Amazona	rhodocorytha	Red-browed Amazon, Red-topped Parrot, Red-topped Amazon, Red-browed Parrot	EN
9	Amazona	vinacea	Vinaceous-breasted Amazon, Vinaceous-breasted Parrot, Vinaceous Parrot, Vinaceous Amazon	EN
10	Anodorhynchus	glaucus	Glaucous Macaw	CR
11	Anodorhynchus	hyacinthinus	Hyacinth Macaw	EN
12	Anodorhynchus	leari	Lear's Macaw, Indigo Macaw	EN
13	Anthus	nattereri	Ochre-breasted Pipit	VU
14	Antiphila	bokemanni	Ararpe Manakin	CR
15	Aratinga	sostrata	Sun Parakeet	EN
16	Batatas	ningropectus	White-bearded Antshrike	VU
17	Calyptura	cristata	Kinglet Calyptura, Kinglet Cotinga	CR
18	Capito	dayi	Black-girdled Barbet	VU
19	Carduelis	yarrellii	Yellow-faced Siskin	VU
20	Carpodacus	melanocephala	Black-headed Berryeater	VU
21	Cebs	obreni	Kaempfer's Woodpecker, Gaatinga Woodpecker, Piau Woodpecker	EN
22	Cercomacra	carbonaria	Rio Branco Antbird	CR
23	Cercomacra	ferdandi	Banana Antbird	VU
24	Chrysomitris	geoffroyi	Purple-winged Ground-dove, Purple-winged Ground Dove, Purple-barred Ground-dove, Purple-winged Ground-Dove	CR
25	Cyrtocobacter	atrogularis	Rondonia Bushbird, Rondonia Bushbird	VU
26	Cyanocitta	superciliosa	Rufous Tawitwiti	VU
27	Columbiga	cyanopsis	Blue-eyed Ground-dove, Blue-eyed Ground Dove, Blue-eyed Ground-Dove	CR

Source: <http://www.iucnredlist.org/>

Table A-2.IUCN Red List of Animals and Plants (continued, 3/9)

28	<i>Conostrum</i>	<i>marginata</i>	Pearly-breasted Conebill	VU
29	<i>Conothraupis</i>	<i>mesoleuca</i>	Cone-billed Tanager	CR
30	<i>Coryphaspiza</i>	<i>melanotis</i>	Black-masked Finch	VU
31	<i>Cotinga</i>	<i>maculata</i>	Banded Cotinga, Spotted Cotinga	EN
32	<i>Cranioleuca</i>	<i>muelleri</i>	Scrub Spinetail	EN
33	<i>Crax</i>	<i>albertor</i>	Black Curassow	VU
34	<i>Crax</i>	<i>blumenbachii</i>	Red-billed Curassow, Red-knobbed Curassow, Mutum	EN
35	<i>Crax</i>	<i>gaboussa</i>	Wattled Curassow	EN
36	<i>Culicivora</i>	<i>caudacuta</i>	Sharp-tailed Tyrant, Sharp-tailed Grass-Tyrant, Sharp-tailed Grass Tyrant	VU
37	<i>Curaeus</i>	<i>forbesi</i>	Forbes's Blackbird	EN
38	<i>Cyanopsitta</i>	<i>spixii</i>	Spix's Macaw, Little Blue Macaw	CR
39	<i>Dendrocopptes</i>	<i>hoffmannsi</i>	Hoffmann's Woodcreeper, Hoffmann's Woodcreeper	VU
40	<i>Dimedeia</i>	<i>dabbenena</i>	Tristan Albatross	CR
41	<i>Dimedeia</i>	<i>epomophora</i>	Southern Royal Albatross, Royal Albatross	VU
42	<i>Dimedeia</i>	<i>exulans</i>	Wandering Albatross	VU
43	<i>Dimedeia</i>	<i>sanfordi</i>	Northern Royal Albatross	EN
44	<i>Dryocopus</i>	<i>gabatus</i>	Helmeted Woodpecker	VU
45	<i>Dysithamnus</i>	<i>plumbeus</i>	Plumbeous Antvireo, Plumbeous Antshrike	VU
46	<i>Ebena</i>	<i>ridleyana</i>	Noronha Ebena	VU
47	<i>Eboscyta</i>	<i>psychopomus</i>	Bahia Tapacub, Chestnut-sided Tapacub	CR
48	<i>Eothreptus</i>	<i>candicans</i>	White-winged Nightjar	EN
49	<i>Formicivora</i>	<i>erythronotos</i>	Black-hooded Antwren	EN
50	<i>Formicivora</i>	<i>littoralis</i>	Restinga Antwren	EN
51	<i>Geositta</i>	<i>poecibptera</i>	Campaner	VU
52	<i>Geotrygon</i>	<i>saphirina</i>	Sapphire Quail-dove, Sapphire Quail-Dove	VU
53	<i>Glaucidium</i>	<i>mooorum</i>	Pernambuco Pygmy-owl Pernambuco Pygmy Owl Pernambuco Pygmy-owl	CR
54	<i>Glaucis</i>	<i>dohrnii</i>	Hook-billed Hermit	EN
55	<i>Guaruba</i>	<i>guarouba</i>	Golden Parakeet, Golden Conure	VU
56	<i>Gubernatrix</i>	<i>cristata</i>	Yellow Cardinal	EN
57	<i>Harpyhalæetus</i>	<i>coronatus</i>	Crowned Eagle, Crowned Solitary Eagle	EN
58	<i>Hemitriccus</i>	<i>furcatus</i>	Fork-tailed Pygmy-tyrant, Fork-tailed Pygmy-Tyrant, Fork-tailed Tody-Tyrant	VU
59	<i>Hemitriccus</i>	<i>kaempferi</i>	Kaempfer's Tody-tyrant, Kaempfer's Tody-Tyrant	EN
60	<i>Hemitriccus</i>	<i>mirandae</i>	Buff-breasted Tody-tyrant, Buff-breasted Tody-Tyrant	VU
61	<i>Herpsibichmus</i>	<i>pectoralis</i>	Pectoral Antwren	VU
62	<i>Herpsibichmus</i>	<i>piabatus</i>	Bahia Antwren, Piabated Antwren	VU
63	<i>Hylaxetastes</i>	<i>brigidai</i>	Mato Grosso Woodcreeper	VU
64	<i>Hylaxetastes</i>	<i>uniformis</i>	Uniform Woodcreeper	VU
65	<i>Jacamara</i>	<i>tridactyla</i>	Three-toed Jacamar	VU
66	<i>Laterallus</i>	<i>xenopterus</i>	Rufous-faced Cuckoo	VU
67	<i>Lepidothrix</i>	<i>iris</i>	Opa-crowned Manakin	VU
68	<i>Lepidothrix</i>	<i>vilasboasi</i>	Golden-crowned Manakin	VU
69	<i>Leptodon</i>	<i>forbesi</i>	White-colored Kite	CR
70	<i>Leucopternis</i>	<i>lacermatus</i>	White-necked Hawk	VU
71	<i>Lophornis</i>	<i>gouletii</i>	Dot-eared Coquette	VU
72	<i>Mergus</i>	<i>octostaceus</i>	Brazilian Merganser	CR
73	<i>Merulaxis</i>	<i>stresemanni</i>	Stresemann's Bristlefront	CR
74	<i>Mitu</i>	<i>mitu</i>	Alagoas Curassow	EW
75	<i>Mymeciza</i>	<i>ruficauda</i>	Scalped Antbird	EN
76	<i>Mymecoborus</i>	<i>lugubris</i>	Ash-breasted Antbird	VU
77	<i>Mymecoborus</i>	<i>melanurus</i>	Black-tailed Antbird	VU
78	<i>Mymotherula</i>	<i>fluminensis</i>	Rio de Janeiro Antwren	CR
79	<i>Mymotherula</i>	<i>minor</i>	Salvador's Antwren	VU
80	<i>Mymotherula</i>	<i>snowi</i>	Alagoas Antwren	CR
81	<i>Mymotherula</i>	<i>surinamensis</i>	Guianan Streaked Antwren, Guianan Streaked-Antwren	VU
82	<i>Mymotherula</i>	<i>urosticta</i>	Band-tailed Antwren	VU

Source: <http://www.iucnredlist.org/>

Table A-2.IUCN Red List of Animals and Plants(continued, 4/9)

83	<i>Nemosia</i>	<i>rourei</i>	Cherry-throated Tanager	CR
84	<i>Neomorphus</i>	<i>squamiger</i>	Scabed Ground-cuckoo, Scabed Ground-Cuckoo	VU
85	<i>Neopelma</i>	<i>aurifrons</i>	W ed's Tyrant-m anakin, W ed's Neopelma, W ed's Tyrant-M anakin	VU
86	<i>Nothura</i>	<i>minor</i>	Lesser Nothura	VU
87	<i>Numenius</i>	<i>borealis</i>	Eskimo Curlew	CR
88	<i>Onychorhynchus</i>	<i>swainsoni</i>	Atlantic Royal Flycatcher, Swainson's Royal Flycatcher	VU
89	<i>Oryzoborus</i>	<i>maximiliani</i>	Great-billed Seed-finch, Great-billed Seed Finch, Great-billed Seed-Finch	VU
90	<i>Patagonias</i>	<i>subnivea</i>	Ruddy Pigeon	VU
91	<i>Penebpe</i>	<i>pacucaca</i>	White-browed Guan	VU
92	<i>Penebpe</i>	<i>ochrogaster</i>	Chestnut-bellied Guan	VU
93	<i>Penebpe</i>	<i>pibata</i>	White-crested Guan	VU
94	<i>Philydor</i>	<i>novaeis</i>	Angoas Foliage-gleaner	CR
95	<i>Phoebastria</i>	<i>fusca</i>	Sooty Abatross, Dark-manated Sooty Abatross	EN
96	<i>Phylloscartes</i>	<i>beckeri</i>	Bahia Tyrannulet	EN
97	<i>Phylloscartes</i>	<i>ceciliae</i>	Angoas Tyrannulet, Long-tailed Tyrannulet	EN
98	<i>Phylloscartes</i>	<i>kronei</i>	Restinga Tyrannulet	VU
99	<i>Phylloscartes</i>	<i>roquettei</i>	Minas Gerais Tyrannulet	EN
100	<i>Picumnus</i>	<i>spibgaster</i>	White-bellied Piculet	VU
101	<i>Picumnus</i>	<i>varzeae</i>	Varzea Piculet	EN
102	<i>Pionites</i>	<i>eucogaster</i>	White-bellied Parrot	VU
103	<i>Pipile</i>	<i>cumanensis</i>	Ble-throated Piping-guan, Ble-throated Piping-Guan	VU
104	<i>Pipile</i>	<i>acutanga</i>	Black-fronted Piping-guan, Black-fronted Piping-Guan, Black-fronted Piping Guan, Black Fronted Curassow	EN
105	<i>Piprites</i>	<i>pibata</i>	Black-capped Piprites	VU
106	<i>Pityrhynchus</i>	<i>leucoryphus</i>	Russet-winged Spadebill	VU
107	<i>Poospiza</i>	<i>cinerea</i>	Cinereous Warbling-finch, Cinereous Warbling Finch, Cinereous Warbling-Finch	VU
108	<i>Porzana</i>	<i>spibptera</i>	Dot-winged Crake	VU
109	<i>Primolius</i>	<i>coubni</i>	Ble-headed Macaw	VU
110	<i>Procellaria</i>	<i>aequinoctialis</i>	White-chinned Petrel	VU
111	<i>Procellaria</i>	<i>conspicillata</i>	Spectacled Petrel	VU
112	<i>Procnias</i>	<i>nudicollis</i>	Bare-throated Belbird	VU
113	<i>Psophia</i>	<i>viridis</i>	Dark-winged Trumpeter	EN
114	<i>Pterodroma</i>	<i>aminoniana</i>	Trindade Petrel Herald Petrel	VU
115	<i>Pterodroma</i>	<i>incerta</i>	Atlantic Petrel	EN
116	<i>Pyrgena</i>	<i>atra</i>	Fringe-backed Fire-eye	EN
117	<i>Pyrilia</i>	<i>vulturina</i>	Vulturine Parrot	VU
118	<i>Pyrrhura</i>	<i>cruentata</i>	Ochre-marked Parakeet, Red-eared Conure, Ble-throated Parakeet	VU
119	<i>Pyrrhura</i>	<i>grisepectus</i>	Grey-breasted Parakeet, Gray-breasted Parakeet	CR
120	<i>Pyrrhura</i>	<i>lepida</i>	Pearly Parakeet	VU
121	<i>Pyrrhura</i>	<i>perata</i>	Crimson-bellied Parakeet	VU
122	<i>Pyrrhura</i>	<i>primeri</i>	Primer's Parakeet	EN
123	<i>Rhegmatorhina</i>	<i>gymnops</i>	Bare-eyed Antbird, Santarem Antbird	VU
124	<i>Rhopomis</i>	<i>ardesiacus</i>	Slender Antbird	EN
125	<i>Scytalopus</i>	<i>iraensis</i>	Marsh Tapacub	EN
126	<i>Sporophila</i>	<i>cinnamomea</i>	Chestnut Seedeater	VU
127	<i>Sporophila</i>	<i>fabrostris</i>	Temminck's Seedeater	VU
128	<i>Sporophila</i>	<i>frontalis</i>	Buffy-fronted Seedeater, Buffy-throated Seedeater	VU
129	<i>Sporophila</i>	<i>melanops</i>	Hooded Seedeater	CR
130	<i>Sporophila</i>	<i>negrorufa</i>	Black-and-tawny Seedeater	VU
131	<i>Sporophila</i>	<i>palustris</i>	Marsh Seedeater	EN
132	<i>Stumeola</i>	<i>defilippii</i>	Pampas Meadow Lark	VU
133	<i>Stymphalidris</i>	<i>acutirostris</i>	Parana Antwren, Marsh Antwren	EN
134	<i>Synalaxis</i>	<i>infusata</i>	Pinto's Spinetail Pemambuco Spinetail	EN
135	<i>Synalaxis</i>	<i>kolari</i>	Hoary-throated Spinetail	CR
136	<i>Synalaxis</i>	<i>whitneyi</i>	Bahia Spinetail	VU
137	<i>Tangara</i>	<i>fastuosa</i>	Seven-colored Tanager, Seven-colored Tanager	VU

Source: <http://www.iucnredlist.org/>

Table A-2.IUCN Red List of Animals and Plants (continued, 5/9)

138	Tangara	peruviana	Black-backed Tanager, Black-cheeked Tanager	VU
139	Taoniscus	nanus	Dwarf Tinamou	VU
140	Terenura	sicki	Orange-bellied Antwren, Lagoas Antwren	EN
141	Thalassarche	chrorhynchos	Atlantic Yellow-nosed Albatross, Yellow-nosed Albatross	EN
142	Thalassarche	chrystoma	Grey-headed Albatross, Grey-headed Mollusk, Grey-headed Albatross	EN
143	Thripophaga	macroura	Striated Softtail	VU
144	Tijuca	condita	Grey-winged Cotinga, Gray-winged Cotinga	VU
145	Tinamus	tao	Grey Tinamou, Gray Tinamou	VU
146	Touit	huetii	Scarlet-shoudered Parrotlet	VU
147	Touit	melanotus	Brown-backed Parrotlet, Black-eared Parrotlet	EN
148	Touit	surdus	Golden-tailed Parrotlet	VU
149	Xanthopsar	flavus	Saffron-cowbird Blackbird	VU
150	Xiphocolaptes	fabrostris	Moustached Woodcreeper	VU
151	Xiphobena	atropurpurea	White-winged Cotinga	EN
152	Xolmis	domincanus	Black-and-white Monjita	VU
BIVALVIA				
1	Castalia	martensi		VU
2	Dipbdon	dunkerianus		EN
3	Dipbdon	expansus		VU
4	Dipbdon	fontaineanus		EN
5	Dipbdon	pefferi		VU
CHONDRICHTHYES				
1	Alopias	supercilius	Beye Thresher Shark, False Thresher	VU
2	Alopias	vuohus	Common Thresher Shark	VU
3	Atlantora	casteaudi	Spotback Skate	EN
4	Atlantora	cyclophora	Eyespot Skate	VU
5	Atlantora	platana	La Plata Skate	VU
6	Benthobatis	krefftii	Brazilian Blind Electric Ray	VU
7	Carcharhinus	bingmanus	Oceanic Whitetip Shark, Whitetip Shark, White-tipped Shark, Whitetip Oceanic Shark	VU
8	Carcharhinus	obscurus	Dusky Shark	VU
9	Carcharhinus	plumbeus	Sandbar Shark	VU
10	Carcharhinus	signatus	Night Shark	VU
11	Carcharias	taurus	Sand Tiger, Spotted Ragged-tooth Shark, Grey Nurse Shark, Sand Tiger Shark, Grey Nurse Shark, Spotted Raggedtooth Shark	VU
12	Carcharodon	carcharias	Great White Shark	VU
13	Centrophorus	granulosus	Guber Shark	VU
14	Dasyatis	colarensis	Colares Stingray	VU
15	Diplobatis	pictus	Variegated Electric Ray	VU
16	Dipturus	menzii	South Brazilian Skate	VU
17	Dipturus	trachydermus	Roughskin Skate	VU
18	Galeorhinus	galeus	Southern Taper, Sweet William, Turbon, Tope, Tope, Tope Shark, Vitamin Shark, Liver-oil Shark, Miller's Dog	VU
19	Galeus	micaronei	Southern Sawtail Catshark	VU
20	Gurgesia	dorsalifera	Ovenfish Skate	VU
21	Gymnura	altavela		VU
22	Isogomphodon	oxyrinchus	Daggemose Shark	CR
23	Isurus	oxyrinchus	Shortfin Mako	VU
24	Isurus	paucus	Longfin Mako	VU
25	Lamna	nasus	Porbeagle	VU
26	Manta	birostris	Giant Manta Ray, Oceanic Manta Ray, Pacific Manta Ray, Pacific Manta Ray, Chevron Manta Ray	VU
27	Mobula	rochebrunei	Lesser Guinean Devil Ray	VU
28	Mustelus	fasciatus	Striped Dogfish, Striped Smoothhound	CR
29	Mustelus	schnitzi	Narrownose Smoothhound	EN
30	Narcine	bancroftii	Caribbean Electric Ray	CR
31	Odontaspis	ferox	Small-tooth Sand Tiger Shark, Herbst's Nurse Shark, Sand Shark, Ragged-tooth Shark, Smalltooth Sand Tiger Shark	VU
32	Pristis	pristis	Large-tooth Sawfish	CR
33	Rhinobatos	horkei	Brazilian Guitarfish	CR

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Table A-2.IUCN Red List of Animals and Plants (continued, 6/9)

34	Rhinoptera	brasiliensis	Brazilian Cownose Ray	EN
35	Raja	agassizii	Rib Skate	VU
36	Schroederichthys	saurisqualus	Lizard Catshark	VU
37	Sphyrna	lewini	Scalped Hammerhead	EN
38	Sphyrna	mokarran	Great Hammerhead, Hammerhead Shark, Squat-headed Hammerhead Shark	EN
39	Sphyrna	tudes	Curry Shark, Goblen Hammerhead, Smalleye Hammerhead Shark	VU
40	Squalus	acanthias	Pink Dogfish, Spurdog, Cape Shark	VU
41	Squattha	argentina	Argentine Angel Shark, Longfin Angel Shark	EN
42	Squattha	guggenheim	Hidden Angel Shark, Spiny Angel Shark	EN
43	Squattha	punctata	Angular Angel Shark	EN
44	Sympterygia	acuta	Bluntnose Fanshark	VU
45	Zapteryx	brevirostris	Shortnose Guitarfish	VU
GASTROPODA				
1	Conus	henckesi		VU
2	Drymaeus	acervatus		VU
3	Drymaeus	hensleyi		VU
4	Gonyostomus	gonyostomus		CR
5	Gonyostomus	insularis		VU
6	Hiridaba	curytbana		CR
7	Megabulimus	cardosoi		EX
8	Megabulimus	fragilior		EN
9	Megabulimus	grandis		CR
10	Megabulimus	bpesi		EN
11	Megabulimus	parafragilior		EN
12	Megabulimus	proclivis		CR
13	Ptychodon	schuppi		EN
14	Radixconus	goeblii		CR
15	Radixconus	richcoensis		EN
16	Radixdiscus	amoenus		EN
17	Radixdiscus	compactus		VU
18	Tomigerus	gibberulus		EX
19	Tomigerus	turbatus		EX
20	Zibhogyra	pauistana		CR
INSECTA				
1	Acanthagrion	taxaense		CR
2	Arawacus	aethesa		EN
3	Ateuchus	squalidus		VU
4	Canthon	corpulentus		VU
5	Canthon	quadrupunctatus		VU
6	Cyanophrys	bertha		VU
7	Dichotomus	eucranoides		EN
8	Dichotomus	schiffneri		EN
9	Egga	newtonsantosi		CR
10	Erythroplax	acantha		CR
11	Erythroplax	nivea		CR
12	Eurytides	phittas	Yellow Kite Swallowtail	VU
13	Heliconius	nattereri	Natterer's Longwing	CR
14	Heteragrion	flavovittatum		VU
15	Jocbeya	praecellus		EN
16	Macrodontia	cervicornis		VU
17	Mecistogaster	asticta		VU
18	Mecistogaster	pronoti	Atlantic Helicopter	CR
19	Megadytes	ducalis		EX
20	Micrathyrä	divergens		VU
21	Micrathyrä	kebekoperi		CR

Source: <http://www.iucnredlist.org/>

Table A-2.IUCN Red List of Animals and Plants (continued, 7/9)

22	Micrathyrax	pseudohypodigma		VU
23	Magrion	ruberio		CR
24	Niroda	bephegor		EN
25	Parides	ascanus	Fulminense Swallowtail	VU
26	Pedartium	hirsutum		VU
27	Rhantus	orbignyi		EX
MALACOSTRACA				
1	Cryphops	brasiliensis		CR
2	Macrobrachium	denticulatum		CR
3	Trichodactylus	crassus		EN
MAMMALIA				
1	Abuatta	bebebi	Red-handed Howler Monkey, Red-handed Howling Monkey	VU
2	Abuatta	discolor	Spix's Red-handed Howler Monkey, Red-handed Howling Monkey	VU
3	Abuatta	ulata	Maranho Red-handed Howler Monkey, Red-handed Howling Monkey	EN
4	Ateles	bebebi	Long-haired Spider Monkey, White-bellied Spider Monkey	EN
5	Ateles	chamek	Back-faced Back Spider Monkey, Chamek Spider Monkey, Peruvian Back Spider Monkey	EN
6	Ateles	marginatus	White-cheeked Spider Monkey, White-whiskered Spider Monkey	EN
7	Ateles	paniscus	Guiana Spider Monkey, Red-faced Back Spider Monkey, Back Spider Monkey	VU
8	Balaenoptera	borealis	Sei Whale, Rudolph's Rorqual, Coalfish Whale, Pollack Whale	EN
9	Balaenoptera	musculus	Bale Whale, Sperm Whale, Sperm Whale, Pygmy Bale Whale	EN
10	Balaenoptera	physalus	Finn Whale, Fin-backed Whale, Finner, Common Rorqual, Herring Whale, Razorback, Finback	EN
11	Bistoceros	dichotomus	Marsh Deer	VU
12	Brachyteles	arachnoides	Muriqui, Southern Muriqui, Woolly Spider Monkey	EN
13	Brachyteles	hypoxanthus	Northern Muriqui	CR
14	Bradypus	torquatus	Maned Three-toed Sloth, Maned Sloth	VU
15	Cacajao	ayresi	Ayres Back Uakari	VU
16	Cacajao	calvus	Black-headed Uakari, Black Uakari, Red-and-white Uakari, Red Uakari	VU
17	Cacajao	hosomi	Black-headed Uakari, Uakari	VU
18	Callibella	humilis	Black-crowned Dwarf Marmoset, Roosma's Dwarf Marmoset	VU
19	Calliobes	barbarabrownae	Banded Titi Monkey, Northern Bahian Banded Titi Monkey, Northern Bahian Banded Titi, Barbara Brown's Titi	CR
20	Calliobes	coimbrai	Coimbra's Titi Monkey, Coimbra's Titi Monkey, Coimbra's Titi	EN
21	Calliobes	melanocephalus	Coastal Black-headed Titi, Southern Bahian Masked Titi	VU
22	Calliobes	personatus	Atlantic Titi, Masked Titi, Northern Masked Titi	VU
23	Callimico	goeldii	Goeldi's Monkey, Goeldi's Monkey, Callimico, Goeldi's Tamarin, Goeldi's Marmoset	VU
24	Callistomys	pictus	Painted Tree-rat, Painted Tree Rat	EN
25	Callithrix	aurita	Buff-tufted-ear Marmoset, White-eared Marmoset	VU
26	Callithrix	flaviceps	Buff-headed Marmoset	EN
27	Cavia	intermedia		CR
28	Cebus	flavus	Banded Capuchin, Marcgrave's Capuchin Monkey	CR
29	Cebus	kaapori	Kaapor Capuchin, Kaapor Capuchin	CR
30	Cebus	robustus	Crested Capuchin, Robust Tufted Capuchin	EN
31	Cebus	xanthosternus	Buff-headed Capuchin, Yellow-breasted Capuchin	CR
32	Chaetomys	subspinosus	Bristle-spined Rat, Thn-spined Porcupine	VU
33	Chiropotes	abnascus	Red-nosed Bearded Saki, Red-nosed Saki, White-nosed Bearded Saki, White-nosed Saki	EN
34	Chiropotes	satanas	Black Bearded Saki, Black Saki, Bearded Saki, Brown-bearded Saki	CR
35	Chiropotes	utahickae	Utahick's Bearded Saki, Utahick's Bearded Saki	EN
36	Ctenomys	flamarboni	Tuco-tuco of The Dunes	EN
37	Ctenomys	lami		VU
38	Desmodus	draculae	Giant Vampire Bat	EX
39	Dinomys	branickii	Pacarana	VU
40	Euryoryzomys	lami	Monster Rice Rat	EN
41	Hylocichla	oniscus	Sowbug Rice Rat	VU
42	Juulomys	rimofrons	Cleft-headed Juulomys	VU
43	Juscelinomys	candango	Candango Mouse	EX
44	Kunsia	fronto	Fossil Giant Rat	EN

Source: <http://www.iucnredlist.org/>

Table A-2.IUCN Red List of Animals and Plants (continued, 8/9)

45	Lagothrix	cana	Geoffroy's/peruvian Woolly Monkey, Geoffroy's Woolly Monkey	EN
46	Lagothrix	lagotricha	Common Woolly Monkey, Humboldt's Woolly Monkey, Woolly Monkey	VU
47	Lagothrix	poepigii	Poepig's Woolly Monkey, Red Woolly Monkey, Silvery Woolly Monkey	VU
48	Leontopithecus	caissara	Black-faced Lion Tamarin	CR
49	Leontopithecus	chrysomelas	Golden-headed Lion Tamarin	EN
50	Leontopithecus	chrysopygus	Black Lion Tamarin, Golden-rumped Lion Tamarin	EN
51	Leontopithecus	rosalia	Golden Lion Tamarin	EN
52	Leopardus	tigrinus	Oncilla, Little Spotted Cat, Tiger Cat, Little Tiger Cat	VU
53	Mazama	bororo	Small Red Rocket	VU
54	Mico	leucippe	Golden-white Bare-ear Marmoset	VU
55	Mico	rondoni	Rondon's Marmoset, Rondonia Marmoset	VU
56	Micromys	transitorius	Transitional Colilargo	EN
57	Monodelphis	umbristrata	Faint-striped Opossum, Red Three-striped Opossum	VU
58	Monodelphis	unistrata	Single-striped Opossum, One-striped Opossum, One-striped Short-tailed Opossum	CR
59	Myrmecophaga	tridactyla	Giant Anteater	VU
60	Neonycteris	pusilla	Least Big-eared Bat	VU
61	Noronhomys	vespuccii		EX
62	Phaenomys	ferrugineus	Rio De Janeiro Arboreal Rat	VU
63	Phyllomys	brasilensis	Red-nosed Tree Rat	EN
64	Phyllomys	lundi		EN
65	Phyllomys	antiquirensis		CR
66	Phyllomys	thomasi	Giant Atlantic Tree Rat	EN
67	Phyllomys	unobor	Unobred Tree Rat	CR
68	Physeter	macrocephalus	Sperm Whale, Spermaceet Whale, Cachébt, Pot Whale	VU
69	Pithecia	abicans	White Saki, Buffy Saki, Buffy Saki, White Saki	VU
70	Pontoporia	blainvillii	Franciscana, La Plata River Dolphin	VU
71	Priontonotus	maximus	Giant Armadillo	VU
72	Pteronura	brasilensis	Giant Otter, Giant Brazilian Otter	EN
73	Saguinus	bicolor	Brazilian Bare-faced Tamarin, Pied Bare-faced Tamarin, Pied Bare-face Tamarin, Pied Tamarin	EN
74	Saguinus	negrus	Black-headed Tamarin	VU
75	Saimiri	vanzolinii	Black-headed Squirrel Monkey, Black Squirrel Monkey	VU
76	Tapirus	terrestris	Lowland Tapir, South American Tapir, Brazilian Tapir	VU
77	Tayassu	pecari	White-lipped Peccary	VU
78	Thyblomys	karimii	Karim's Fat-tailed Mouse Opossum	VU
79	Tolypeutes	tridactylus	Brazilian Three-banded Armadillo	VU
80	Trichechus	inunguis	Amazonian Manatee, South American Manatee	VU
81	Trichechus	manatus	American Manatee, West Indian Manatee	VU
82	Trinomys	eliasi		EN
83	Trinomys	moopani		EN
84	Trinomys	yonenagae		EN
85	Wilfredomys	oenax	Greater Wilfred's Mouse	EN
MAXILOPODA				
1	Notodaptomys	dubius		VU
2	Notodaptomys	maracabensis		VU
3	Tropocyclops	federensis		VU
4	Tropocyclops	nananae		VU
MYXINI				
1	Myxhe	sotoi		VU
REPTILIA				
1	Anisolepis	undulatus	Wegmann's Tree Lizard	VU
2	Bachia	bresslaui	Bresslau's Bachia	VU
3	Bothropodes	abatrax	Abatrax Lancehead	CR
4	Bothropodes	insularis	Golden Lancehead, Queimada Island Bothrops	CR
5	Bothrops	pirajai	Pirajai Lancehead	VU
6	Calamodontophis	paucidens	Tropical Forest Snake	VU

Source: <http://www.iucnredlist.org/>

Table A-2.IUCN Red List of Animals and Plants (continued, 9/9)

7	Calamodontophis	ronaldoi		EN
8	Calyptommatius	confusus		EN
9	Caretta	caretta	Loggerhead	EN
10	Chebraia	mydas	Green Turtle	EN
11	Chebrodis	denticulata	Yellow-footed Tortoise, South American Tortoise, South American Yellow-footed Tortoise, Brazilian Giant Tortoise, Forest Tortoise	VU
12	Corallus	cropanii	Cropan's Boa	EN
13	Dermochelys	coriacea	Leatherback, Leatherback Sea Turtle, Leathery Turtle, Luth, Trunkback Turtle, Trunk Turtle, Coffin-back	VU
14	Eretmochelys	imbricata	Hawksbill Turtle	CR
15	Hydromedusa	maximiliani	Brazilian Snake-necked Turtle	VU
16	Leptochelys	olivacea	Olive Ridley, Pacific Ridley	VU
17	Libinia	arambarensis		EN
18	Libinia	lutzae		VU
19	Libinia	occidentalis		VU
20	Lophis	atraventer		VU
21	Mesoclemmys	hogeii	Hoge's Side-necked Turtle, Hoge's Sideneck Turtle, Hoge's Toadhead Turtle	EN
22	Peltecephalus	dumerilianus	Big-headed Amazon River Turtle, Big-headed Sideneck	VU
23	Phibodyas	livida		VU
24	Podocnemis	erythrocephala	Red-headed Amazon River Turtle, Red-headed Sideneck, Red-headed River Turtle	VU
25	Podocnemis	sextuberculata	Six-tubercled Amazon River Turtle, Six-tubercled River Turtle	VU
26	Podocnemis	unifilis	Yellow-spotted River Turtle, Yellow-spotted Sideneck Turtle, Yellow-headed Sideneck	VU
27	Psibphthaimus	paeminosus		VU
28	Tantilla	boipiranga		VU
29	Trachemys	adutrinx	Carvalho's Slider, Maranhão Slider	EN

Source: IUCN, <http://www.iucnredlist.org/>

Appendix 3 List of CITES registered animals in Brazil

Table A3 List of CITES registered animals in Brazil (1/20)

Kingdom	Class	Order	Family	Genus	Species	Scientific Name	Listing
Animalia	Mammalia	Artiodactyla	Cervidae	Blastocercus	dichotomus	Blastocercus dichotomus	I
Animalia	Mammalia	Artiodactyla	Cervidae	Ozotoceros	bezoartibus	Ozotoceros bezoartibus	I
Animalia	Mammalia	Artiodactyla	Tayassuidae	Pecari	tapecu	Pecari tapecu	II
Animalia	Mammalia	Artiodactyla	Tayassuidae	Tayassu	pecari	Tayassu pecari	II
Animalia	Mammalia	Carnivora	Canidae	Cerdocyon	thous	Cerdocyon thous	II
Animalia	Mammalia	Carnivora	Canidae	Chrysocyon	brachyurus	Chrysocyon brachyurus	II
Animalia	Mammalia	Carnivora	Canidae	Lycabpex	gymnocercus	Lycabpex gymnocercus	II
Animalia	Mammalia	Carnivora	Canidae	Speothos	venaticus	Speothos venaticus	I
Animalia	Mammalia	Carnivora	Felidae	Leopardus	braccatus	Leopardus braccatus	II
Animalia	Mammalia	Carnivora	Felidae	Leopardus	geoffroyi	Leopardus geoffroyi	I
Animalia	Mammalia	Carnivora	Felidae	Leopardus	pardalis	Leopardus pardalis	I
Animalia	Mammalia	Carnivora	Felidae	Leopardus	tigrinus	Leopardus tigrinus	I
Animalia	Mammalia	Carnivora	Felidae	Leopardus	wedii	Leopardus wedii	I
Animalia	Mammalia	Carnivora	Felidae	Panthera	onca	Panthera onca	I
Animalia	Mammalia	Carnivora	Felidae	Puma	concolor	Puma concolor	II
Animalia	Mammalia	Carnivora	Felidae	Puma	yagouaroundi	Puma yagouaroundi	I/II
Animalia	Mammalia	Carnivora	Mustelidae	Lontra	bngcaudis	Lontra bngcaudis	I
Animalia	Mammalia	Carnivora	Mustelidae	Pteronura	brasiliensis	Pteronura brasiliensis	I
Animalia	Mammalia	Carnivora	Mustelidae	Era	barbara	Era barbara	III
Animalia	Mammalia	Carnivora	Mustelidae	Galictis	vittata	Galictis vittata	II
Animalia	Mammalia	Carnivora	Otaridae	Arctocephalus	australis	Arctocephalus australis	II
Animalia	Mammalia	Carnivora	Otaridae	Arctocephalus	gazele	Arctocephalus gazele	II
Animalia	Mammalia	Carnivora	Otaridae	Arctocephalus	tropicalis	Arctocephalus tropicalis	II
Animalia	Mammalia	Carnivora	Procyonidae	Moungia	bonina	Moungia bonina	II
Animalia	Mammalia	Carnivora	Procyonidae	Nasua	nasua	Nasua nasua solitaria	III
Animalia	Mammalia	Carnivora	Procyonidae	Potos	flavus	Potos flavus	III
Animalia	Mammalia	Cetacea	Balaenidae	Eubalaena	australis	Eubalaena australis	I
Animalia	Mammalia	Cetacea	Balaenopteridae	Balaenoptera	acutorostrata	Balaenoptera acutorostrata	I/II
Animalia	Mammalia	Cetacea	Balaenopteridae	Balaenoptera	bonaerensis	Balaenoptera bonaerensis	I
Animalia	Mammalia	Cetacea	Balaenopteridae	Balaenoptera	borealis	Balaenoptera borealis	I
Animalia	Mammalia	Cetacea	Balaenopteridae	Balaenoptera	edeni	Balaenoptera edeni	I
Animalia	Mammalia	Cetacea	Balaenopteridae	Balaenoptera	musculus	Balaenoptera musculus	I
Animalia	Mammalia	Cetacea	Balaenopteridae	Balaenoptera	physalus	Balaenoptera physalus	I
Animalia	Mammalia	Cetacea	Megaptera	Megaptera	novaeangliae	Megaptera novaeangliae	I
Animalia	Mammalia	Cetacea	Dephinidae	Dephinus	capensis	Dephinus capensis	II
Animalia	Mammalia	Cetacea	Dephinidae	Feresa	attenuata	Feresa attenuata	II
Animalia	Mammalia	Cetacea	Dephinidae	Gibbcephala	macrorhynchus	Gibbcephala macrorhynchus	II
Animalia	Mammalia	Cetacea	Dephinidae	Gibbcephala	melas	Gibbcephala melas	II
Animalia	Mammalia	Cetacea	Dephinidae	Grampus	griseus	Grampus griseus	II
Animalia	Mammalia	Cetacea	Dephinidae	Lagenodelphis	hosei	Lagenodelphis hosei	II
Animalia	Mammalia	Cetacea	Dephinidae	Lissodelphis	peronii	Lissodelphis peronii	II
Animalia	Mammalia	Cetacea	Dephinidae	Orca	orca	Orca orca	II
Animalia	Mammalia	Cetacea	Dephinidae	Peponocephala	electra	Peponocephala electra	II
Animalia	Mammalia	Cetacea	Dephinidae	Pseudorca	crassidens	Pseudorca crassidens	II
Animalia	Mammalia	Cetacea	Dephinidae	Sotalia	fluvialis	Sotalia fluvialis	I
Animalia	Mammalia	Cetacea	Dephinidae	Sotalia	guianensis	Sotalia guianensis	I
Animalia	Mammalia	Cetacea	Dephinidae	Stenella	attenuata	Stenella attenuata	II
Animalia	Mammalia	Cetacea	Dephinidae	Stenella	clymene	Stenella clymene	II
Animalia	Mammalia	Cetacea	Dephinidae	Stenella	coeruleoalba	Stenella coeruleoalba	II
Animalia	Mammalia	Cetacea	Dephinidae	Stenella	frontalis	Stenella frontalis	II
Animalia	Mammalia	Cetacea	Dephinidae	Stenella	bngrostris	Stenella bngrostris	II
Animalia	Mammalia	Cetacea	Dephinidae	Steno	bredanensis	Steno bredanensis	II
Animalia	Mammalia	Cetacea	Dephinidae	Tursiops	truncatus	Tursiops truncatus	II
Animalia	Mammalia	Cetacea	Inidae	Inia	geoffrensis	Inia geoffrensis	II
Animalia	Mammalia	Cetacea	Inidae	Pontoporia	bahivillei	Pontoporia bahivillei	II
Animalia	Mammalia	Cetacea	Phocoenidae	Phocoena	doptrica	Phocoena doptrica	II
Animalia	Mammalia	Cetacea	Phocoenidae	Phocoena	spinipinnis	Phocoena spinipinnis	II
Animalia	Mammalia	Cetacea	Physeteridae	Kogia	breviceps	Kogia breviceps	II
Animalia	Mammalia	Cetacea	Physeteridae	Kogia	simia	Kogia simia	II
Animalia	Mammalia	Cetacea	Physeteridae	Physeter	macrocephalus	Physeter macrocephalus	I
Animalia	Mammalia	Cetacea	Ziphiidae	Berardius	arxii	Berardius arxii	I
Animalia	Mammalia	Cetacea	Ziphiidae	Hyperoodon	planifrons	Hyperoodon planifrons	I
Animalia	Mammalia	Cetacea	Ziphiidae	Mesopbdon	densirostris	Mesopbdon densirostris	II
Animalia	Mammalia	Cetacea	Ziphiidae	Mesopbdon	grayi	Mesopbdon grayi	II
Animalia	Mammalia	Cetacea	Ziphiidae	Mesopbdon	hectori	Mesopbdon hectori	II
Animalia	Mammalia	Cetacea	Ziphiidae	Ziphius	cavrostris	Ziphius cavrostris	II
Animalia	Mammalia	Chiroptera	Phyllostomidae	Phyllostomus	lineatus	Phyllostomus lineatus	III
Animalia	Mammalia	Chiroptera	Dasyptidae	Cabassous	tatuay	Cabassous tatuay	III
Animalia	Mammalia	Chiroptera	Dasyptidae	Prionotes	maximus	Prionotes maximus	I

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 2/20)

Animalia	Mammalia	Perissodactyla	Tapiridae	Tapirus	terrestris	Tapirus terrestris	II
Animalia	Mammalia	Pisba	Bradypodidae	Bradypus	variegatus	Bradypus variegatus	II
Animalia	Mammalia	Pisba	Megabrychidae	Chobepus	hoffmanni	Chobepus hoffmanni	III
Animalia	Mammalia	Pisba	Myrmecophagidae	Myrmecophaga	tridactyla	Myrmecophaga tridactyla	II
Animalia	Mammalia	Primates	Aotidae	Aotus	azarae	Aotus azarae	II
Animalia	Mammalia	Primates	Aotidae	Aotus	nancymae	Aotus nancymae	II
Animalia	Mammalia	Primates	Aotidae	Aotus	nigriceps	Aotus nigriceps	II
Animalia	Mammalia	Primates	Aotidae	Aotus	trivirgatus	Aotus trivirgatus	II
Animalia	Mammalia	Primates	Aotidae	Aotus	vociferans	Aotus vociferans	II
Animalia	Mammalia	Primates	Ateidae	Auatta	bezebeli	Auatta bezebeli	II
Animalia	Mammalia	Primates	Ateidae	Auatta	caraya	Auatta caraya	II
Animalia	Mammalia	Primates	Ateidae	Auatta	guariba	Auatta guariba	II
Animalia	Mammalia	Primates	Ateidae	Auatta	maconnelii	Auatta maconnelii	II
Animalia	Mammalia	Primates	Ateidae	Auatta	nigerrima	Auatta nigerrima	II
Animalia	Mammalia	Primates	Ateidae	Auatta	sara	Auatta sara	II
Animalia	Mammalia	Primates	Ateidae	Auatta	senbuis	Auatta senbuis	II
Animalia	Mammalia	Primates	Ateidae	Ateles	bezebeli	Ateles bezebeli	II
Animalia	Mammalia	Primates	Ateidae	Ateles	chamek	Ateles chamek	II
Animalia	Mammalia	Primates	Ateidae	Ateles	margnatus	Ateles margnatus	II
Animalia	Mammalia	Primates	Ateidae	Ateles	paniscus	Ateles paniscus	II
Animalia	Mammalia	Primates	Ateidae	Brachyteles	arachnoides	Brachyteles arachnoides	I
Animalia	Mammalia	Primates	Ateidae	Brachyteles	hypoxanthus	Brachyteles hypoxanthus	I
Animalia	Mammalia	Primates	Ateidae	Lagothrix	cana	Lagothrix cana	II
Animalia	Mammalia	Primates	Ateidae	Lagothrix	lagotricha	Lagothrix lagotricha	II
Animalia	Mammalia	Primates	Ateidae	Lagothrix	poepigii	Lagothrix poepigii	II
Animalia	Mammalia	Primates	Ateidae	Oreonax	flavicauda	Oreonax flavicauda	I
Animalia	Mammalia	Primates	Cebidae	Callimaco	goeldii	Callimaco goeldii	I
Animalia	Mammalia	Primates	Cebidae	Callithrix	acarensis	Callithrix acarensis	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	argentata	Callithrix argentata	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	aurita	Callithrix aurita	I
Animalia	Mammalia	Primates	Cebidae	Callithrix	chryso buca	Callithrix chryso buca	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	emiliae	Callithrix emiliae	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	flaviceps	Callithrix flaviceps	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	geoffroyi	Callithrix geoffroyi	I
Animalia	Mammalia	Primates	Cebidae	Callithrix	humeralifera	Callithrix humeralifera	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	humilis	Callithrix humilis	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	intermedia	Callithrix intermedia	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	jacchus	Callithrix jacchus	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	kuhlii	Callithrix kuhlii	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	leucippe	Callithrix leucippe	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	manicorensis	Callithrix manicorensis	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	marcai	Callithrix marcai	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	mauesi	Callithrix mauesi	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	melanura	Callithrix melanura	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	nigriceps	Callithrix nigriceps	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	penicillata	Callithrix penicillata	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	pygmaea	Callithrix pygmaea	II
Animalia	Mammalia	Primates	Cebidae	Callithrix	saterei	Callithrix saterei	II
Animalia	Mammalia	Primates	Cebidae	Cebus	abifrons	Cebus abifrons	II
Animalia	Mammalia	Primates	Cebidae	Cebus	ape la	Cebus ape la	II
Animalia	Mammalia	Primates	Cebidae	Cebus	flavus	Cebus flavus	II
Animalia	Mammalia	Primates	Cebidae	Cebus	kaapori	Cebus kaapori	II
Animalia	Mammalia	Primates	Cebidae	Cebus	lbidiosus	Cebus lbidiosus	II
Animalia	Mammalia	Primates	Cebidae	Cebus	nigrilus	Cebus nigrilus	II
Animalia	Mammalia	Primates	Cebidae	Cebus	olivaceus	Cebus olivaceus	II
Animalia	Mammalia	Primates	Cebidae	Cebus	xanthosternus	Cebus xanthosternus	II
Animalia	Mammalia	Primates	Cebidae	Leontopithecus	caissara	Leontopithecus caissara	I
Animalia	Mammalia	Primates	Cebidae	Leontopithecus	chrysomelas	Leontopithecus chrysomelas	I
Animalia	Mammalia	Primates	Cebidae	Leontopithecus	chrysopygus	Leontopithecus chrysopygus	I
Animalia	Mammalia	Primates	Cebidae	Leontopithecus	rosalia	Leontopithecus rosalia	I
Animalia	Mammalia	Primates	Cebidae	Mico	rondoni	Mico rondoni	II
Animalia	Mammalia	Primates	Cebidae	Saguinus	bicolor	Saguinus bicolor	I
Animalia	Mammalia	Primates	Cebidae	Saguinus	fuscicollis	Saguinus fuscicollis	II
Animalia	Mammalia	Primates	Cebidae	Saguinus	imperator	Saguinus imperator	II
Animalia	Mammalia	Primates	Cebidae	Saguinus	inustus	Saguinus inustus	II
Animalia	Mammalia	Primates	Cebidae	Saguinus	labiatus	Saguinus labiatus	II
Animalia	Mammalia	Primates	Cebidae	Saguinus	martinsi	Saguinus martinsi	I
Animalia	Mammalia	Primates	Cebidae	Saguinus	melanoleucus	Saguinus melanoleucus	II
Animalia	Mammalia	Primates	Cebidae	Saguinus	midas	Saguinus midas	II
Animalia	Mammalia	Primates	Cebidae	Saguinus	mystax	Saguinus mystax	II
Animalia	Mammalia	Primates	Cebidae	Saguinus	niger	Saguinus niger	II
Animalia	Mammalia	Primates	Cebidae	Saguinus	nigrililis	Saguinus nigrililis	II
Animalia	Mammalia	Primates	Cebidae	Saguinus	piabatus	Saguinus piabatus	II
Animalia	Mammalia	Primates	Cebidae	Samiri	boliviensis	Samiri boliviensis	II
Animalia	Mammalia	Primates	Cebidae	Samiri	scureus	Samiri scureus	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 3/20)

Animala	Mammalia	Primates	Cebidae	Saimiri	ustus	Saimiriustus	II
Animala	Mammalia	Primates	Cebidae	Saimiri	vanzolinii	Saimirivanzolinii	II
Animala	Mammalia	Primates	Pitheciidae	Cacaço	ayresi	Cacaçoayresi	I
Animala	Mammalia	Primates	Pitheciidae	Cacaço	calvus	Cacaço calvus	I
Animala	Mammalia	Primates	Pitheciidae	Cacaço	hosomi	Cacaço hosomi	I
Animala	Mammalia	Primates	Pitheciidae	Cacaço	melanocephalus	Cacaço melanocephalus	I
Animala	Mammalia	Primates	Pitheciidae	Callicebus	baptista	Callicebusbaptista	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	barbarabrownae	Callicebusbarbarabrownae	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	bernhardi	Callicebusbernhardi	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	brunneus	Callicebusbrunneus	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	calgatus	Callicebuscalgatus	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	cherascens	Callicebuscherascens	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	combrai	Callicebuscombrai	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	cupreus	Callicebuscupreus	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	dubius	Callicebusdubius	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	hoffmannsi	Callicebushoffmannsi	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	lucifer	Callicebuslucifer	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	lugens	Callicebuslugens	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	melanochir	Callicebusmelanochir	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	moebii	Callicebusmoebii	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	nigrifrons	Callicebusnigrifrons	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	paleescens	Callicebuspaleescens	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	personatus	Callicebuspersonatus	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	purhus	Callicebuspurhus	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	regulus	Callicebusregulus	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	stephennashi	Callicebusstephennashi	II
Animala	Mammalia	Primates	Pitheciidae	Callicebus	torquatus	Callicebustorquatus	II
Animala	Mammalia	Primates	Pitheciidae	Chiroptes	abhasus	Chiroptesabhasus	I
Animala	Mammalia	Primates	Pitheciidae	Chiroptes	chiroptes	Chiropteschiroptes	II
Animala	Mammalia	Primates	Pitheciidae	Chiroptes	israelita	Chiroptesisraelita	II
Animala	Mammalia	Primates	Pitheciidae	Chiroptes	satanas	Chiroptesatanas	II
Animala	Mammalia	Primates	Pitheciidae	Chiroptes	utahicae	Chiroptesutahicae	II
Animala	Mammalia	Primates	Pitheciidae	Pithecia	abicans	Pitheciaabicans	II
Animala	Mammalia	Primates	Pitheciidae	Pithecia	irrorata	Pitheciairrorata	II
Animala	Mammalia	Primates	Pitheciidae	Pithecia	monachus	Pitheciamonachus	II
Animala	Mammalia	Primates	Pitheciidae	Pithecia	pithecia	Pitheciapithecia	II
Animala	Mammalia	Rodentia	Cuniculidae	Cuniculus	paca	Cuniculuspaca	III
Animala	Mammalia	Rodentia	Dasyproctidae	Dasyprocta	punctata	Dasyproctapunctata	III
Animala	Mammalia	Rodentia	Erethizontidae	Sphingurus	sphosus	Sphingurus sphosus	III
Animala	Mammalia	Sirenia	Trichechidae	Trichechus	hungus	Trichechushungus	I
Animala	Mammalia	Sirenia	Trichechidae	Trichechus	manatus	Trichechusmanatus	I
Animala	Aves	Anseriformes	Anatidae	Carina	moschata	Carinamoschata	III
Animala	Aves	Anseriformes	Anatidae	Coscoroba	coscoroba	Coscorobacoscoroba	II
Animala	Aves	Anseriformes	Anatidae	Cygnus	melancoryphus	Cygnusmelancoryphus	II
Animala	Aves	Anseriformes	Anatidae	Dendrocygna	autumnalis	Dendrocygnaautumnalis	III
Animala	Aves	Anseriformes	Anatidae	Dendrocygna	bicolor	Dendrocygnabicolor	III
Animala	Aves	Anseriformes	Anatidae	Sarkidornis	melanotos	Sarkidornismelanotos	II
Animala	Aves	Podiformes	Trochilidae	Azilia	brevirostris	Aziliabrevirostris	II
Animala	Aves	Podiformes	Trochilidae	Azilia	chionogaster	Aziliachionogaster	II
Animala	Aves	Podiformes	Trochilidae	Azilia	cupreicauda	Aziliacupreicauda	II
Animala	Aves	Podiformes	Trochilidae	Azilia	finbrata	Aziliafinbrata	II
Animala	Aves	Podiformes	Trochilidae	Azilia	lactea	Azilialactea	II
Animala	Aves	Podiformes	Trochilidae	Azilia	leucogaster	Azilialeucogaster	II
Animala	Aves	Podiformes	Trochilidae	Azilia	rondonae	Aziliarondonae	II
Animala	Aves	Podiformes	Trochilidae	Azilia	versicolor	Aziliaversicolor	II
Animala	Aves	Podiformes	Trochilidae	Anopeta	gounelei	Anopetagounelei	II
Animala	Aves	Podiformes	Trochilidae	Anthracothonax	nigricollis	Anthracothonaxnigricollis	II
Animala	Aves	Podiformes	Trochilidae	Anthracothonax	recurvirostris	Anthracothonaxrecurvirostris	II
Animala	Aves	Podiformes	Trochilidae	Anthracothonax	viridula	Anthracothonaxviridula	II
Animala	Aves	Podiformes	Trochilidae	Aphantochroa	cirochris	Aphantochroacirochris	II
Animala	Aves	Podiformes	Trochilidae	Augastes	limacheila	Augasteslimacheila	II
Animala	Aves	Podiformes	Trochilidae	Augastes	scutatus	Augastes scutatus	II
Animala	Aves	Podiformes	Trochilidae	Callipepla	amethystina	Callipeplamethystina	II
Animala	Aves	Podiformes	Trochilidae	Campephilus	duae	Campephilusduae	II
Animala	Aves	Podiformes	Trochilidae	Campephilus	hyperythrus	Campephilushyperythrus	II
Animala	Aves	Podiformes	Trochilidae	Campephilus	largipennis	Campephiluslargipennis	II
Animala	Aves	Podiformes	Trochilidae	Chondestes	lucidus	Chondesteslucidus	II
Animala	Aves	Podiformes	Trochilidae	Chondestes	melisugus	Chondestesmelisugus	II
Animala	Aves	Podiformes	Trochilidae	Chondestes	notatus	Chondestesnotatus	II
Animala	Aves	Podiformes	Trochilidae	Chrysomitris	mosquitus	Chrysomitrismosquitus	II
Animala	Aves	Podiformes	Trochilidae	Chrysomitris	oenone	Chrysomitrisoenone	II
Animala	Aves	Podiformes	Trochilidae	Cyrtocopus	rubricauda	Cyrtocopusrubricauda	II
Animala	Aves	Podiformes	Trochilidae	Colaptes	coruscans	Colaptescoruscans	II
Animala	Aves	Podiformes	Trochilidae	Colaptes	debnai	Colaptesdebnai	II
Animala	Aves	Podiformes	Trochilidae	Colaptes	serrirostris	Colapteserrirostris	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 4/20)

Animalia	Aves	Apodiformes	Trochilidae	Dicosura	längsdorffi	Dicosura längsdorffi	II
Animalia	Aves	Apodiformes	Trochilidae	Dicosura	bngicaudus	Dicosura bngicaudus	II
Animalia	Aves	Apodiformes	Trochilidae	Doryfera	phannae	Doryfera phannae	II
Animalia	Aves	Apodiformes	Trochilidae	Eulampis	jguaris	Eulampis jguaris	II
Animalia	Aves	Apodiformes	Trochilidae	Eupetomena	macroua	Eupetomena macroua	II
Animalia	Aves	Apodiformes	Trochilidae	Fbrisuga	fusca	Fbrisuga fusca	II
Animalia	Aves	Apodiformes	Trochilidae	Fbrisuga	melivora	Fbrisuga melivora	II
Animalia	Aves	Apodiformes	Trochilidae	Gaucis	dohmii	Gaucis dohmii	I
Animalia	Aves	Apodiformes	Trochilidae	Gaucis	hrsutus	Gaucis hrsutus	II
Animalia	Aves	Apodiformes	Trochilidae	Helactin	bibphus	Helactin bibphus	II
Animalia	Aves	Apodiformes	Trochilidae	Heliodoxa	aurescens	Heliodoxa aurescens	II
Animalia	Aves	Apodiformes	Trochilidae	Heliodoxa	guaris	Heliodoxa guaris	II
Animalia	Aves	Apodiformes	Trochilidae	Heliodoxa	schreibersii	Heliodoxa schreibersii	II
Animalia	Aves	Apodiformes	Trochilidae	Heliodoxa	xanthogonys	Heliodoxa xanthogonys	II
Animalia	Aves	Apodiformes	Trochilidae	Helomaster	furfifer	Helomaster furfifer	II
Animalia	Aves	Apodiformes	Trochilidae	Helomaster	bngirostris	Helomaster bngirostris	II
Animalia	Aves	Apodiformes	Trochilidae	Helomaster	squamosus	Helomaster squamosus	II
Animalia	Aves	Apodiformes	Trochilidae	Heliothryx	auritus	Heliothryx auritus	II
Animalia	Aves	Apodiformes	Trochilidae	Hybcharis	chrysur	Hybcharis chrysur	II
Animalia	Aves	Apodiformes	Trochilidae	Hybcharis	cyanus	Hybcharis cyanus	II
Animalia	Aves	Apodiformes	Trochilidae	Hybcharis	sapphirina	Hybcharis sapphirina	II
Animalia	Aves	Apodiformes	Trochilidae	Kais	guimeti	Kais guimeti	II
Animalia	Aves	Apodiformes	Trochilidae	Leucopus	chbrocerus	Leucopus chbrocerus	II
Animalia	Aves	Apodiformes	Trochilidae	Leucochelis	abcolis	Leucochelis abcolis	II
Animalia	Aves	Apodiformes	Trochilidae	Lophomys	chalybeus	Lophomys chalybeus	II
Animalia	Aves	Apodiformes	Trochilidae	Lophomys	goullii	Lophomys goullii	II
Animalia	Aves	Apodiformes	Trochilidae	Lophomys	marginatus	Lophomys marginatus	II
Animalia	Aves	Apodiformes	Trochilidae	Lophomys	ornatus	Lophomys ornatus	II
Animalia	Aves	Apodiformes	Trochilidae	Lophomys	pavonius	Lophomys pavonius	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	augusti	Phaethon augusti	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	bourcieri	Phaethon bourcieri	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	eurynome	Phaethon eurynome	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	griseogularis	Phaethon griseogularis	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	hispidus	Phaethon hispidus	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	idalae	Phaethon idalae	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	malars	Phaethon malars	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	nattereri	Phaethon nattereri	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	philippii	Phaethon philippii	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	pretrei	Phaethon pretrei	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	ruber	Phaethon ruber	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	rupurumii	Phaethon rupurumii	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	squallidus	Phaethon squallidus	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	subochraceus	Phaethon subochraceus	II
Animalia	Aves	Apodiformes	Trochilidae	Phaethon	superciliosus	Phaethon superciliosus	II
Animalia	Aves	Apodiformes	Trochilidae	Polytmus	gualanubi	Polytmus gualanubi	II
Animalia	Aves	Apodiformes	Trochilidae	Polytmus	milieri	Polytmus milieri	II
Animalia	Aves	Apodiformes	Trochilidae	Polytmus	theresae	Polytmus theresae	II
Animalia	Aves	Apodiformes	Trochilidae	Ramphodon	naevius	Ramphodon naevius	II
Animalia	Aves	Apodiformes	Trochilidae	Stephanoxis	bandi	Stephanoxis bandi	II
Animalia	Aves	Apodiformes	Trochilidae	Taphrosplis	hypostictus	Taphrosplis hypostictus	II
Animalia	Aves	Apodiformes	Trochilidae	Thalirana	furcata	Thalirana furcata	II
Animalia	Aves	Apodiformes	Trochilidae	Thalirana	glaucoptis	Thalirana glaucoptis	II
Animalia	Aves	Apodiformes	Trochilidae	Thalirana	watertonii	Thalirana watertonii	II
Animalia	Aves	Apodiformes	Trochilidae	Threptes	niger	Threptes niger	II
Animalia	Aves	Apodiformes	Trochilidae	Topaza	peila	Topaza peila	II
Animalia	Aves	Apodiformes	Trochilidae	Topaza	pyra	Topaza pyra	II
Animalia	Aves	Charadriiformes	Burhinidae	Burhinus	bistratus	Burhinus bistratus	III
Animalia	Aves	Charadriiformes	Scolopacidae	Numenius	borealis	Numenius borealis	I
Animalia	Aves	Coliiformes	Coliidae	Jabiru	myctera	Jabiru myctera	I
Animalia	Aves	Coliiformes	Phoenicopteridae	Phoenicoparrus	andrus	Phoenicoparrus andrus	II
Animalia	Aves	Coliiformes	Phoenicopteridae	Phoenicoparrus	amesi	Phoenicoparrus amesi	II
Animalia	Aves	Coliiformes	Phoenicopteridae	Phoenicoparrus	chilensis	Phoenicoparrus chilensis	II
Animalia	Aves	Coliiformes	Phoenicopteridae	Phoenicoparrus	ruber	Phoenicoparrus ruber	II
Animalia	Aves	Coliiformes	Threskornithidae	Eudocimus	ruber	Eudocimus ruber	II
Animalia	Aves	Coliiformes	Threskornithidae	Pataiba	bucoroda	Pataiba bucoroda	II
Animalia	Aves	Falconiformes	Accipitridae	Accipiter	bubo	Accipiter bubo	II
Animalia	Aves	Falconiformes	Accipitridae	Accipiter	pologaster	Accipiter pologaster	II
Animalia	Aves	Falconiformes	Accipitridae	Accipiter	stratus	Accipiter stratus	II
Animalia	Aves	Falconiformes	Accipitridae	Accipiter	superciliosus	Accipiter superciliosus	II
Animalia	Aves	Falconiformes	Accipitridae	Asturina	nitida	Asturina nitida	II
Animalia	Aves	Falconiformes	Accipitridae	Busarellus	nigrifrons	Busarellus nigrifrons	II
Animalia	Aves	Falconiformes	Accipitridae	Buteo	abicaudatus	Buteo abicaudatus	II
Animalia	Aves	Falconiformes	Accipitridae	Buteo	abonotatus	Buteo abonotatus	II
Animalia	Aves	Falconiformes	Accipitridae	Buteo	brachyurus	Buteo brachyurus	II
Animalia	Aves	Falconiformes	Accipitridae	Buteo	leucorrhois	Buteo leucorrhois	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 5/20)

Animalia	Aves	Falconiformes	Accipitridae	Buteo	magnirostris	Buteo magnirostris	II
Animalia	Aves	Falconiformes	Accipitridae	Buteo	platypterus	Buteo platypterus	II
Animalia	Aves	Falconiformes	Accipitridae	Buteo	polosoma	Buteo polosoma	II
Animalia	Aves	Falconiformes	Accipitridae	Buteo	swainsoni	Buteo swainsoni	II
Animalia	Aves	Falconiformes	Accipitridae	Buteogallus	aequinoctialis	Buteogallus aequinoctialis	II
Animalia	Aves	Falconiformes	Accipitridae	Buteogallus	meridionalis	Buteogallus meridionalis	II
Animalia	Aves	Falconiformes	Accipitridae	Buteogallus	urubitinga	Buteogallus urubitinga	II
Animalia	Aves	Falconiformes	Accipitridae	Circus	buffoni	Circus buffoni	II
Animalia	Aves	Falconiformes	Accipitridae	Circus	chereus	Circus chereus	II
Animalia	Aves	Falconiformes	Accipitridae	Elaenoides	forficatus	Elaenoides forficatus	II
Animalia	Aves	Falconiformes	Accipitridae	Elaenus	bucurus	Elaenus bucurus	II
Animalia	Aves	Falconiformes	Accipitridae	Gamsonyx	swainsonii	Gamsonyx swainsonii	II
Animalia	Aves	Falconiformes	Accipitridae	Geranoaetus	melanoleucus	Geranoaetus melanoleucus	II
Animalia	Aves	Falconiformes	Accipitridae	Geranospiza	caerulescens	Geranospiza caerulescens	II
Animalia	Aves	Falconiformes	Accipitridae	Harpagus	bidentatus	Harpagus bidentatus	II
Animalia	Aves	Falconiformes	Accipitridae	Harpagus	dbidon	Harpagus dbidon	II
Animalia	Aves	Falconiformes	Accipitridae	Harpia	harpia	Harpia harpia	I
Animalia	Aves	Falconiformes	Accipitridae	Harpophalaetus	coronatus	Harpophalaetus coronatus	II
Animalia	Aves	Falconiformes	Accipitridae	Harpophalaetus	solitarius	Harpophalaetus solitarius	II
Animalia	Aves	Falconiformes	Accipitridae	Ictinia	mississippiensis	Ictinia mississippiensis	II
Animalia	Aves	Falconiformes	Accipitridae	Ictinia	plumbea	Ictinia plumbea	II
Animalia	Aves	Falconiformes	Accipitridae	Leptodon	cayanensis	Leptodon cayanensis	II
Animalia	Aves	Falconiformes	Accipitridae	Leucopternis	abcolis	Leucopternis abcolis	II
Animalia	Aves	Falconiformes	Accipitridae	Leucopternis	kuhli	Leucopternis kuhli	II
Animalia	Aves	Falconiformes	Accipitridae	Leucopternis	lacernatus	Leucopternis lacernatus	II
Animalia	Aves	Falconiformes	Accipitridae	Leucopternis	melanops	Leucopternis melanops	II
Animalia	Aves	Falconiformes	Accipitridae	Leucopternis	poliopterus	Leucopternis poliopterus	II
Animalia	Aves	Falconiformes	Accipitridae	Leucopternis	schistaceus	Leucopternis schistaceus	II
Animalia	Aves	Falconiformes	Accipitridae	Morphnus	guianensis	Morphnus guianensis	II
Animalia	Aves	Falconiformes	Accipitridae	Parabuteo	unicinctus	Parabuteo unicinctus	II
Animalia	Aves	Falconiformes	Accipitridae	Rosthamus	hamatus	Rosthamus hamatus	II
Animalia	Aves	Falconiformes	Accipitridae	Rosthamus	sociabilis	Rosthamus sociabilis	II
Animalia	Aves	Falconiformes	Accipitridae	Spizaetus	ornatus	Spizaetus ornatus	II
Animalia	Aves	Falconiformes	Accipitridae	Spizaetus	tyrannus	Spizaetus tyrannus	II
Animalia	Aves	Falconiformes	Accipitridae	Spizastur	melanoleucus	Spizastur melanoleucus	II
Animalia	Aves	Falconiformes	Cathartidae	Sarcorhamphus	papa	Sarcorhamphus papa	III
Animalia	Aves	Falconiformes	Cathartidae	Vultur	gryphus	Vultur gryphus	I
Animalia	Aves	Falconiformes	Falconidae	Caracara	cheriway	Caracara cheriway	II
Animalia	Aves	Falconiformes	Falconidae	Caracara	plancus	Caracara plancus	II
Animalia	Aves	Falconiformes	Falconidae	Daptrius	ater	Daptrius ater	II
Animalia	Aves	Falconiformes	Falconidae	Falco	deirobucus	Falco deirobucus	II
Animalia	Aves	Falconiformes	Falconidae	Falco	femorals	Falco femoralis	II
Animalia	Aves	Falconiformes	Falconidae	Falco	peregrinus	Falco peregrinus	I
Animalia	Aves	Falconiformes	Falconidae	Falco	rufugularis	Falco rufugularis	II
Animalia	Aves	Falconiformes	Falconidae	Falco	sparverius	Falco sparverius	II
Animalia	Aves	Falconiformes	Falconidae	Falco	tinunculus	Falco tinunculus	II
Animalia	Aves	Falconiformes	Falconidae	Herpotheres	cachinnans	Herpotheres cachinnans	II
Animalia	Aves	Falconiformes	Falconidae	Ibycter	americanus	Ibycter americanus	II
Animalia	Aves	Falconiformes	Falconidae	Micrastur	buckleyi	Micrastur buckleyi	II
Animalia	Aves	Falconiformes	Falconidae	Micrastur	gilvicolis	Micrastur gilvicolis	II
Animalia	Aves	Falconiformes	Falconidae	Micrastur	montoni	Micrastur montoni	II
Animalia	Aves	Falconiformes	Falconidae	Micrastur	randolphi	Micrastur randolphi	II
Animalia	Aves	Falconiformes	Falconidae	Micrastur	ruficollis	Micrastur ruficollis	II
Animalia	Aves	Falconiformes	Falconidae	Micrastur	semitorquatus	Micrastur semitorquatus	II
Animalia	Aves	Falconiformes	Falconidae	Mivago	chinachina	Mivago chinachina	II
Animalia	Aves	Falconiformes	Falconidae	Mivago	chingo	Mivago chingo	II
Animalia	Aves	Falconiformes	Pandionidae	Pandion	haliaetus	Pandion haliaetus	II
Animalia	Aves	Galliformes	Cracidae	Crax	blumenbachii	Crax blumenbachii	I
Animalia	Aves	Galliformes	Cracidae	Crax	gambusia	Crax gambusia	III
Animalia	Aves	Galliformes	Cracidae	Mitu	mitu	Mitu mitu	I
Animalia	Aves	Galliformes	Cracidae	Pipile	cutinga	Pipile cutinga	I
Animalia	Aves	Passeriformes	Cotingidae	Cephalopterus	ornatus	Cephalopterus ornatus	III
Animalia	Aves	Passeriformes	Cotingidae	Cotinga	maculata	Cotinga maculata	I
Animalia	Aves	Passeriformes	Cotingidae	Rupicola	rupicola	Rupicola rupicola	II
Animalia	Aves	Passeriformes	Cotingidae	Xiphobona	atropurpurea	Xiphobona atropurpurea	I
Animalia	Aves	Passeriformes	Emberizidae	Gubematrix	cristata	Gubematrix cristata	II
Animalia	Aves	Passeriformes	Emberizidae	Paroaria	capitata	Paroaria capitata	II
Animalia	Aves	Passeriformes	Emberizidae	Paroaria	coronata	Paroaria coronata	II
Animalia	Aves	Passeriformes	Emberizidae	Tangara	fastuosa	Tangara fastuosa	II
Animalia	Aves	Passeriformes	Fringillidae	Carduelis	yarrowi	Carduelis yarrowi	II
Animalia	Aves	Passeriformes	Icteridae	Xanthopsar	flavus	Xanthopsar flavus	I
Animalia	Aves	Piciformes	Ramphastidae	Bailonus	bailoni	Bailonus bailoni	III
Animalia	Aves	Piciformes	Ramphastidae	Pteroglossus	aracari	Pteroglossus aracari	II
Animalia	Aves	Piciformes	Ramphastidae	Pteroglossus	castanotis	Pteroglossus castanotis	III
Animalia	Aves	Piciformes	Ramphastidae	Pteroglossus	viridis	Pteroglossus viridis	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 6/20)

Animalia	Aves	Piciformes	Ramphastidae	Ramphastos	dico brus	Ramphastos dico brus	III
Animalia	Aves	Piciformes	Ramphastidae	Ramphastos	toco	Ramphastos toco	II
Animalia	Aves	Piciformes	Ramphastidae	Ramphastos	tucanus	Ramphastos tucanus	II
Animalia	Aves	Piciformes	Ramphastidae	Ramphastos	vite llinus	Ramphastos vite llinus	II
Animalia	Aves	Piciformes	Ramphastidae	Sebenera	m acurostris	Sebenera m acurostris	III
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	aestiva	Amazona aestiva	II
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	amazonica	Amazona amazonica	II
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	autumnalis	Amazona autumnalis	II
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	brasiliensis	Amazona brasiliensis	I/II
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	brasiliensis	Amazona brasiliensis	I/II
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	dufrenoyana	Amazona dufrenoyana	II
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	farinosa	Amazona farinosa	II
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	festiva	Amazona festiva	II
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	kawalli	Amazona kawalli	II
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	ochrocephala	Amazona ochrocephala	II
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	pretrei	Amazona pretrei	I
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	rhodocorytha	Amazona rhodocorytha	I
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	vinacea	Amazona vinacea	I
Animalia	Aves	Pittaciformes	Pittacidae	Amazona	xanthops	Amazona xanthops	II
Animalia	Aves	Pittaciformes	Pittacidae	Anodorhynchus	glaucus	Anodorhynchus glaucus	I
Animalia	Aves	Pittaciformes	Pittacidae	Anodorhynchus	hyacinthinus	Anodorhynchus hyacinthinus	I
Animalia	Aves	Pittaciformes	Pittacidae	Anodorhynchus	leari	Anodorhynchus leari	I
Animalia	Aves	Pittaciformes	Pittacidae	Ara	ararauna	Ara ararauna	II
Animalia	Aves	Pittaciformes	Pittacidae	Ara	chrysocephala	Ara chrysocephala	II
Animalia	Aves	Pittaciformes	Pittacidae	Ara	macao	Ara macao	I
Animalia	Aves	Pittaciformes	Pittacidae	Ara	severus	Ara severus	II
Animalia	Aves	Pittaciformes	Pittacidae	Aratinga	acuticaudata	Aratinga acuticaudata	II
Animalia	Aves	Pittaciformes	Pittacidae	Aratinga	aurea	Aratinga aurea	II
Animalia	Aves	Pittaciformes	Pittacidae	Aratinga	auricapillus	Aratinga auricapillus	II
Animalia	Aves	Pittaciformes	Pittacidae	Aratinga	cactorum	Aratinga cactorum	II
Animalia	Aves	Pittaciformes	Pittacidae	Aratinga	andaya	Aratinga andaya	II
Animalia	Aves	Pittaciformes	Pittacidae	Aratinga	bucophthalma	Aratinga bucophthalma	II
Animalia	Aves	Pittaciformes	Pittacidae	Aratinga	maculata	Aratinga maculata	II
Animalia	Aves	Pittaciformes	Pittacidae	Aratinga	pertinax	Aratinga pertinax	II
Animalia	Aves	Pittaciformes	Pittacidae	Aratinga	sostrata	Aratinga sostrata	II
Animalia	Aves	Pittaciformes	Pittacidae	Aratinga	weddelii	Aratinga weddelii	II
Animalia	Aves	Pittaciformes	Pittacidae	Brodiaea	chrysirostris	Brodiaea chrysirostris	II
Animalia	Aves	Pittaciformes	Pittacidae	Brodiaea	chrysoptera	Brodiaea chrysoptera	II
Animalia	Aves	Pittaciformes	Pittacidae	Brodiaea	cyanoptera	Brodiaea cyanoptera	II
Animalia	Aves	Pittaciformes	Pittacidae	Brodiaea	sanctithomae	Brodiaea sanctithomae	II
Animalia	Aves	Pittaciformes	Pittacidae	Brodiaea	trica	Brodiaea trica	II
Animalia	Aves	Pittaciformes	Pittacidae	Brodiaea	versicoloris	Brodiaea versicoloris	II
Animalia	Aves	Pittaciformes	Pittacidae	Cyanopsitta	spixii	Cyanopsitta spixii	I
Animalia	Aves	Pittaciformes	Pittacidae	Derophterus	accipitrinus	Derophterus accipitrinus	II
Animalia	Aves	Pittaciformes	Pittacidae	Dipsittacus	nobilis	Dipsittacus nobilis	II
Animalia	Aves	Pittaciformes	Pittacidae	Forpus	modestus	Forpus modestus	II
Animalia	Aves	Pittaciformes	Pittacidae	Forpus	passerinus	Forpus passerinus	II
Animalia	Aves	Pittaciformes	Pittacidae	Forpus	xanthopterygius	Forpus xanthopterygius	II
Animalia	Aves	Pittaciformes	Pittacidae	Graydidascalus	brachyurus	Graydidascalus brachyurus	II
Animalia	Aves	Pittaciformes	Pittacidae	Guarouba	guarouba	Guarouba guarouba	I
Animalia	Aves	Pittaciformes	Pittacidae	Myiopsitta	monachus	Myiopsitta monachus	II
Animalia	Aves	Pittaciformes	Pittacidae	Nandayus	nenday	Nandayus nenday	II
Animalia	Aves	Pittaciformes	Pittacidae	Nannopsittaca	dachilae	Nannopsittaca dachilae	II
Animalia	Aves	Pittaciformes	Pittacidae	Nannopsittaca	panychbra	Nannopsittaca panychbra	II
Animalia	Aves	Pittaciformes	Pittacidae	Oreopsittacus	manillata	Oreopsittacus manillata	II
Animalia	Aves	Pittaciformes	Pittacidae	Pipilo	eucogaster	Pipilo eucogaster	II
Animalia	Aves	Pittaciformes	Pittacidae	Pipilo	meanocephalus	Pipilo meanocephalus	II
Animalia	Aves	Pittaciformes	Pittacidae	Pipilo	auranticeps	Pipilo auranticeps	II
Animalia	Aves	Pittaciformes	Pittacidae	Pipilo	barrabandi	Pipilo barrabandi	II
Animalia	Aves	Pittaciformes	Pittacidae	Pipilo	caica	Pipilo caica	II
Animalia	Aves	Pittaciformes	Pittacidae	Pipilo	plata	Pipilo plata	I
Animalia	Aves	Pittaciformes	Pittacidae	Pipilo	vilina	Pipilo vilina	II
Animalia	Aves	Pittaciformes	Pittacidae	Pipilo	fuscus	Pipilo fuscus	II
Animalia	Aves	Pittaciformes	Pittacidae	Pipilo	maxillani	Pipilo maxillani	II
Animalia	Aves	Pittaciformes	Pittacidae	Pipilo	menstruus	Pipilo menstruus	II
Animalia	Aves	Pittaciformes	Pittacidae	Prioniturus	auricollis	Prioniturus auricollis	II
Animalia	Aves	Pittaciformes	Pittacidae	Prioniturus	coubini	Prioniturus coubini	I
Animalia	Aves	Pittaciformes	Pittacidae	Prioniturus	maracana	Prioniturus maracana	I
Animalia	Aves	Pittaciformes	Pittacidae	Pyrrhura	cruentata	Pyrrhura cruentata	I
Animalia	Aves	Pittaciformes	Pittacidae	Pyrrhura	devillei	Pyrrhura devillei	I
Animalia	Aves	Pittaciformes	Pittacidae	Pyrrhura	egregia	Pyrrhura egregia	II
Animalia	Aves	Pittaciformes	Pittacidae	Pyrrhura	frontalis	Pyrrhura frontalis	II
Animalia	Aves	Pittaciformes	Pittacidae	Pyrrhura	grisepectus	Pyrrhura grisepectus	II
Animalia	Aves	Pittaciformes	Pittacidae	Pyrrhura	lepta	Pyrrhura lepta	II
Animalia	Aves	Pittaciformes	Pittacidae	Pyrrhura	leucotis	Pyrrhura leucotis	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 7/20)

Animalia	Aves	Psittaciformes	Psittacidae	Pyrrhura	melanura	Pyrrhura melanura	II
Animalia	Aves	Psittaciformes	Psittacidae	Pyrrhura	molinae	Pyrrhura molinae	II
Animalia	Aves	Psittaciformes	Psittacidae	Pyrrhura	peralta	Pyrrhura peralta	II
Animalia	Aves	Psittaciformes	Psittacidae	Pyrrhura	piriferi	Pyrrhura piriferi	II
Animalia	Aves	Psittaciformes	Psittacidae	Pyrrhura	picta	Pyrrhura picta	II
Animalia	Aves	Psittaciformes	Psittacidae	Pyrrhura	rupicola	Pyrrhura rupicola	II
Animalia	Aves	Psittaciformes	Psittacidae	Touit	huetii	Touit huetii	II
Animalia	Aves	Psittaciformes	Psittacidae	Touit	melanotus	Touit melanotus	II
Animalia	Aves	Psittaciformes	Psittacidae	Touit	purpuratus	Touit purpuratus	II
Animalia	Aves	Psittaciformes	Psittacidae	Touit	surdus	Touit surdus	II
Animalia	Aves	Psittaciformes	Psittacidae	Trichara	malchitacea	Trichara malchitacea	II
Animalia	Aves	Rheiformes	Rheidae	Rhea	americana	Rhea americana	II
Animalia	Aves	Strigiformes	Strigidae	Aegolius	harrisi	Aegolius harrisi	II
Animalia	Aves	Strigiformes	Strigidae	Asio	flemmense	Asio flemmense	II
Animalia	Aves	Strigiformes	Strigidae	Asio	stygius	Asio stygius	II
Animalia	Aves	Strigiformes	Strigidae	Athene	cunicularia	Athene cunicularia	II
Animalia	Aves	Strigiformes	Strigidae	Bubo	virgianus	Bubo virgianus	II
Animalia	Aves	Strigiformes	Strigidae	Coccyz	huhu	Coccyz huhu	II
Animalia	Aves	Strigiformes	Strigidae	Glaucidium	brasiliense	Glaucidium brasiliense	II
Animalia	Aves	Strigiformes	Strigidae	Glaucidium	hardyi	Glaucidium hardyi	II
Animalia	Aves	Strigiformes	Strigidae	Glaucidium	nutssimum	Glaucidium nutssimum	II
Animalia	Aves	Strigiformes	Strigidae	Glaucidium	mooreorum	Glaucidium mooreorum	II
Animalia	Aves	Strigiformes	Strigidae	Lophostrix	cristata	Lophostrix cristata	II
Animalia	Aves	Strigiformes	Strigidae	Otus	atrapilla	Otus atrapilla	II
Animalia	Aves	Strigiformes	Strigidae	Otus	chilba	Otus chilba	II
Animalia	Aves	Strigiformes	Strigidae	Otus	sanctaecatarinae	Otus sanctaecatarinae	II
Animalia	Aves	Strigiformes	Strigidae	Otus	watsoni	Otus watsoni	II
Animalia	Aves	Strigiformes	Strigidae	Pseudoscops	colimata	Pseudoscops colimata	II
Animalia	Aves	Strigiformes	Strigidae	Pulsatrix	koenigsdiana	Pulsatrix koenigsdiana	II
Animalia	Aves	Strigiformes	Strigidae	Pulsatrix	perspicillata	Pulsatrix perspicillata	II
Animalia	Aves	Strigiformes	Strigidae	Strix	hybophila	Strix hybophila	II
Animalia	Aves	Strigiformes	Strigidae	Strix	virgata	Strix virgata	II
Animalia	Aves	Strigiformes	Tytonidae	Tyto	alba	Tyto alba	II
Animalia	Aves	Tinamiformes	Tinamidae	Tinamus	solitarius	Tinamus solitarius	I
Animalia	Reptilia	Crocodylia	Alligatoridae	Caiman	crocodilus	Caiman crocodilus	II
Animalia	Reptilia	Crocodylia	Alligatoridae	Caiman	latirostris	Caiman latirostris	I/II
Animalia	Reptilia	Crocodylia	Alligatoridae	Caiman	yacare	Caiman yacare	II
Animalia	Reptilia	Crocodylia	Alligatoridae	Melanosuchus	inger	Melanosuchus inger	I/II
Animalia	Reptilia	Crocodylia	Alligatoridae	Papobosuchus	papobrosus	Papobosuchus papobrosus	II
Animalia	Reptilia	Crocodylia	Alligatoridae	Papobosuchus	trigonatus	Papobosuchus trigonatus	II
Animalia	Reptilia	Sauria	Iguanidae	Iguana	iguana	Iguana iguana	II
Animalia	Reptilia	Sauria	Teiidae	Crocodylus	amazonicus	Crocodylus amazonicus	II
Animalia	Reptilia	Sauria	Teiidae	Dracaena	guianensis	Dracaena guianensis	II
Animalia	Reptilia	Sauria	Teiidae	Dracaena	paraguayensis	Dracaena paraguayensis	II
Animalia	Reptilia	Sauria	Teiidae	Tuphamia	carradensis	Tuphamia carradensis	II
Animalia	Reptilia	Sauria	Teiidae	Tuphamia	duseni	Tuphamia duseni	II
Animalia	Reptilia	Sauria	Teiidae	Tuphamia	bangineus	Tuphamia bangineus	II
Animalia	Reptilia	Sauria	Teiidae	Tuphamia	merrianae	Tuphamia merrianae	II
Animalia	Reptilia	Sauria	Teiidae	Tuphamia	palustris	Tuphamia palustris	II
Animalia	Reptilia	Sauria	Teiidae	Tuphamia	quadrilineatus	Tuphamia quadrilineatus	II
Animalia	Reptilia	Sauria	Teiidae	Tuphamia	rufescens	Tuphamia rufescens	II
Animalia	Reptilia	Sauria	Teiidae	Tuphamia	tegukin	Tuphamia tegukin	II
Animalia	Reptilia	Serpentes	Boidae	Boa	constrictor	Boa constrictor	II
Animalia	Reptilia	Serpentes	Boidae	Corallus	batesii	Corallus batesii	II
Animalia	Reptilia	Serpentes	Boidae	Corallus	caninus	Corallus caninus	II
Animalia	Reptilia	Serpentes	Boidae	Corallus	cropanii	Corallus cropanii	II
Animalia	Reptilia	Serpentes	Boidae	Corallus	hortulanus	Corallus hortulanus	II
Animalia	Reptilia	Serpentes	Boidae	Epicrates	assisi	Epicrates assisi	II
Animalia	Reptilia	Serpentes	Boidae	Epicrates	cenchrus	Epicrates cenchrus	II
Animalia	Reptilia	Serpentes	Boidae	Epicrates	crassus	Epicrates crassus	II
Animalia	Reptilia	Serpentes	Boidae	Eunectes	deschauensei	Eunectes deschauensei	II
Animalia	Reptilia	Serpentes	Boidae	Eunectes	murinus	Eunectes murinus	II
Animalia	Reptilia	Serpentes	Boidae	Eunectes	notatus	Eunectes notatus	II
Animalia	Reptilia	Serpentes	Colubridae	Celala	celala	Celala celala	II
Animalia	Reptilia	Serpentes	Colubridae	Cyclophis	gigas	Cyclophis gigas	II
Animalia	Reptilia	Serpentes	Tropidophidae	Trachyboa	guarisi	Trachyboa guarisi	II
Animalia	Reptilia	Serpentes	Tropidophidae	Tropidophis	paucisquamis	Tropidophis paucisquamis	II
Animalia	Reptilia	Serpentes	Tropidophidae	Tropidophis	taczanowskyi	Tropidophis taczanowskyi	II
Animalia	Reptilia	Serpentes	Verpidae	Crotalus	durus	Crotalus durus	III
Animalia	Reptilia	Testudines	Cheloniidae	Caretta	caretta	Caretta caretta	I
Animalia	Reptilia	Testudines	Cheloniidae	Chelonia	mydas	Chelonia mydas	I
Animalia	Reptilia	Testudines	Cheloniidae	Eretmochelys	imbricata	Eretmochelys imbricata	I
Animalia	Reptilia	Testudines	Cheloniidae	Lepidochelys	olivacea	Lepidochelys olivacea	I
Animalia	Reptilia	Testudines	Demochelyidae	Demochelys	coriacea	Demochelys coriacea	I
Animalia	Reptilia	Testudines	Podocnemididae	Peltocephalus	dumérilii	Peltocephalus dumérilii	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 8/20)

Animalia	Reptilia	Testudines	Podocnemididae	Podocnemis	erythrocephala	Podocnemis erythrocephala	II
Animalia	Reptilia	Testudines	Podocnemididae	Podocnemis	expansa	Podocnemis expansa	II
Animalia	Reptilia	Testudines	Podocnemididae	Podocnemis	sextuberculata	Podocnemis sextuberculata	II
Animalia	Reptilia	Testudines	Podocnemididae	Podocnemis	unifilis	Podocnemis unifilis	II
Animalia	Reptilia	Testudines	Testudinidae	Chebnois	carbonaria	Chebnois carbonaria	II
Animalia	Reptilia	Testudines	Testudinidae	Chebnois	denticulata	Chebnois denticulata	II
Animalia	Amphibia	Anura	Aromobatidae	Albates	femorals	Albates femorals	II
Animalia	Amphibia	Anura	Aromobatidae	Albates	hodli	Albates hodli	II
Animalia	Amphibia	Anura	Dendrobatidae	Adephobates	castaneotus	Adephobates castaneotus	II
Animalia	Amphibia	Anura	Dendrobatidae	Adephobates	gacatonotus	Adephobates gacatonotus	II
Animalia	Amphibia	Anura	Dendrobatidae	Adephobates	quiquevittatus	Adephobates quiquevittatus	II
Animalia	Amphibia	Anura	Dendrobatidae	Ameerega	braccata	Ameerega braccata	II
Animalia	Amphibia	Anura	Dendrobatidae	Ameerega	favopicta	Ameerega favopicta	II
Animalia	Amphibia	Anura	Dendrobatidae	Ameerega	hahneli	Ameerega hahneli	II
Animalia	Amphibia	Anura	Dendrobatidae	Ameerega	picta	Ameerega picta	II
Animalia	Amphibia	Anura	Dendrobatidae	Ameerega	puhrpecta	Ameerega puhrpecta	II
Animalia	Amphibia	Anura	Dendrobatidae	Ameerega	trivittata	Ameerega trivittata	II
Animalia	Amphibia	Anura	Dendrobatidae	Dendrobates	eucomelas	Dendrobates eucomelas	II
Animalia	Amphibia	Anura	Dendrobatidae	Dendrobates	tictorius	Dendrobates tictorius	II
Animalia	Amphibia	Anura	Dendrobatidae	Ranitomeya	toraro	Ranitomeya toraro	II
Animalia	Amphibia	Anura	Dendrobatidae	Ranitomeya	vanzolini	Ranitomeya vanzolini	II
Animalia	Amphibia	Anura	Dendrobatidae	Ranitomeya	ventrimaculata	Ranitomeya ventrimaculata	II
Animalia	Elesmobranchii	Carchariformes	Sphyrnidae	Sphyrna	lewini	Sphyrna lewini	II
Animalia	Elesmobranchii	Lamniformes	Cetorhinidae	Cetorhinus	maximus	Cetorhinus maximus	II
Animalia	Elesmobranchii	Lamniformes	Lamnidae	Carcharodon	carcharias	Carcharodon carcharias	II
Animalia	Elesmobranchii	Lamniformes	Lamnidae	Lamna	nasus	Lamna nasus	II
Animalia	Elesmobranchii	Orectoebiformes	Rhincodontidae	Rhincodon	typus	Rhincodon typus	II
Animalia	Elesmobranchii	Pristiiformes	Pristidae	Pristis	pectinata	Pristis pectinata	I
Animalia	Elesmobranchii	Pristiiformes	Pristidae	Pristis	perotteti	Pristis perotteti	I
Animalia	Actinopterygii	Osteoglossiformes	Arapaimidae	Arapaima	gigas	Arapaima gigas	II
Animalia	Actinopterygii	Syngnathiformes	Syngnathidae	Hippocampus	erectus	Hippocampus erectus	II
Animalia	Actinopterygii	Syngnathiformes	Syngnathidae	Hippocampus	reidi	Hippocampus reidi	II
Animalia	Gastropoda	Mesogastropoda	Strombidae	Strombus	gigas	Strombus gigas	II
Animalia	Anthozoa	Antipatharia	Antipathidae	Antipathes	atlantica	Antipathes atlantica	II
Animalia	Anthozoa	Antipatharia	Antipathidae	Antipathes	furcata	Antipathes furcata	II
Animalia	Anthozoa	Antipatharia	Antipathidae	Cerripathes	secchi	Cerripathes secchi	II
Animalia	Anthozoa	Antipatharia	Antipathidae	Pteropathes	fragilis	Pteropathes fragilis	II
Animalia	Anthozoa	Antipatharia	Cladopathidae	Chrysopathes	micrantha	Chrysopathes micrantha	II
Animalia	Anthozoa	Antipatharia	Cladopathidae	Chrysopathes	oligocrada	Chrysopathes oligocrada	II
Animalia	Anthozoa	Antipatharia	Myriopathidae	Plumapathes	fernandezii	Plumapathes fernandezii	II
Animalia	Anthozoa	Antipatharia	Myriopathidae	Plumapathes	pennacea	Plumapathes pennacea	II
Animalia	Anthozoa	Antipatharia	Myriopathidae	Tanacetpathes	barbadensis	Tanacetpathes barbadensis	II
Animalia	Anthozoa	Antipatharia	Myriopathidae	Tanacetpathes	hirta	Tanacetpathes hirta	II
Animalia	Anthozoa	Antipatharia	Myriopathidae	Tanacetpathes	bangpinnula	Tanacetpathes bangpinnula	II
Animalia	Anthozoa	Antipatharia	Myriopathidae	Tanacetpathes	tanacetum	Tanacetpathes tanacetum	II
Animalia	Anthozoa	Antipatharia	Myriopathidae	Tanacetpathes	thalassoros	Tanacetpathes thalassoros	II
Animalia	Anthozoa	Antipatharia	Myriopathidae	Tanacetpathes	thamnea	Tanacetpathes thamnea	II
Animalia	Anthozoa	Antipatharia	Schizopathidae	Schizopathes	affinis	Schizopathes affinis	II
Animalia	Anthozoa	Antipatharia	Stylobathidae	Stylobathes	colimnaris	Stylobathes colimnaris	II
Animalia	Anthozoa	Scleractinia	Agariciidae	Agaricia	agaricites	Agaricia agaricites	II
Animalia	Anthozoa	Scleractinia	Agariciidae	Agaricia	fragilis	Agaricia fragilis	II
Animalia	Anthozoa	Scleractinia	Agariciidae	Agaricia	grahamiae	Agaricia grahamiae	II
Animalia	Anthozoa	Scleractinia	Agariciidae	Agaricia	humilis	Agaricia humilis	II
Animalia	Anthozoa	Scleractinia	Agariciidae	Agaricia	undata	Agaricia undata	II
Animalia	Anthozoa	Scleractinia	Astrocoenidae	Stephanocoena	intersepta	Stephanocoena intersepta	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Anomocora	fecunda	Anomocora fecunda	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Caryophyllia	ambrosa	Caryophyllia ambrosa	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Caryophyllia	antillarum	Caryophyllia antillarum	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Caryophyllia	barbadensis	Caryophyllia barbadensis	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Caryophyllia	berteriana	Caryophyllia berteriana	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Caryophyllia	crypta	Caryophyllia crypta	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Caryophyllia	scobnosa	Caryophyllia scobnosa	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Cidocora	debilis	Cidocora debilis	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Coenocyathus	parvulus	Coenocyathus parvulus	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Concentrotheca	bevigata	Concentrotheca bevigata	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Dasmosmilia	lymani	Dasmosmilia lymani	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Dasmosmilia	variegata	Dasmosmilia variegata	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Deftocyathus	agassizii	Deftocyathus agassizii	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Deftocyathus	caibar	Deftocyathus caibar	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Deftocyathus	eccentricus	Deftocyathus eccentricus	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Deftocyathus	halanthus	Deftocyathus halanthus	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Deftocyathus	italicus	Deftocyathus italicus	II
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Deftocyathus	mosebyi	Deftocyathus mosebyi	II
Animalia	Anthozoa	Scleractinia	Desmophylum	dianthus	Desmophylum dianthus	II	
Animalia	Anthozoa	Scleractinia	Caryophyllidae	Lopelia	pertusa	Lopelia pertusa	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 9/20)

Animalia	Anthozoa	Sceractina	Caryophyllidae	Monohedotrochus	capitoli	Monohedotrochus capitoli	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Paracyathus	pucheilus	Paracyathus pucheilus	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Phacocyathus	fbis	Phacocyathus fbis	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Phyllangia	ameribana	Phyllangia ameribana	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Pourtaubsmilia	conferta	Pourtaubsmilia conferta	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Premonocyathus	cornuformis	Premonocyathus cornuformis	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Rhizosmilia	maculata	Rhizosmilia maculata	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Solenosmilia	variabilis	Solenosmilia variabilis	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Stephanocyathus	dadema	Stephanocyathus dadema	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Stephanocyathus	nobilis	Stephanocyathus nobilis	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Stephanocyathus	paliferus	Stephanocyathus paliferus	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Tethocyathus	cyindraceus	Tethocyathus cyindraceus	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Trochocyathus	laboreli	Trochocyathus laboreli	II
Animalia	Anthozoa	Sceractina	Caryophyllidae	Trochocyathus	rawsonii	Trochocyathus rawsonii	II
Animalia	Anthozoa	Sceractina	Dendrophyllidae	Balanophylla	dnetata	Balanophylla dnetata	II
Animalia	Anthozoa	Sceractina	Dendrophyllidae	Caldopsamma	manuenssis	Caldopsamma manuenssis	II
Animalia	Anthozoa	Sceractina	Dendrophyllidae	Dendrophylla	altermata	Dendrophylla altermata	II
Animalia	Anthozoa	Sceractina	Dendrophyllidae	Eguchipsamma	gaditana	Eguchipsamma gaditana	II
Animalia	Anthozoa	Sceractina	Dendrophyllidae	Enalipsamma	rostrata	Enalipsamma rostrata	II
Animalia	Anthozoa	Sceractina	Dendrophyllidae	Rhizopsamma	goesi	Rhizopsamma goesi	II
Animalia	Anthozoa	Sceractina	Dendrophyllidae	Tubastraea	cocconeae	Tubastraea cocconeae	II
Animalia	Anthozoa	Sceractina	Dendrophyllidae	Tubastraea	tagusensis	Tubastraea tagusensis	II
Animalia	Anthozoa	Sceractina	Favidae	Favia	favus	Favia favus	II
Animalia	Anthozoa	Sceractina	Favidae	Favia	fragum	Favia fragum	II
Animalia	Anthozoa	Sceractina	Favidae	Favia	gravidata	Favia gravidata	II
Animalia	Anthozoa	Sceractina	Favidae	Favia	leptophylla	Favia leptophylla	II
Animalia	Anthozoa	Sceractina	Favidae	Montastrea	cavernosa	Montastrea cavernosa	II
Animalia	Anthozoa	Sceractina	Favellidae	Favellum	apertum	Favellum apertum	II
Animalia	Anthozoa	Sceractina	Favellidae	Javana	cailloti	Javana cailloti	II
Animalia	Anthozoa	Sceractina	Favellidae	Plectrochodes	frustum	Plectrochodes frustum	II
Animalia	Anthozoa	Sceractina	Favellidae	Polymyces	fragilis	Polymyces fragilis	II
Animalia	Anthozoa	Sceractina	Fungacyathidae	Fungacyathus	crispus	Fungacyathus crispus	II
Animalia	Anthozoa	Sceractina	Fungacyathidae	Fungacyathus	symmetricus	Fungacyathus symmetricus	II
Animalia	Anthozoa	Sceractina	Gynidae	Schizocyathus	fissilis	Schizocyathus fissilis	II
Animalia	Anthozoa	Sceractina	Gynidae	Stenocyathus	vermiformis	Stenocyathus vermiformis	II
Animalia	Anthozoa	Sceractina	Meandrinidae	Meandrina	brasiliensis	Meandrina brasiliensis	II
Animalia	Anthozoa	Sceractina	Meandrinidae	Meandrina	meandrites	Meandrina meandrites	II
Animalia	Anthozoa	Sceractina	Mussidae	Mussimilia	braziliensis	Mussimilia braziliensis	II
Animalia	Anthozoa	Sceractina	Mussidae	Mussimilia	harttii	Mussimilia harttii	II
Animalia	Anthozoa	Sceractina	Mussidae	Mussimilia	hispidata	Mussimilia hispidata	II
Animalia	Anthozoa	Sceractina	Mussidae	Scolymia	cubensis	Scolymia cubensis	II
Animalia	Anthozoa	Sceractina	Mussidae	Scolymia	welshii	Scolymia welshii	II
Animalia	Anthozoa	Sceractina	Oculinidae	Bathelia	candida	Bathelia candida	II
Animalia	Anthozoa	Sceractina	Oculinidae	Madrepora	carolina	Madrepora carolina	II
Animalia	Anthozoa	Sceractina	Oculinidae	Madrepora	oculata	Madrepora oculata	II
Animalia	Anthozoa	Sceractina	Oculinidae	Schizoculina	fissipara	Schizoculina fissipara	II
Animalia	Anthozoa	Sceractina	Pocilloporidae	Madracis	asperula	Madracis asperula	II
Animalia	Anthozoa	Sceractina	Pocilloporidae	Madracis	brueggemannii	Madracis brueggemannii	II
Animalia	Anthozoa	Sceractina	Pocilloporidae	Madracis	decactis	Madracis decactis	II
Animalia	Anthozoa	Sceractina	Pocilloporidae	Madracis	fragilis	Madracis fragilis	II
Animalia	Anthozoa	Sceractina	Pocilloporidae	Madracis	myriaster	Madracis myriaster	II
Animalia	Anthozoa	Sceractina	Pocilloporidae	Madracis	pharensis	Madracis pharensis	II
Animalia	Anthozoa	Sceractina	Poritidae	Porites	astroides	Porites astroides	II
Animalia	Anthozoa	Sceractina	Poritidae	Porites	branneri	Porites branneri	II
Animalia	Anthozoa	Sceractina	Rhizangiidae	Astranga	rathbunii	Astranga rathbunii	II
Animalia	Anthozoa	Sceractina	Rhizangiidae	Astranga	solearia	Astranga solearia	II
Animalia	Anthozoa	Sceractina	Siderastreae	Siderastrea	radians	Siderastrea radians	II
Animalia	Anthozoa	Sceractina	Siderastreae	Siderastrea	sideraea	Siderastrea sideraea	II
Animalia	Anthozoa	Sceractina	Siderastreae	Siderastrea	stellata	Siderastrea stellata	II
Animalia	Anthozoa	Sceractina	Turbellidae	Deltothyathodes	stimpsonii	Deltothyathodes stimpsonii	II
Animalia	Anthozoa	Sceractina	Turbellidae	Peponocyathus	folliculus	Peponocyathus folliculus	II
Animalia	Anthozoa	Sceractina	Turbellidae	Sphenotrochus	auritus	Sphenotrochus auritus	II
Animalia	Hydrozoa	Mileporina	Mileporidae	Milepora	abcornis	Milepora abcornis	II
Animalia	Hydrozoa	Mileporina	Mileporidae	Milepora	braziliensis	Milepora braziliensis	II
Animalia	Hydrozoa	Mileporina	Mileporidae	Milepora	nitida	Milepora nitida	II
Animalia	Hydrozoa	Mileporina	Mileporidae	Milepora	squarrosa	Milepora squarrosa	II
Animalia	Hydrozoa	Styasterina	Styasteridae	Styaster	duchassaingii	Styaster duchassaingii	II
Animalia	Hydrozoa	Styasterina	Styasteridae	Styaster	roseus	Styaster roseus	II
Plantae		Caryophyllales	Cactaceae	Arrojoa	abifibra	Arrojoa abifibra	II
Plantae		Caryophyllales	Cactaceae	Arrojoa	bahensis	Arrojoa bahensis	II
Plantae		Caryophyllales	Cactaceae	Arrojoa	dnae	Arrojoa dnae	II
Plantae		Caryophyllales	Cactaceae	Arrojoa	penicillata	Arrojoa penicillata	II
Plantae		Caryophyllales	Cactaceae	Arrojoa	rhodantha	Arrojoa rhodantha	II
Plantae		Caryophyllales	Cactaceae	Arthrocerus	gibbvii	Arthrocerus gibbvii	II
Plantae		Caryophyllales	Cactaceae	Arthrocerus	mebanurus	Arthrocerus mebanurus	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 10/20)

P antae		Caryophyllales	Cactaceae	Arthrocerus	rondonianus	Arthrocerus rondonianus	II
P antae		Caryophyllales	Cactaceae	Arthrocerus	spinosissimus	Arthrocerus spinosissimus	II
P antae		Caryophyllales	Cactaceae	Brasilicereus	markgrafii	Brasilicereus markgrafii	II
P antae		Caryophyllales	Cactaceae	Brasilicereus	phaeacanthus	Brasilicereus phaeacanthus	II
P antae		Caryophyllales	Cactaceae	Cereus	adeharianii	Cereus adeharianii	II
P antae		Caryophyllales	Cactaceae	Cereus	aethiops	Cereus aethiops	II
P antae		Caryophyllales	Cactaceae	Cereus	abcaulis	Cereus abcaulis	II
P antae		Caryophyllales	Cactaceae	Cereus	bicolor	Cereus bicolor	II
P antae		Caryophyllales	Cactaceae	Cereus	femambucensis	Cereus femambucensis	II
P antae		Caryophyllales	Cactaceae	Cereus	hexagonus	Cereus hexagonus	II
P antae		Caryophyllales	Cactaceae	Cereus	hidmannianus	Cereus hidmannianus	II
P antae		Caryophyllales	Cactaceae	Cereus	insularis	Cereus insularis	II
P antae		Caryophyllales	Cactaceae	Cereus	imaculatus	Cereus imaculatus	II
P antae		Caryophyllales	Cactaceae	Cereus	kroenkei	Cereus kroenkei	II
P antae		Caryophyllales	Cactaceae	Cereus	mabeila	Cereus mabeila	II
P antae		Caryophyllales	Cactaceae	Cereus	ridleyi	Cereus ridleyi	II
P antae		Caryophyllales	Cactaceae	Cereus	saddanensis	Cereus saddanensis	II
P antae		Caryophyllales	Cactaceae	Cereus	spigazzianus	Cereus spigazzianus	II
P antae		Caryophyllales	Cactaceae	Cococereus	bradei	Cococereus bradei	II
P antae		Caryophyllales	Cactaceae	Cococereus	crassispinus	Cococereus crassispinus	II
P antae		Caryophyllales	Cactaceae	Cococereus	laniflorus	Cococereus laniflorus	II
P antae		Caryophyllales	Cactaceae	Cococereus	meheri	Cococereus meheri	II
P antae		Caryophyllales	Cactaceae	Cococereus	pusilliflorus	Cococereus pusilliflorus	II
P antae		Caryophyllales	Cactaceae	Cleistocactus	baumannii	Cleistocactus baumannii	II
P antae		Caryophyllales	Cactaceae	Coelocarpus	aureus	Coelocarpus aureus	II
P antae		Caryophyllales	Cactaceae	Coelocarpus	buxbaumianus	Coelocarpus buxbaumianus	II
P antae		Caryophyllales	Cactaceae	Coelocarpus	fluminensis	Coelocarpus fluminensis	II
P antae		Caryophyllales	Cactaceae	Coelocarpus	goebelianus	Coelocarpus goebelianus	II
P antae		Caryophyllales	Cactaceae	Coelocarpus	pluricostatus	Coelocarpus pluricostatus	II
P antae		Caryophyllales	Cactaceae	Coelocarpus	purpureus	Coelocarpus purpureus	II
P antae		Caryophyllales	Cactaceae	Dioscorea	bahiensis	Dioscorea bahiensis	I
P antae		Caryophyllales	Cactaceae	Dioscorea	ferricola	Dioscorea ferricola	I
P antae		Caryophyllales	Cactaceae	Dioscorea	heptacanthus	Dioscorea heptacanthus	I
P antae		Caryophyllales	Cactaceae	Dioscorea	horstii	Dioscorea horstii	I
P antae		Caryophyllales	Cactaceae	Dioscorea	pachylobotrys	Dioscorea pachylobotrys	I
P antae		Caryophyllales	Cactaceae	Dioscorea	pseudonigra	Dioscorea pseudonigra	I
P antae		Caryophyllales	Cactaceae	Dioscorea	zehlneri	Dioscorea zehlneri	I
P antae		Caryophyllales	Cactaceae	Dioscorea	amazonensis	Dioscorea amazonensis	II
P antae		Caryophyllales	Cactaceae	Echinopsis	brasiliensis	Echinopsis brasiliensis	II
P antae		Caryophyllales	Cactaceae	Echinopsis	cachibana	Echinopsis cachibana	II
P antae		Caryophyllales	Cactaceae	Echinopsis	eyresii	Echinopsis eyresii	II
P antae		Caryophyllales	Cactaceae	Echinopsis	oxygonia	Echinopsis oxygonia	II
P antae		Caryophyllales	Cactaceae	Echinopsis	rhodotricha	Echinopsis rhodotricha	II
P antae		Caryophyllales	Cactaceae	Epiphyllum	phyllanthus	Epiphyllum phyllanthus	II
P antae		Caryophyllales	Cactaceae	Espositoopsis	dybowskii	Espositoopsis dybowskii	II
P antae		Caryophyllales	Cactaceae	Facheiroa	cephalobolana	Facheiroa cephalobolana	II
P antae		Caryophyllales	Cactaceae	Facheiroa	squamulosa	Facheiroa squamulosa	II
P antae		Caryophyllales	Cactaceae	Facheiroa	ubi	Facheiroa ubi	II
P antae		Caryophyllales	Cactaceae	Frailea	buenekei	Frailea buenekei	II
P antae		Caryophyllales	Cactaceae	Frailea	bueningiana	Frailea bueningiana	II
P antae		Caryophyllales	Cactaceae	Frailea	castanea	Frailea castanea	II
P antae		Caryophyllales	Cactaceae	Frailea	cataphracta	Frailea cataphracta	II
P antae		Caryophyllales	Cactaceae	Frailea	curvispina	Frailea curvispina	II
P antae		Caryophyllales	Cactaceae	Frailea	gracillima	Frailea gracillima	II
P antae		Caryophyllales	Cactaceae	Frailea	mammifera	Frailea mammifera	II
P antae		Caryophyllales	Cactaceae	Frailea	perumbilicata	Frailea perumbilicata	II
P antae		Caryophyllales	Cactaceae	Frailea	phaeodisca	Frailea phaeodisca	II
P antae		Caryophyllales	Cactaceae	Frailea	pumila	Frailea pumila	II
P antae		Caryophyllales	Cactaceae	Frailea	pygmaea	Frailea pygmaea	II
P antae		Caryophyllales	Cactaceae	Gymnocaulis	anisitsii	Gymnocaulis anisitsii	II
P antae		Caryophyllales	Cactaceae	Gymnocaulis	buenekei	Gymnocaulis buenekei	II
P antae		Caryophyllales	Cactaceae	Gymnocaulis	denudatum	Gymnocaulis denudatum	II
P antae		Caryophyllales	Cactaceae	Gymnocaulis	horstii	Gymnocaulis horstii	II
P antae		Caryophyllales	Cactaceae	Gymnocaulis	marsoneri	Gymnocaulis marsoneri	II
P antae		Caryophyllales	Cactaceae	Gymnocaulis	uruguayense	Gymnocaulis uruguayense	II
P antae		Caryophyllales	Cactaceae	Harrisia	adscendens	Harrisia adscendens	II
P antae		Caryophyllales	Cactaceae	Harrisia	bailliana	Harrisia bailliana	II
P antae		Caryophyllales	Cactaceae	Hatiora	epiphyllodes	Hatiora epiphyllodes	II
P antae		Caryophyllales	Cactaceae	Hatiora	gaertneri	Hatiora gaertneri	II
P antae		Caryophyllales	Cactaceae	Hatiora	hemihæa	Hatiora hemihæa	II
P antae		Caryophyllales	Cactaceae	Hatiora	rosea	Hatiora rosea	II
P antae		Caryophyllales	Cactaceae	Hatiora	salicornioides	Hatiora salicornioides	II
P antae		Caryophyllales	Cactaceae	Leocereus	bahiensis	Leocereus bahiensis	II
P antae		Caryophyllales	Cactaceae	Lepismium	cruciforme	Lepismium cruciforme	II
P antae		Caryophyllales	Cactaceae	Lepismium	houletianum	Lepismium houletianum	II
P antae		Caryophyllales	Cactaceae	Lepismium	umbroides	Lepismium umbroides	II
P antae		Caryophyllales	Cactaceae	Lepismium	warmingianum	Lepismium warmingianum	II
P antae		Caryophyllales	Cactaceae	Mahoea	patagonica	Mahoea patagonica	II
P antae		Caryophyllales	Cactaceae	Mebacactus	abicephalus	Mebacactus abicephalus	II
P antae		Caryophyllales	Cactaceae	Mebacactus	azureus	Mebacactus azureus	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 11/20)

P antae		Caryophyllés	Cactaceae	M e bcactus	bah énsis	M e bcactus bah énsis	II
P antae		Caryophyllés	Cactaceae	M e bcactus	conc hñus	M e bcactus conc hñus	II
P antae		Caryophyllés	Cactaceae	M e bcactus	cono deus	M e bcactus cono deus	I
P antae		Caryophyllés	Cactaceae	M e bcactus	de ñacanthus	M e bcactus de ñacanthus	I
P antae		Caryophyllés	Cactaceae	M e bcactus	erestii	M e bcactus erestii	II
P antae		Caryophyllés	Cactaceae	M e bcactus	esteves ii	M e bcactus esteves ii	II
P antae		Caryophyllés	Cactaceae	M e bcactus	gáucescens	M e bcactus gáucescens	I
P antae		Caryophyllés	Cactaceae	M e bcactus	horridus	M e bcactus horridus	II
P antae		Caryophyllés	Cactaceae	M e bcactus	ñssens éñus	M e bcactus ñssens éñus	II
P antae		Caryophyllés	Cactaceae	M e bcactus	évkéstatus	M e bcactus évkéstatus	II
P antae		Caryophyllés	Cactaceae	M e bcactus	ñeryi	M e bcactus ñeryi	II
P antae		Caryophyllés	Cactaceae	M e bcactus	oreas	M e bcactus oreas	II
P antae		Caryophyllés	Cactaceae	M e bcactus	pachyacanthus	M e bcactus pachyacanthus	II
P antae		Caryophyllés	Cactaceae	M e bcactus	paucispñus	M e bcactus paucispñus	I
P antae		Caryophyllés	Cactaceae	M e bcactus	salvadorensis	M e bcactus salvadorensis	II
P antae		Caryophyllés	Cactaceae	M e bcactus	sm ñthii	M e bcactus sm ñthii	II
P antae		Caryophyllés	Cactaceae	M e bcactus	vbóceus	M e bcactus vbóceus	II
P antae		Caryophyllés	Cactaceae	M e bcactus	zéhñneri	M e bcactus zéhñneri	II
P antae		Caryophyllés	Cactaceae	M cranthocereus	abcephalus	M cranthocereus abcephalus	II
P antae		Caryophyllés	Cactaceae	M cranthocereus	aurázureus	M cranthocereus aurázureus	II
P antae		Caryophyllés	Cactaceae	M cranthocereus	do lichospem átícu	M cranthocereus do lichospem	II
P antae		Caryophyllés	Cactaceae	M cranthocereus	estevesii	M cranthocereus estevesii	II
P antae		Caryophyllés	Cactaceae	M cranthocereus	flaviflorus	M cranthocereus flaviflorus	II
P antae		Caryophyllés	Cactaceae	M cranthocereus	polyanthus	M cranthocereus polyanthus	II
P antae		Caryophyllés	Cactaceae	M cranthocereus	purpureus	M cranthocereus purpureus	II
P antae		Caryophyllés	Cactaceae	M cranthocereus	streckeri	M cranthocereus streckeri	II
P antae		Caryophyllés	Cactaceae	M cranthocereus	vobiflorus	M cranthocereus vobiflorus	II
P antae		Caryophyllés	Cactaceae	O punta	brasiliensis	O punta brasiliensis	II
P antae		Caryophyllés	Cactaceae	O punta	estevesii	O punta estevesii	II
P antae		Caryophyllés	Cactaceae	O punta	ñam oena	O punta ñam oena	II
P antae		Caryophyllés	Cactaceae	O punta	monacantha	O punta monacantha	II
P antae		Caryophyllés	Cactaceae	O punta	palm adora	O punta palm adora	II
P antae		Caryophyllés	Cactaceae	O punta	qu ña	O punta qu ña	II
P antae		Caryophyllés	Cactaceae	O punta	salm ñana	O punta salm ñana	II
P antae		Caryophyllés	Cactaceae	O punta	saxatilis	O punta saxatilis	II
P antae		Caryophyllés	Cactaceae	O punta	viridrubra	O punta viridrubra	II
P antae		Caryophyllés	Cactaceae	O punta	wemeri	O punta wemeri	II
P antae		Caryophyllés	Cactaceae	Paroda	abcrportana	Paroda abcrportana	II
P antae		Caryophyllés	Cactaceae	Paroda	amostana	Paroda amostana	II
P antae		Caryophyllés	Cactaceae	Paroda	bu ñngii	Paroda bu ñngii	II
P antae		Caryophyllés	Cactaceae	Paroda	caram beñsis	Paroda caram beñsis	II
P antae		Caryophyllés	Cactaceae	Paroda	conchña	Paroda conchña	II
P antae		Caryophyllés	Cactaceae	Paroda	crass gba	Paroda crass gba	II
P antae		Caryophyllés	Cactaceae	Paroda	curvispñna	Paroda curvispñna	II
P antae		Caryophyllés	Cactaceae	Paroda	ernacea	Paroda ernacea	II
P antae		Caryophyllés	Cactaceae	Paroda	fusca	Paroda fusca	II
P antae		Caryophyllés	Cactaceae	Paroda	hase bergii	Paroda hase bergii	II
P antae		Caryophyllés	Cactaceae	Paroda	herteri	Paroda herteri	II
P antae		Caryophyllés	Cactaceae	Paroda	horstii	Paroda horstii	II
P antae		Caryophyllés	Cactaceae	Paroda	långsdorfii	Paroda långsdorfii	II
P antae		Caryophyllés	Cactaceae	Paroda	lñnghausii	Paroda lñnghausii	II
P antae		Caryophyllés	Cactaceae	Paroda	lñkii	Paroda lñkii	II
P antae		Caryophyllés	Cactaceae	Paroda	m agñfca	Paroda m agñfca	II
P antae		Caryophyllés	Cactaceae	Paroda	m am m u bsa	Paroda m am m u bsa	II
P antae		Caryophyllés	Cactaceae	Paroda	m eonacantha	Paroda m eonacantha	II
P antae		Caryophyllés	Cactaceae	Paroda	m urcata	Paroda m urcata	II
P antae		Caryophyllés	Cactaceae	Paroda	neohorstii	Paroda neohorstii	II
P antae		Caryophyllés	Cactaceae	Paroda	nothom huscula	Paroda nothom huscula	II
P antae		Caryophyllés	Cactaceae	Paroda	ottonis	Paroda ottonis	II
P antae		Caryophyllés	Cactaceae	Paroda	oxycostata	Paroda oxycostata	II
P antae		Caryophyllés	Cactaceae	Paroda	pem utata	Paroda pem utata	II
P antae		Caryophyllés	Cactaceae	Paroda	rechensis	Paroda rechensis	II
P antae		Caryophyllés	Cactaceae	Paroda	rudbueneri	Paroda rudbueneri	II
P antae		Caryophyllés	Cactaceae	Paroda	rutilans	Paroda rutilans	II
P antae		Caryophyllés	Cactaceae	Paroda	schum ann ñana	Paroda schum ann ñana	II
P antae		Caryophyllés	Cactaceae	Paroda	scopa	Paroda scopa	II
P antae		Caryophyllés	Cactaceae	Paroda	se lbw ii	Paroda se lbw ii	II
P antae		Caryophyllés	Cactaceae	Paroda	stockñgeri	Paroda stockñgeri	II
P antae		Caryophyllés	Cactaceae	Paroda	tenu cylñdríca	Paroda tenu cylñdríca	II
P antae		Caryophyllés	Cactaceae	Paroda	warasii	Paroda warasii	II
P antae		Caryophyllés	Cactaceae	Paroda	wemeri	Paroda wemeri	II
P antae		Caryophyllés	Cactaceae	P ibsocereus	abísum m us	P ibsocereus abísum m us	II
P antae		Caryophyllés	Cactaceae	P ibsocereus	arrab ñae	P ibsocereus arrab ñae	II
P antae		Caryophyllés	Cactaceae	P ibsocereus	aureispñus	P ibsocereus aureispñus	II
P antae		Caryophyllés	Cactaceae	P ibsocereus	aurísetus	P ibsocereus aurísetus	II
P antae		Caryophyllés	Cactaceae	P ibsocereus	azu éñsis	P ibsocereus azu éñsis	II
P antae		Caryophyllés	Cactaceae	P ibsocereus	brasiliensis	P ibsocereus brasiliensis	II
P antae		Caryophyllés	Cactaceae	P ibsocereus	cathgcolá	P ibsocereus cathgcolá	II
P antae		Caryophyllés	Cactaceae	P ibsocereus	chrysoste b	P ibsocereus chrysoste b	II
P antae		Caryophyllés	Cactaceae	P ibsocereus	dens áreo átus	P ibsocereus dens áreo átus	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 12/20)

P antae		Caryophyllales	Cactaceae	P ibsocereus	diersianus	P ibsocereus diersianus	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	flavulinatus	P ibsocereus flavulinatus	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	flexibilisphus	P ibsocereus flexibilisphus	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	fbccosus	P ibsocereus fbccosus	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	fulvianatus	P ibsocereus fulvianatus	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	gauchochrous	P ibsocereus gauchochrous	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	gounelele	P ibsocereus gounelele	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	m achrisii	P ibsocereus m achrisii	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	m agnificus	P ibsocereus m agnificus	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	m ulticostatus	P ibsocereus m ulticostatus	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	olgoepis	P ibsocereus olgoepis	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	pachybdus	P ibsocereus pachybdus	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	pentadrophorus	P ibsocereus pentadrophorus	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	pauhyensis	P ibsocereus pauhyensis	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	subsmilis	P ibsocereus subsmilis	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	tuberculatus	P ibsocereus tuberculatus	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	ubi	P ibsocereus ubi	II
P antae		Caryophyllales	Cactaceae	P ibsocereus	vilaboensis	P ibsocereus vilaboensis	II
P antae		Caryophyllales	Cactaceae	P raecereus	euchbrus	P raecereus euchbrus	II
P antae		Caryophyllales	Cactaceae	P pseudoacanthoc	brasiliensis	P pseudoacanthocereus brasiliensis	II
P antae		Caryophyllales	Cactaceae	Pseudorhpsalis	ramubsa	Pseudorhpsalis ramubsa	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	baccifera	Rhpsalis baccifera	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	burcheilii	Rhpsalis burcheilii	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	campos-portoana	Rhpsalis campos-portoana	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	cereoides	Rhpsalis cereoides	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	cereuscula	Rhpsalis cereuscula	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	calvata	Rhpsalis calvata	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	crispata	Rhpsalis crispata	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	dissimilis	Rhpsalis dissimilis	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	elliptica	Rhpsalis elliptica	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	ewaldiana	Rhpsalis ewaldiana	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	fbccosa	Rhpsalis fbccosa	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	grandiflora	Rhpsalis grandiflora	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	hoeferi	Rhpsalis hoeferi	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	juengeri	Rhpsalis juengeri	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	indbergiana	Rhpsalis indbergiana	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	m esembryanthoides	Rhpsalis m esembryanthoides	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	m esembryanthoides	Rhpsalis m esembryanthoides	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	neves-armondii	Rhpsalis neves-armondii	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	oblonga	Rhpsalis oblonga	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	olivifera	Rhpsalis olivifera	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	omndoi	Rhpsalis omndoi	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	pacheco-bonis	Rhpsalis pacheco-bonis	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	pachyptera	Rhpsalis pachyptera	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	paradoxa	Rhpsalis paradoxa	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	pentaptera	Rhpsalis pentaptera	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	pibcarpa	Rhpsalis pibcarpa	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	puhira	Rhpsalis puhira	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	puncteodiscus	Rhpsalis puncteodiscus	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	russeilii	Rhpsalis russeilii	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	suata	Rhpsalis suata	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	teres	Rhpsalis teres	II
P antae		Caryophyllales	Cactaceae	Rhpsalis	trigona	Rhpsalis trigona	II
P antae		Caryophyllales	Cactaceae	Schlimbergera	kautskyi	Schlimbergera kautskyi	II
P antae		Caryophyllales	Cactaceae	Schlimbergera	m crosphaerica	Schlimbergera m crosphaerica	II
P antae		Caryophyllales	Cactaceae	Schlimbergera	opuntoides	Schlimbergera opuntoides	II
P antae		Caryophyllales	Cactaceae	Schlimbergera	orsschiana	Schlimbergera orsschiana	II
P antae		Caryophyllales	Cactaceae	Schlimbergera	russeiliana	Schlimbergera russeiliana	II
P antae		Caryophyllales	Cactaceae	Schlimbergera	truncata	Schlimbergera truncata	II
P antae		Caryophyllales	Cactaceae	Sebnocereus	setaceus	Sebnocereus setaceus	II
P antae		Caryophyllales	Cactaceae	Sebnocereus	wittii	Sebnocereus wittii	II
P antae		Caryophyllales	Cactaceae	Stephanocereus	leucostele	Stephanocereus leucostele	II
P antae		Caryophyllales	Cactaceae	Stephanocereus	luetzeburgii	Stephanocereus luetzeburgii	II
P antae		Caryophyllales	Cactaceae	Tacnga	braunii	Tacnga braunii	II
P antae		Caryophyllales	Cactaceae	Tacnga	funalis	Tacnga funalis	II
P antae		Caryophyllales	Cactaceae	Turbnicarpus	mongbergieri	Turbnicarpus mongbergieri	I
P antae		Caryophyllales	Cactaceae	Uebelmannia	bueningii	Uebelmannia bueningii	I
P antae		Caryophyllales	Cactaceae	Uebelmannia	gummifera	Uebelmannia gummifera	I
P antae		Caryophyllales	Cactaceae	Uebelmannia	pectinifera	Uebelmannia pectinifera	I
P antae		Cyathea	Cyatheaceae	Cyathea	abidopabata	Cyathea abidopabata	II
P antae		Cyathea	Cyatheaceae	Cyathea	andna	Cyathea andna	II
P antae		Cyathea	Cyatheaceae	Cyathea	arborea	Cyathea arborea	II
P antae		Cyathea	Cyatheaceae	Cyathea	arbuscula	Cyathea arbuscula	II
P antae		Cyathea	Cyatheaceae	Cyathea	atrovirens	Cyathea atrovirens	II
P antae		Cyathea	Cyatheaceae	Cyathea	axillaris	Cyathea axillaris	II
P antae		Cyathea	Cyatheaceae	Cyathea	bahensis	Cyathea bahensis	II
P antae		Cyathea	Cyatheaceae	Cyathea	compta	Cyathea compta	II
P antae		Cyathea	Cyatheaceae	Cyathea	cyatheoides	Cyathea cyatheoides	II
P antae		Cyathea	Cyatheaceae	Cyathea	dekadii	Cyathea dekadii	II
P antae		Cyathea	Cyatheaceae	Cyathea	dentculata	Cyathea dentculata	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 13/20)

P antae		Cyathea bs	Cyatheaaceae	Cyathea	dichrom ato lepis	Cyathea dichrom ato lepis	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	fee i	Cyathea fee i	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	gardneri	Cyathea gardneri	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	glaz bvii	Cyathea glaz bvii	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	h rsuta	Cyathea h rsuta	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	lasbsora	Cyathea lasbsora	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	m acrocarpa	Cyathea m acrocarpa	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	m elb-baroeto i	Cyathea m elb-baroeto i	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	m exae	Cyathea m exae	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	m crodonta	Cyathea m crodonta	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	m crom era	Cyathea m crom era	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	m ulifbra	Cyathea m ulifbra	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	pha brata	Cyathea pha brata	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	poepgii	Cyathea poepgii	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	portoana	Cyathea portoana	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	praec ncta	Cyathea praec ncta	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	pubens	Cyathea pubens	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	pungens	Cyathea pungens	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	schenckii	Cyathea schenckii	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	subarborescens	Cyathea subarborescens	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	subnc isa	Cyathea subnc isa	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	subm argnalis	Cyathea subm argnalis	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	surnam ensis	Cyathea surnam ensis	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	thysano lepis	Cyathea thysano lepis	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	trillii	Cyathea trillii	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	trindadensis	Cyathea trindadensis	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	u bi	Cyathea u bi	II
P antae		Cyathea bs	Cyatheaaceae	Cyathea	vilbsa	Cyathea vilbsa	II
P antae		D ckson a bs	D ckson aceae	D ckson a	se lbw ana	D ckson a se lbw ana	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	appar tana	Euphorba appar tana	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	attastom a	Euphorba attastom a	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	com osa	Euphorba com osa	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	estevesii	Euphorba estevesii	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	gym noc lada	Euphorba gym noc lada	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	heterodoxa	Euphorba heterodoxa	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	ho bch brna	Euphorba ho bch brna	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	lathyris	Euphorba lathyris	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	m argnata	Euphorba m argnata	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	phosphorea	Euphorba phosphorea	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	prostrata	Euphorba prostrata	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	psam m ophi la	Euphorba psam m ophi la	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	rhabdodes	Euphorba rhabdodes	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	sarcodes	Euphorba sarcodes	II
P antae		Euphorba bs	Euphorba ceae	Euphorba	spolisii	Euphorba spolisii	II
P antae		Laura bs	Lauraceae	An ba	rosaeodora	An ba rosaeodora	II
P antae		Faba bs	Legum nosae	Caesalpin a	ech nata	Caesalpin a ech nata	II
P antae		Faba bs	Legum nosae	D aberg a	n gra	D aberg a n gra	I
P antae		Sapnda bs	M elaceae	Cedre la	fissilis	Cedre la fissilis	III
P antae		Sapnda bs	M elaceae	Cedre la	lilib i	Cedre la lilib i	III
P antae		Sapnda bs	M elaceae	Cedre la	odorata	Cedre la odorata	III
P antae		Sapnda bs	M elaceae	Sw ẽ ten a	m acrophylla	Sw ẽ ten a m acrophylla	II
P antae		O rch ides	O rch idaceae	Acneta	altico la	Acneta altico la	II
P antae		O rch ides	O rch idaceae	Aspas a	lnata	Aspas a lnata	II
P antae		O rch ides	O rch idaceae	Aspas a	silvana	Aspas a silvana	II
P antae		O rch ides	O rch idaceae	Aspas a	variegata	Aspas a variegata	II
P antae		O rch ides	O rch idaceae	B ifrenar a	atropurpurea	B ifrenar a atropurpurea	II
P antae		O rch ides	O rch idaceae	B ifrenar a	ca barata	B ifrenar a ca barata	II
P antae		O rch ides	O rch idaceae	B ifrenar a	charlesworthii	B ifrenar a charlesworthii	II
P antae		O rch ides	O rch idaceae	B ifrenar a	cav gera	B ifrenar a cav gera	II
P antae		O rch ides	O rch idaceae	B ifrenar a	harrisonae	B ifrenar a harrisonae	II
P antae		O rch ides	O rch idaceae	B ifrenar a	nodora	B ifrenar a nodora	II
P antae		O rch ides	O rch idaceae	B ifrenar a	leucorrhoda	B ifrenar a leucorrhoda	II
P antae		O rch ides	O rch idaceae	B ifrenar a	bngcom is	B ifrenar a bngcom is	II
P antae		O rch ides	O rch idaceae	B ifrenar a	m elanopoda	B ifrenar a m elanopoda	II
P antae		O rch ides	O rch idaceae	B ifrenar a	m ellico br	B ifrenar a m ellico br	II
P antae		O rch ides	O rch idaceae	B ifrenar a	racem osa	B ifrenar a racem osa	II
P antae		O rch ides	O rch idaceae	B ifrenar a	silvana	B ifrenar a silvana	II
P antae		O rch ides	O rch idaceae	B ifrenar a	stefanae	B ifrenar a stefanae	II
P antae		O rch ides	O rch idaceae	B ifrenar a	tyr anth na	B ifrenar a tyr anth na	II
P antae		O rch ides	O rch idaceae	B ifrenar a	venezuelana	B ifrenar a venezuelana	II
P antae		O rch ides	O rch idaceae	B ifrenar a	verboonenii	B ifrenar a verboonenii	II
P antae		O rch ides	O rch idaceae	B ifrenar a	vite lina	B ifrenar a vite lina	II
P antae		O rch ides	O rch idaceae	B ifrenar a	wittgii	B ifrenar a wittgii	II
P antae		O rch ides	O rch idaceae	B ẽta	catenu lta	B ẽta catenu lta	II
P antae		O rch ides	O rch idaceae	B rassavo la	angustata	B rassavo la angustata	II
P antae		O rch ides	O rch idaceae	B rassavo la	cebole lta	B rassavo la cebole lta	II
P antae		O rch ides	O rch idaceae	B rassavo la	filifla	B rassavo la filifla	II
P antae		O rch ides	O rch idaceae	B rassavo la	flage laris	B rassavo la flage laris	II
P antae		O rch ides	O rch idaceae	B rassavo la	gardneri	B rassavo la gardneri	II
P antae		O rch ides	O rch idaceae	B rassavo la	m artana	B rassavo la m artana	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 14/20)

P antae		0 rch idaes	0 rch idaceae	B rassavo la	nodosa	B rassavo la nodosa	II
P antae		0 rch idaes	0 rch idaceae	B rassavo la	perr n ii	B rassavo la perr n ii	II
P antae		0 rch idaes	0 rch idaceae	B rassavo la	retusa	B rassavo la retusa	II
P antae		0 rch idaes	0 rch idaceae	B rassavo la	tubercu lata	B rassavo la tubercu lata	II
P antae		0 rch idaes	0 rch idaceae	B rassavo la	venosa	B rassavo la venosa	II
P antae		0 rch idaes	0 rch idaceae	B rass a	angustilab a	B rass a angustilab a	II
P antae		0 rch idaes	0 rch idaceae	B rass a	arachno dea	B rass a arachno dea	II
P antae		0 rch idaes	0 rch idaceae	B rass a	b dens	B rass a b dens	II
P antae		0 rch idaes	0 rch idaceae	B rass a	caudata	B rass a caudata	II
P antae		0 rch idaes	0 rch idaceae	B rass a	ch bro l uca	B rass a ch bro l uca	II
P antae		0 rch idaes	0 rch idaceae	B rass a	huebner i	B rass a huebner i	II
P antae		0 rch idaes	0 rch idaceae	B rass a	gnapuana	B rass a gnapuana	II
P antae		0 rch idaes	0 rch idaceae	B rass a	lanceana	B rass a lanceana	II
P antae		0 rch idaes	0 rch idaceae	B rass a	law renceana	B rass a law renceana	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	adam antnum	B u bophy lum adam antnum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	araneae	B u bophy lum araneae	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	atropurpureum	B u bophy lum atropurpureum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	barbatum	B u bophy lum barbatum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	b dentatum	B u bophy lum b dentatum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	boudetana	B u bophy lum boudetana	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	bracteo latum	B u bophy lum bracteo latum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	cam pos-porto i	B u bophy lum cam pos-porto i	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	cantagalense	B u bophy lum cantagalense	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	ch brog bssum	B u bophy lum ch brog bssum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	ch bropterum	B u bophy lum ch bropterum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	c ilu lae	B u bophy lum c ilu lae	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	c aussen i	B u bophy lum c aussen i	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	cogn aux anum	B u bophy lum cogn aux anum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	corrae	B u bophy lum corrae	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	crbb anum	B u bophy lum crbb anum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	dusen ii	B u bophy lum dusen ii	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	epiphytum	B u bophy lum epiphytum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	exalatum	B u bophy lum exalatum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	filifolium	B u bophy lum filifolium	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	geraense	B u bophy lum geraense	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	gbdatum	B u bophy lum gbdatum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	glutinosum	B u bophy lum glutinosum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	gomesii	B u bophy lum gomesii	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	granubsum	B u bophy lum granubsum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	insectiferum	B u bophy lum insectiferum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	involutum	B u bophy lum involutum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	panemense	B u bophy lum panemense	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	aguarahyvae	B u bophy lum guarahyvae	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	kautskyi	B u bophy lum kautskyi	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	kegelii	B u bophy lum kegelii	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	lachatum	B u bophy lum lachatum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	bngpetalum	B u bophy lum bngpetalum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	bngspcatum	B u bophy lum bngspcatum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	uederwattii	B u bophy lum uederwattii	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	lundanum	B u bophy lum lundanum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	macroceras	B u bophy lum macroceras	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	machadenia	B u bophy lum machadenia	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	melebi	B u bophy lum melebi	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	mentosum	B u bophy lum mentosum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	micranthum	B u bophy lum micranthum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	micropetaliforme	B u bophy lum micropetaliforme	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	mirandanum	B u bophy lum mirandanum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	micronifolium	B u bophy lum micronifolium	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	napeili	B u bophy lum napeili	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	napelbides	B u bophy lum napelbides	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	nemorosum	B u bophy lum nemorosum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	ochraceum	B u bophy lum ochraceum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	oerstedii	B u bophy lum oerstedii	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	pabstii	B u bophy lum pabstii	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	paranaense	B u bophy lum paranaense	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	perii	B u bophy lum perii	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	perpendiculare	B u bophy lum perpendiculare	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	pilosum	B u bophy lum pilosum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	proencai	B u bophy lum proencai	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	punctatum	B u bophy lum punctatum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	quadricebr	B u bophy lum quadricebr	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	quadriseptum	B u bophy lum quadriseptum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	regnelii	B u bophy lum regnelii	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	ricabonei	B u bophy lum ricabonei	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	rorimense	B u bophy lum rorimense	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	rupticola	B u bophy lum rupticola	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	sanderianum	B u bophy lum sanderianum	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	sturmhoefelii	B u bophy lum sturmhoefelii	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	teresense	B u bophy lum teresense	II
P antae		0 rch idaes	0 rch idaceae	B u bophy lum	tripetalum	B u bophy lum tripetalum	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 15/20)

P antae		0 rch idabs	0 rch idaceae	Bu bophyllum	vaughanii	Bu bophyllum vaughanii	II
P antae		0 rch idabs	0 rch idaceae	Bu bophyllum	warmingianum	Bu bophyllum warmingianum	II
P antae		0 rch idabs	0 rch idaceae	Bu bophyllum	weddellii	Bu bophyllum weddellii	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	acubatum	Catase tum acubatum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	abovirens	Catase tum abovirens	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	arpuanense	Catase tum arpuanense	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	atratum	Catase tum atratum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	barbatum	Catase tum barbatum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	bergothianum	Catase tum bergothianum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	backii	Catase tum backii	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	boyi	Catase tum boyi	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	brachybulbon	Catase tum brachybulbon	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	calbsum	Catase tum calbsum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	caputnum	Catase tum caputnum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	carolinianum	Catase tum carolinianum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	cernuum	Catase tum cernuum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	collare	Catase tum collare	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	complanatum	Catase tum complanatum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	confusum	Catase tum confusum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	costatum	Catase tum costatum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	cristatum	Catase tum cristatum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	cucullatum	Catase tum cucullatum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	deitodeum	Catase tum deitodeum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	denticulatum	Catase tum denticulatum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	disco br	Catase tum disco br	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	dunstervillei	Catase tum dunstervillei	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	faustii	Catase tum faustii	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	ferox	Catase tum ferox	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	finbratum	Catase tum finbratum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	franchianum	Catase tum franchianum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	gabatum	Catase tum gabatum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	gabritum	Catase tum gabritum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	garnettianum	Catase tum garnettianum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	georgii	Catase tum georgii	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	gadatorum	Catase tum gadatorum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	gbbifbrum	Catase tum gbbifbrum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	gnomus	Catase tum gnomus	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	hookeri	Catase tum hookeri	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	huebneri	Catase tum huebneri	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	imperab	Catase tum imperab	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	intermedium	Catase tum intermedium	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	issanensis	Catase tum issanensis	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	iruense	Catase tum iruense	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	keberianum	Catase tum keberianum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	kraenzlinianum	Catase tum kraenzlinianum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	lanceanum	Catase tum lanceanum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	laniferum	Catase tum laniferum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	lemosii	Catase tum lemosii	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	lingiferum	Catase tum lingiferum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	bngifilium	Catase tum bngifilium	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	bngipes	Catase tum bngipes	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	lurdum	Catase tum lurdum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	macrocarpum	Catase tum macrocarpum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	maranhense	Catase tum maranhense	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	matogrossense	Catase tum matogrossense	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	matosianum	Catase tum matosianum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	meae	Catase tum meae	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	micranthum	Catase tum micranthum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	mo curanum	Catase tum mo curanum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	mojuense	Catase tum mojuense	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	multifidum	Catase tum multifidum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	ollare	Catase tum ollare	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	omithoides	Catase tum omithoides	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	osculatum	Catase tum osculatum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	paraguayense	Catase tum paraguayense	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	pileatum	Catase tum pileatum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	planiceps	Catase tum planiceps	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	pohlanum	Catase tum pohlanum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	polydactylon	Catase tum polydactylon	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	puhrium	Catase tum puhrium	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	punctatum	Catase tum punctatum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	purum	Catase tum purum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	quadridentis	Catase tum quadridentis	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	randii	Catase tum randii	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	regnellii	Catase tum regnellii	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	reichenbachianum	Catase tum reichenbachianum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	richteri	Catase tum richteri	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	riularium	Catase tum riularium	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	rofeianum	Catase tum rofeianum	II
P antae		0 rch idabs	0 rch idaceae	Catase tum	rondonense	Catase tum rondonense	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 16/20)

P antae		0 rch idabs	0 rch idaceae	Catasetum	rooseveltianum	Catasetum rooseveltianum	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	roseo-abum	Catasetum roseo-abum	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	saccatum	Catasetum saccatum	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	schmidtianum	Catasetum schmidtianum	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	semicirculatum	Catasetum semicirculatum	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	sphosum	Catasetum sphosum	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	spitzii	Catasetum spitzii	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	taguariense	Catasetum taguariense	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	tapiriceps	Catasetum tapiriceps	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	taquariense	Catasetum taquariense	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	tigrinum	Catasetum tigrinum	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	tridon	Catasetum tridon	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	trula	Catasetum trula	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	turbatum	Catasetum turbatum	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	turruense	Catasetum turruense	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	uncatum	Catasetum uncatum	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	vbritle	Catasetum vbritle	II
P antae		0 rch idabs	0 rch idaceae	Catasetum	vhaceum	Catasetum vhaceum	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	acandae	Cattleya acandae	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	amethystoglossa	Cattleya amethystoglossa	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	araguaensis	Cattleya araguaensis	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	bcoibr	Cattleya bcoibr	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	caesiana	Cattleya caesiana	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	dayana	Cattleya dayana	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	dobera	Cattleya dobera	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	dominiana	Cattleya dominiana	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	ehorado	Cattleya ehorado	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	ebngata	Cattleya ebngata	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	forbesii	Cattleya forbesii	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	granulosa	Cattleya granulosa	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	guttata	Cattleya guttata	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	harrisoniana	Cattleya harrisoniana	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	intermedia	Cattleya intermedia	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	kerrii	Cattleya kerrii	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	labata	Cattleya labata	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	leopoldii	Cattleya leopoldii	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	bddgesii	Cattleya bddgesii	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	luteola	Cattleya luteola	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	nobilor	Cattleya nobilor	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	patrocinii	Cattleya patrocinii	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	porphyroglossa	Cattleya porphyroglossa	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	schilleriana	Cattleya schilleriana	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	schofieldiana	Cattleya schofieldiana	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	tenuis	Cattleya tenuis	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	velutina	Cattleya velutina	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	vobacea	Cattleya vobacea	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	wakeriana	Cattleya wakeriana	II
P antae		0 rch idabs	0 rch idaceae	Cattleya	warneri	Cattleya warneri	II
P antae		0 rch idabs	0 rch idaceae	Caularthron	bcornutum	Caularthron bcornutum	II
P antae		0 rch idabs	0 rch idaceae	Centroglossa	castelensis	Centroglossa castelensis	II
P antae		0 rch idabs	0 rch idaceae	Cbwsa	amazonica	Cbwsa amazonica	II
P antae		0 rch idabs	0 rch idaceae	Cbwsa	warszewiczii	Cbwsa warszewiczii	II
P antae		0 rch idabs	0 rch idaceae	Cochleanthes	amazonica	Cochleanthes amazonica	II
P antae		0 rch idabs	0 rch idaceae	Cochleanthes	candida	Cochleanthes candida	II
P antae		0 rch idabs	0 rch idaceae	Cochleanthes	fabelliformis	Cochleanthes fabelliformis	II
P antae		0 rch idabs	0 rch idaceae	Cochleanthes	walibana	Cochleanthes walibana	II
P antae		0 rch idabs	0 rch idaceae	Comparettia	coccoloba	Comparettia coccoloba	II
P antae		0 rch idabs	0 rch idaceae	Comparettia	fabata	Comparettia fabata	II
P antae		0 rch idabs	0 rch idaceae	Constantia	australis	Constantia australis	II
P antae		0 rch idabs	0 rch idaceae	Constantia	cipoensis	Constantia cipoensis	II
P antae		0 rch idabs	0 rch idaceae	Constantia	cristinae	Constantia cristinae	II
P antae		0 rch idabs	0 rch idaceae	Constantia	macroscopica	Constantia macroscopica	II
P antae		0 rch idabs	0 rch idaceae	Constantia	rupestris	Constantia rupestris	II
P antae		0 rch idabs	0 rch idaceae	Cryptarrhena	brasiliensis	Cryptarrhena brasiliensis	II
P antae		0 rch idabs	0 rch idaceae	Cryptarrhena	lunata	Cryptarrhena lunata	II
P antae		0 rch idabs	0 rch idaceae	Cynoches	chbrochibn	Cynoches chbrochibn	II
P antae		0 rch idabs	0 rch idaceae	Cynoches	haagii	Cynoches haagii	II
P antae		0 rch idabs	0 rch idaceae	Cynoches	bddgesii	Cynoches bddgesii	II
P antae		0 rch idabs	0 rch idaceae	Cynoches	manoeae	Cynoches manoeae	II
P antae		0 rch idabs	0 rch idaceae	Cynoches	pentadactybn	Cynoches pentadactybn	II
P antae		0 rch idabs	0 rch idaceae	Dryadella	auriculigera	Dryadella auriculigera	II
P antae		0 rch idabs	0 rch idaceae	Dryadella	aviceps	Dryadella aviceps	II
P antae		0 rch idabs	0 rch idaceae	Dryadella	edwallii	Dryadella edwallii	II
P antae		0 rch idabs	0 rch idaceae	Dryadella	gnomes-ferreirae	Dryadella gnomes-ferreirae	II
P antae		0 rch idabs	0 rch idaceae	Dryadella	kautskyi	Dryadella kautskyi	II
P antae		0 rch idabs	0 rch idaceae	Dryadella	lilliputana	Dryadella lilliputana	II
P antae		0 rch idabs	0 rch idaceae	Dryadella	melbi	Dryadella melbi	II
P antae		0 rch idabs	0 rch idaceae	Dryadella	obrieniana	Dryadella obrieniana	II
P antae		0 rch idabs	0 rch idaceae	Dryadella	paranaensis	Dryadella paranaensis	II
P antae		0 rch idabs	0 rch idaceae	Dryadella	zebrina	Dryadella zebrina	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 17/20)

P antae		0 rch idabs	0 rch idaceae	E leanthus	In ifo lius	E leanthus in ifo lius	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	acuta	Encyc la acuta	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	advena	Encyc la advena	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	alagoensis	Encyc la alagoensis	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	abopurpurea	Encyc la abopurpurea	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	aboxanthina	Encyc la aboxanthina	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	alem an ii	Encyc la alem an ii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	allem ano ides	Encyc la allem ano ides	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	am bta	Encyc la am bta	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	andrich ii	Encyc la andrich ii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	apuhuensis	Encyc la apuhuensis	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	argentnensis	Encyc la argentnensis	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	baculis	Encyc la baculis	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	bracteata	Encyc la bracteata	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	bragranÁ § ae	Encyc la bragranÁ § ae	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	burb-m arxii	Encyc la burb-m arxii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	caetensis	Encyc la caetensis	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	caam ara	Encyc la caam ara	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	cam pos-portoi	Encyc la cam pos-portoi	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	capartiana	Encyc la capartiana	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	cardm ii	Encyc la cardm ii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	chapadensis	Encyc la chapadensis	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	conchaech ia	Encyc la conchaech ia	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	confusa	Encyc la confusa	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	dchrom a	Encyc la dchrom a	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	doerngii	Encyc la doerngii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	du trai	Encyc la du trai	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	duveen ii	Encyc la duveen ii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	ens iform is	Encyc la ens iform is	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	euosm a	Encyc la euosm a	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	fares ana	Encyc la fares ana	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	fausta	Encyc la fausta	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	fabelifera	Encyc la fabelifera	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	flava	Encyc la flava	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	fow le i	Encyc la fow le i	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	fragrans	Encyc la fragrans	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	galpavna	Encyc la galpavna	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	gh ilanyi	Encyc la gh ilanyi	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	gum acea	Encyc la gum acea	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	gonzabz ii	Encyc la gonzabz ii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	goyazensis	Encyc la goyazensis	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	gran tica	Encyc la gran tica	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	grav da	Encyc la grav da	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	hoehnei	Encyc la hoehnei	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	holandae	Encyc la holandae	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	huebneri	Encyc la huebneri	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	inversa	Encyc la inversa	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	onoph bba	Encyc la onoph bba	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	onosm a	Encyc la onosm a	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	ivonae	Encyc la ivonae	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	kautskyi	Encyc la kautskyi	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	latpetala	Encyc la latpetala	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	laxa	Encyc la laxa	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	linearifolides	Encyc la linearifolides	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	bng fio la	Encyc la bng fio la	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	lutzenbergerii	Encyc la lutzenbergerii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	m apuerae	Encyc la m apuerae	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	m egaantha	Encyc la m egaantha	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	m croxathna	Encyc la m croxathna	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	m oo en ii	Encyc la m oo en ii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	onc idb ides	Encyc la onc idb ides	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	osm antha	Encyc la osm antha	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	oxphyla	Encyc la oxphyla	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	pachyantha	Encyc la pachyantha	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	papilo	Encyc la papilo	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	patens	Encyc la patens	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	punctifera	Encyc la punctifera	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	pygm aea	Encyc la pygm aea	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	randii	Encyc la randii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	regnellana	Encyc la regnellana	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	schm dtii	Encyc la schm dtii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	se de lii	Encyc la se de lii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	sess ilifbra	Encyc la sess ilifbra	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	sp r itusanc tensis	Encyc la sp r itusanc tensis	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	suzanensis	Encyc la suzanensis	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	tarum ana	Encyc la tarum ana	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	tgrna	Encyc la tgrna	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	trpartita	Encyc la trpartita	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	unaensis	Encyc la unaensis	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	ve lbozana	Encyc la ve lbozana	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 18/20)

P antae		0 rch idabs	0 rch idaceae	Encyc la	vespa	Encyc la vespa	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	viridifbra	Encyc la viridifbra	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	w idgren ii	Encyc la w idgren ii	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	xerophytca	Encyc la xerophytca	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	xpherbdes	Encyc la xpherbdes	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	xuxana	Encyc la xuxana	II
P antae		0 rch idabs	0 rch idaceae	Encyc la	yauperyens s	Encyc la yauperyens s	II
P antae		0 rch idabs	0 rch idaceae	Epidendrum	revo lutum	Epidendrum revo lutum	II
P antae		0 rch idabs	0 rch idaceae	Epidendrum	rigidum	Epidendrum rigidum	II
P antae		0 rch idabs	0 rch idaceae	Epidendrum	sm aragdim um	Epidendrum sm aragdim um	II
P antae		0 rch idabs	0 rch idaceae	Eriops s	bibba	Eriops s bibba	II
P antae		0 rch idabs	0 rch idaceae	Gom esa	grac ils	Gom esa grac ils	II
P antae		0 rch idabs	0 rch idaceae	Gongora	atropurpurea	Gongora atropurpurea	II
P antae		0 rch idabs	0 rch idaceae	Gongora	bufon a	Gongora bufon a	II
P antae		0 rch idabs	0 rch idaceae	Gongora	m acu lta	Gongora m acu lta	II
P antae		0 rch idabs	0 rch idaceae	Gongora	m nax	Gongora m nax	II
P antae		0 rch idabs	0 rch idaceae	Gongora	n grita	Gongora n grita	II
P antae		0 rch idabs	0 rch idaceae	Gongora	pb ochrom a	Gongora pb ochrom a	II
P antae		0 rch idabs	0 rch idaceae	Gongora	qu nquenerv s	Gongora qu nquenerv s	II
P antae		0 rch idabs	0 rch idaceae	Habenara	fbrbunda	Habenara fbrbunda	II
P antae		0 rch idabs	0 rch idaceae	Huntbya	m e bagris	Huntbya m e bagris	II
P antae		0 rch idabs	0 rch idaceae	Koe lenste n a	eburnea	Koe lenste n a eburnea	II
P antae		0 rch idabs	0 rch idaceae	Koe lenste n a	ke lbrana	Koe lenste n a ke lbrana	II
P antae		0 rch idabs	0 rch idaceae	Lae la	a borii	Lae la a borii	II
P antae		0 rch idabs	0 rch idaceae	Lae la	angereri	Lae la angereri	II
P antae		0 rch idabs	0 rch idaceae	Lae la	bah ens s	Lae la bah ens s	II
P antae		0 rch idabs	0 rch idaceae	Lae la	b lum ensche n ii	Lae la b lum ensche n ii	II
P antae		0 rch idabs	0 rch idaceae	Lae la	brade i	Lae la brade i	II
P antae		0 rch idabs	0 rch idaceae	Lae la	brigeri	Lae la brigeri	II
P antae		0 rch idabs	0 rch idaceae	Lae la	cardm ii	Lae la cardm ii	II
P antae		0 rch idabs	0 rch idaceae	Lae la	catt eyodes	Lae la catt eyodes	II
P antae		0 rch idabs	0 rch idaceae	Lae la	cau bescens	Lae la cau bescens	II
P antae		0 rch idabs	0 rch idaceae	Lae la	c nnabar n a	Lae la c nnabar n a	II
P antae		0 rch idabs	0 rch idaceae	Lae la	c nnam om ea	Lae la c nnam om ea	II
P antae		0 rch idabs	0 rch idaceae	Lae la	cow an ii	Lae la cow an ii	II
P antae		0 rch idabs	0 rch idaceae	Lae la	crispa	Lae la crispa	II
P antae		0 rch idabs	0 rch idaceae	Lae la	crispata	Lae la crispata	II
P antae		0 rch idabs	0 rch idaceae	Lae la	crispib a	Lae la crispib a	II
P antae		0 rch idabs	0 rch idaceae	Lae la	dayana	Lae la dayana	II
P antae		0 rch idabs	0 rch idaceae	Lae la	duveen ii	Lae la duveen ii	II
P antae		0 rch idabs	0 rch idaceae	Lae la	e gans	Lae la e gans	II
P antae		0 rch idabs	0 rch idaceae	Lae la	endsfe liz ii	Lae la endsfe liz ii	II
P antae		0 rch idabs	0 rch idaceae	Lae la	esa tueana	Lae la esa tueana	II
P antae		0 rch idabs	0 rch idaceae	Lae la	espr ito- santens s	Lae la espr ito- santens s	II
P antae		0 rch idabs	0 rch idaceae	Lae la	fde lens s	Lae la fde lens s	II
P antae		0 rch idabs	0 rch idaceae	Lae la	flava	Lae la flava	II
P antae		0 rch idabs	0 rch idaceae	Lae la	gardneri	Lae la gardneri	II
P antae		0 rch idabs	0 rch idaceae	Lae la	gh illany i	Lae la gh illany i	II
P antae		0 rch idabs	0 rch idaceae	Lae la	g beden ana	Lae la g beden ana	II
P antae		0 rch idabs	0 rch idaceae	Lae la	gotto ana	Lae la gotto ana	II
P antae		0 rch idabs	0 rch idaceae	Lae la	grac ils	Lae la grac ils	II
P antae		0 rch idabs	0 rch idaceae	Lae la	grand fbra	Lae la grand fbra	II
P antae		0 rch idabs	0 rch idaceae	Lae la	grand s	Lae la grand s	II
P antae		0 rch idabs	0 rch idaceae	Lae la	harpophy la	Lae la harpophy la	II
P antae		0 rch idabs	0 rch idaceae	Lae la	h spdu l a	Lae la h spdu l a	II
P antae		0 rch idabs	0 rch idaceae	Lae la	itam bana	Lae la itam bana	II
P antae		0 rch idabs	0 rch idaceae	Lae la	pngheana	Lae la pngheana	I
P antae		0 rch idabs	0 rch idaceae	Lae la	kautskyi	Lae la kautskyi	II
P antae		0 rch idabs	0 rch idaceae	Lae la	kett ana	Lae la kett ana	II
P antae		0 rch idabs	0 rch idaceae	Lae la	liac na	Lae la liac na	II
P antae		0 rch idabs	0 rch idaceae	Lae la	liputana	Lae la liputana	II
P antae		0 rch idabs	0 rch idaceae	Lae la	lbata	Lae la lbata	I
P antae		0 rch idabs	0 rch idaceae	Lae la	bngpes	Lae la bngpes	II
P antae		0 rch idabs	0 rch idaceae	Lae la	lucas ana	Lae la lucas ana	II
P antae		0 rch idabs	0 rch idaceae	Lae la	lundii	Lae la lundii	II
P antae		0 rch idabs	0 rch idaceae	Lae la	m antique rae	Lae la m antique rae	II
P antae		0 rch idabs	0 rch idaceae	Lae la	m ilberi	Lae la m ilberi	II
P antae		0 rch idabs	0 rch idaceae	Lae la	m kta	Lae la m kta	II
P antae		0 rch idabs	0 rch idaceae	Lae la	pabstii	Lae la pabstii	II
P antae		0 rch idabs	0 rch idaceae	Lae la	perrn ii	Lae la perrn ii	II
P antae		0 rch idabs	0 rch idaceae	Lae la	pfsteri	Lae la pfsteri	II
P antae		0 rch idabs	0 rch idaceae	Lae la	praestans	Lae la praestans	II
P antae		0 rch idabs	0 rch idaceae	Lae la	pum ila	Lae la pum ila	II
P antae		0 rch idabs	0 rch idaceae	Lae la	purpurata	Lae la purpurata	II
P antae		0 rch idabs	0 rch idaceae	Lae la	reghae	Lae la reghae	II
P antae		0 rch idabs	0 rch idaceae	Lae la	sangu ibba	Lae la sangu ibba	II
P antae		0 rch idabs	0 rch idaceae	Lae la	sncorana	Lae la sncorana	II
P antae		0 rch idabs	0 rch idaceae	Lae la	spectabilis	Lae la spectabilis	II
P antae		0 rch idabs	0 rch idaceae	Lae la	tenebrosa	Lae la tenebrosa	II
P antae		0 rch idabs	0 rch idaceae	Lae la	teretcaulis	Lae la teretcaulis	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 19/20)

P antae		0 rch idabs	0 rch idaceae	Lae lia	virens	Lae lia virens	II
P antae		0 rch idabs	0 rch idaceae	Lae lia	xantha	Lae lia xantha	II
P antae		0 rch idabs	0 rch idaceae	Lepanthopsis	fbr pecten	Lepanthopsis fbr pecten	II
P antae		0 rch idabs	0 rch idaceae	Lepanthopsis	me lnantha	Lepanthopsis me lnantha	II
P antae		0 rch idabs	0 rch idaceae	Leptotes	bco br	Leptotes bco br	II
P antae		0 rch idabs	0 rch idaceae	Leptotes	pau ensis	Leptotes pau ensis	II
P antae		0 rch idabs	0 rch idaceae	Leptotes	tenu is	Leptotes tenu is	II
P antae		0 rch idabs	0 rch idaceae	Leptotes	un co br	Leptotes un co br	II
P antae		0 rch idabs	0 rch idaceae	Lockhartia	iahae	Lockhartia iahae	II
P antae		0 rch idabs	0 rch idaceae	Lockhartia	ludbunda	Lockhartia ludbunda	II
P antae		0 rch idabs	0 rch idaceae	Lycaste	m acrobu bon	Lycaste m acrobu bon	II
P antae		0 rch idabs	0 rch idaceae	Lycaste	m acrophylla	Lycaste m acrophylla	II
P antae		0 rch idabs	0 rch idaceae	M asdevalla	cuprea	M asdevalla cuprea	II
P antae		0 rch idabs	0 rch idaceae	M asdevalla	curtipes	M asdevalla curtipes	II
P antae		0 rch idabs	0 rch idaceae	M asdevalla	dsc o dea	M asdevalla dsc o dea	II
P antae		0 rch idabs	0 rch idaceae	M asdevalla	in fracta	M asdevalla in fracta	II
P antae		0 rch idabs	0 rch idaceae	M asdevalla	m nuta	M asdevalla m nuta	II
P antae		0 rch idabs	0 rch idaceae	M asdevalla	norae	M asdevalla norae	II
P antae		0 rch idabs	0 rch idaceae	M asdevalla	obscurans	M asdevalla obscurans	II
P antae		0 rch idabs	0 rch idaceae	M asdevalla	osc itans	M asdevalla osc itans	II
P antae		0 rch idabs	0 rch idaceae	M asdevalla	spruce i	M asdevalla spruce i	II
P antae		0 rch idabs	0 rch idaceae	M asdevalla	vargas ii	M asdevalla vargas ii	II
P antae		0 rch idabs	0 rch idaceae	M asdevalla	wendlandiana	M asdevalla wendlandiana	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	bnotii	M ilton a bnotii	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	bluntii	M ilton a bluntii	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	castanea	M ilton a castanea	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	c bwesii	M ilton a c bwesii	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	cogn auxae	M ilton a cogn auxae	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	festiva	M ilton a festiva	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	flava	M ilton a flava	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	flavescens	M ilton a flavescens	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	lam arckeana	M ilton a lam arckeana	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	lucogbssa	M ilton a lucogbssa	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	odorata	M ilton a odorata	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	regne li	M ilton a regne li	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	rosna	M ilton a rosna	II
P antae		0 rch idabs	0 rch idaceae	M ilton a	spectabilis	M ilton a spectabilis	II
P antae		0 rch idabs	0 rch idaceae	N dem a	otton is	N dem a otton is	II
P antae		0 rch idabs	0 rch idaceae	O cto m e r a	carbana	O cto m e r a carbana	II
P antae		0 rch idabs	0 rch idaceae	O nc idum	ansiferum	O nc idum ansiferum	II
P antae		0 rch idabs	0 rch idaceae	O nc idum	bifolium	O nc idum bifolium	II
P antae		0 rch idabs	0 rch idaceae	O nc idum	c ilatum	O nc idum c ilatum	II
P antae		0 rch idabs	0 rch idaceae	O nc idum	bngcornum	O nc idum bngcornum	II
P antae		0 rch idabs	0 rch idaceae	O nc idum	phym atochium	O nc idum phym atochium	II
P antae		0 rch idabs	0 rch idaceae	Peristera	cerna	Peristera cerna	II
P antae		0 rch idabs	0 rch idaceae	Peristera	gutata	Peristera gutata	II
P antae		0 rch idabs	0 rch idaceae	Peristera	pendula	Peristera pendula	II
P antae		0 rch idabs	0 rch idaceae	Peristera	serrana	Peristera serrana	II
P antae		0 rch idabs	0 rch idaceae	Phragm pedum	kbtzschianum	Phragm pedum kbtzschianum	I
P antae		0 rch idabs	0 rch idaceae	Phragm pedum	indlyanum	Phragm pedum indlyanum	I
P antae		0 rch idabs	0 rch idaceae	Phragm pedum	sargentanum	Phragm pedum sargentanum	I
P antae		0 rch idabs	0 rch idaceae	Phragm pedum	vittatum	Phragm pedum vittatum	I
P antae		0 rch idabs	0 rch idaceae	Phym atidium	im ae	Phym atidium im ae	II
P antae		0 rch idabs	0 rch idaceae	Phym atidium	m icrophyllum	Phym atidium m icrophyllum	II
P antae		0 rch idabs	0 rch idaceae	P eurothallis	githangnea	P eurothallis githangnea	II
P antae		0 rch idabs	0 rch idaceae	P eurothallis	hym enantha	P eurothallis hym enantha	II
P antae		0 rch idabs	0 rch idaceae	P eurothallis	jacarepaguensis	P eurothallis jacarepaguensis	II
P antae		0 rch idabs	0 rch idaceae	P eurothallis	lichenophila	P eurothallis lichenophila	II
P antae		0 rch idabs	0 rch idaceae	P onera	strata	P onera strata	II
P antae		0 rch idabs	0 rch idaceae	Prescottia	olgantha	Prescottia olgantha	II
P antae		0 rch idabs	0 rch idaceae	Prescottia	plantanea	Prescottia plantanea	II
P antae		0 rch idabs	0 rch idaceae	Pseudoelia	corcovadensis	Pseudoelia corcovadensis	II
P antae		0 rch idabs	0 rch idaceae	Rauhelia	silvana	Rauhelia silvana	II
P antae		0 rch idabs	0 rch idaceae	Rodriguezia	bifbra	Rodriguezia bifbra	II
P antae		0 rch idabs	0 rch idaceae	Rodriguezia	candida	Rodriguezia candida	II
P antae		0 rch idabs	0 rch idaceae	Rodriguezia	camea	Rodriguezia camea	II
P antae		0 rch idabs	0 rch idaceae	Rodriguezia	decora	Rodriguezia decorata	II
P antae		0 rch idabs	0 rch idaceae	Rodriguezia	lanceolata	Rodriguezia lanceolata	II
P antae		0 rch idabs	0 rch idaceae	Scaphybtis	sigm o dea	Scaphybtis sigm o dea	II
P antae		0 rch idabs	0 rch idaceae	Schomburgkia	crispa	Schomburgkia crispa	II
P antae		0 rch idabs	0 rch idaceae	Schomburgkia	marginata	Schomburgkia marginata	II
P antae		0 rch idabs	0 rch idaceae	Sigm atostix	amazonca	Sigm atostix amazonca	II
P antae		0 rch idabs	0 rch idaceae	Sophrontella	violacea	Sophrontella violacea	II
P antae		0 rch idabs	0 rch idaceae	Sophrontis	acucensis	Sophrontis acucensis	II
P antae		0 rch idabs	0 rch idaceae	Sophrontis	bco br	Sophrontis bco br	II
P antae		0 rch idabs	0 rch idaceae	Sophrontis	cemua	Sophrontis cemua	II
P antae		0 rch idabs	0 rch idaceae	Sophrontis	cocinea	Sophrontis cocinea	II
P antae		0 rch idabs	0 rch idaceae	Sophrontis	antiquerae	Sophrontis antiquerae	II
P antae		0 rch idabs	0 rch idaceae	Sophrontis	pterocarpa	Sophrontis pterocarpa	II
P antae		0 rch idabs	0 rch idaceae	Sophrontis	pygmaea	Sophrontis pygmaea	II

Source: Species+, <http://www.speciesplus.net/>

Table A3 List of CITES registered animals in Brazil (continued, 20/20)

P antae		0 rch idales	0 rch idaceae	Sophronis	wittiana	Sophronis wittiana	II
P antae		0 rch idales	0 rch idaceae	Stanhopea	candida	Stanhopea candida	II
P antae		0 rch idales	0 rch idaceae	Stanhopea	grandiflora	Stanhopea grandiflora	II
P antae		0 rch idales	0 rch idaceae	Stanhopea	graveolens	Stanhopea graveolens	II
P antae		0 rch idales	0 rch idaceae	Stanhopea	insignis	Stanhopea insignis	II
P antae		0 rch idales	0 rch idaceae	Stanhopea	oculata	Stanhopea oculata	II
P antae		0 rch idales	0 rch idaceae	Stanhopea	tigrina	Stanhopea tigrina	II
P antae		0 rch idales	0 rch idaceae	Stanhopea	warszewicziana	Stanhopea warszewicziana	II
P antae		0 rch idales	0 rch idaceae	Trichopilia	laxa	Trichopilia laxa	II
P antae		0 rch idales	0 rch idaceae	Trigonidium	acuminatum	Trigonidium acuminatum	II
P antae		0 rch idales	0 rch idaceae	Trigonidium	turbatum	Trigonidium turbatum	II
P antae		0 rch idales	0 rch idaceae	Triphora	surnamensis	Triphora surnamensis	II
P antae		0 rch idales	0 rch idaceae	Wulfschlegelia	aphylla	Wulfschlegelia aphylla	II
P antae		0 rch idales	0 rch idaceae	Wulfschlegelia	caabarata	Wulfschlegelia caabarata	II
P antae		0 rch idales	0 rch idaceae	Zygostates	aderaboana	Zygostates aderaboana	II
P antae		0 rch idales	0 rch idaceae	Zygostates	aleni	Zygostates aleni	II
P antae		Cycadales	Zamiaceae	Zamia	amazonum	Zamia amazonum	II
P antae		Cycadales	Zamiaceae	Zamia	ecointei	Zamia ecointei	II
P antae		Cycadales	Zamiaceae	Zamia	ubi	Zamia ubi	II
P antae		Sapindales	Zygophyllaceae	Buhesia	sarmientoi	Buhesia sarmientoi	II

Source: Species+, <http://www.speciesplus.net/>

Appendix 4 List of CMS-listed animals in Brazil

Table A4 List of CMS-listed animals in Brazil (1/4)

Class	Order	Family	Genus	ScientificN	Listing
Mammalia	Carnivora	Otariidae	Arctocephalus	Arctocephalus ad	II
Mammalia	Carnivora	Otariidae	Otaria	Otaria flavescens	II
Mammalia	Cetacea	Balaenopteridae	Megaptera	Megaptera novaeangliae	
Mammalia	Cetacea	Balaenopteridae	Megaptera	Megaptera novae	I
Mammalia	Cetacea	Balaenopteridae	Megaptera	Megaptera novaeangliae	
Mammalia	Cetacea	Delphinidae	Cephalorhynchus	Cephalorhynchus	II
Mammalia	Cetacea	Delphinidae	Globicephala	Globicephala melas	
Mammalia	Cetacea	Delphinidae	Globicephala	Globicephala melas	
Mammalia	Cetacea	Delphinidae	Globicephala	Globicephala melas	
Mammalia	Cetacea	Delphinidae	Globicephala	Globicephala mel	II
Mammalia	Cetacea	Delphinidae	Globicephala	Globicephala melas	
Mammalia	Cetacea	Delphinidae	Grampus	Grampus griseus	
Mammalia	Cetacea	Delphinidae	Grampus	Grampus griseus	
Mammalia	Cetacea	Delphinidae	Grampus	Grampus griseus	II
Mammalia	Cetacea	Delphinidae	Grampus	Grampus griseus	
Mammalia	Cetacea	Delphinidae	Lagenorhynchus	Lagenorhynchus h	II
Mammalia	Cetacea	Delphinidae	Lagenorhynchus	Lagenorhynchus hosei	
Mammalia	Cetacea	Delphinidae	Lagenorhynchus	Lagenorhynchus hosei	
Mammalia	Cetacea	Delphinidae	Orcinus	Orcinus orca	
Mammalia	Cetacea	Delphinidae	Orcinus	Orcinus orca	II
Mammalia	Cetacea	Delphinidae	Orcinus	Orcinus orca	
Mammalia	Cetacea	Delphinidae	Orcinus	Orcinus orca	
Mammalia	Cetacea	Delphinidae	Sotalia	Sotalia fluviatilis	II
Mammalia	Cetacea	Delphinidae	Sotalia	Sotalia guianensis	II
Mammalia	Cetacea	Delphinidae	Stenella	Stenella attenua	II
Mammalia	Cetacea	Delphinidae	Stenella	Stenella attenuata	
Mammalia	Cetacea	Delphinidae	Stenella	Stenella clymene	
Mammalia	Cetacea	Delphinidae	Stenella	Stenella clymen	II
Mammalia	Cetacea	Delphinidae	Stenella	Stenella coeruleoba	
Mammalia	Cetacea	Delphinidae	Stenella	Stenella coerule	II
Mammalia	Cetacea	Delphinidae	Stenella	Stenella coeruleoba	
Mammalia	Cetacea	Delphinidae	Stenella	Stenella coeruleoba	
Mammalia	Cetacea	Delphinidae	Stenella	Stenella coeruleoba	
Mammalia	Cetacea	Delphinidae	Stenella	Stenella longirostris	
Mammalia	Cetacea	Delphinidae	Stenella	Stenella longiro	II
Mammalia	Cetacea	Delphinidae	Stenella	Stenella longirostris	
Mammalia	Cetacea	Iniidae	Inia	Inia geoffrensis	II
Mammalia	Cetacea	Iniidae	Pontoporia	Pontoporia blain	I/II
Mammalia	Cetacea	Physeteridae	Physeter	Physeter macrocephalus	
Mammalia	Cetacea	Physeteridae	Physeter	Physeter macrocephalus	
Mammalia	Cetacea	Physeteridae	Physeter	Physeter macrod	I/II
Mammalia	Chiroptera	Molossidae	Tadarida	Tadarida brasili	I
Mammalia	Sirenia	Trichechidae	Trichechus	Trichechus inung	II
Mammalia	Sirenia	Trichechidae	Trichechus	Trichechus man	I/II
Aves	Anseriformes	Anatidae	Amazontia	Amazontia bras	II
Aves	Anseriformes	Anatidae	Anas	Anas cyanoptera	II
Aves	Anseriformes	Anatidae	Anas	Anas discors	II
Aves	Anseriformes	Anatidae	Anas	Anas flavirostris	II
Aves	Anseriformes	Anatidae	Anas	Anas sibilatrix	II
Aves	Anseriformes	Anatidae	Dendrocygna	Dendrocygna bicolor	
Aves	Anseriformes	Anatidae	Dendrocygna	Dendrocygna bic	II
Aves	Anseriformes	Anatidae	Dendrocygna	Dendrocygna vid	II
Aves	Anseriformes	Anatidae	Dendrocygna	Dendrocygna viduata	
Aves	Anseriformes	Anatidae	Netta	Netta erythroph	II
Aves	Anseriformes	Anatidae	Netta	Netta erythrophtha	II
Aves	Anseriformes	Anatidae	Oxyura	Oxyura vittata	II

Source: Species+, <http://www.speciesplus.net/>

Table A4 List of CMS-listed animals in Brazil (continued, 2/4)

Aves	Charadriiformes	Charadriidae	Charadrius	Charadrius falklandensis	II
Aves	Charadriiformes	Charadriidae	Charadrius	Charadrius modestus	II
Aves	Charadriiformes	Charadriidae	Charadrius	Charadrius semipalmatus	II
Aves	Charadriiformes	Charadriidae	Charadrius	Charadrius vociferans	II
Aves	Charadriiformes	Charadriidae	Charadrius	Charadrius wilsonia	II
Aves	Charadriiformes	Charadriidae	Oreopholus	Oreopholus ruficollis	II
Aves	Charadriiformes	Charadriidae	Pluvialis	Pluvialis dominicensis	II
Aves	Charadriiformes	Charadriidae	Pluvialis	Pluvialis squatarola	II
Aves	Charadriiformes	Charadriidae	Pluvialis	Pluvialis squatarola	II
Aves	Charadriiformes	Charadriidae	Vanellus	Vanellus chilensis	II
Aves	Charadriiformes	Laridae	Larus	Larus atlanticus	I
Aves	Charadriiformes	Laridae	Sterna	Sterna dougallii	
Aves	Charadriiformes	Laridae	Sterna	Sterna dougallii	II
Aves	Charadriiformes	Laridae	Sterna	Sterna paradisaea	II
Aves	Charadriiformes	Laridae	Sterna	Sterna paradisaea	
Aves	Charadriiformes	Recurvirostridae	Himantopus	Himantopus mexicanus	II
Aves	Charadriiformes	Scolopacidae	Arremonia	Arremonia interpres	
Aves	Charadriiformes	Scolopacidae	Arremonia	Arremonia interpres	II
Aves	Charadriiformes	Scolopacidae	Bartramia	Bartramia longicauda	II
Aves	Charadriiformes	Scolopacidae	Calidris	Calidris alba	
Aves	Charadriiformes	Scolopacidae	Calidris	Calidris alba	II
Aves	Charadriiformes	Scolopacidae	Calidris	Calidris bairdii	II
Aves	Charadriiformes	Scolopacidae	Calidris	Calidris canutus	II
Aves	Charadriiformes	Scolopacidae	Calidris	Calidris canutus	
Aves	Charadriiformes	Scolopacidae	Calidris	Calidris canutus	I/II
Aves	Charadriiformes	Scolopacidae	Calidris	Calidris fuscicollis	II
Aves	Charadriiformes	Scolopacidae	Calidris	Calidris melanotos	II
Aves	Charadriiformes	Scolopacidae	Calidris	Calidris minutilla	II
Aves	Charadriiformes	Scolopacidae	Calidris	Calidris pusilla	II
Aves	Charadriiformes	Scolopacidae	Catoptrophorus	Catoptrophorus	II
Aves	Charadriiformes	Scolopacidae	Gallinago	Gallinago paraguensis	II
Aves	Charadriiformes	Scolopacidae	Limnodromus	Limnodromus griseus	II
Aves	Charadriiformes	Scolopacidae	Limosa	Limosa haemastris	II
Aves	Charadriiformes	Scolopacidae	Limosa	Limosa lapponica	II
Aves	Charadriiformes	Scolopacidae	Limosa	Limosa lapponica	
Aves	Charadriiformes	Scolopacidae	Micropalama	Micropalama himalayensis	II
Aves	Charadriiformes	Scolopacidae	Numenius	Numenius borealis	I/II
Aves	Charadriiformes	Scolopacidae	Numenius	Numenius borealis	
Aves	Charadriiformes	Scolopacidae	Numenius	Numenius phaeopus	
Aves	Charadriiformes	Scolopacidae	Numenius	Numenius phaeopus	II
Aves	Charadriiformes	Scolopacidae	Phalaropus	Phalaropus fulicarius	
Aves	Charadriiformes	Scolopacidae	Phalaropus	Phalaropus fulicarius	II
Aves	Charadriiformes	Scolopacidae	Philomachus	Philomachus pugnax	
Aves	Charadriiformes	Scolopacidae	Philomachus	Philomachus pugnax	II
Aves	Charadriiformes	Scolopacidae	Steganopus	Steganopus tricolor	II
Aves	Charadriiformes	Scolopacidae	Tringa	Tringa flavipes	II
Aves	Charadriiformes	Scolopacidae	Tringa	Tringa macularia	II
Aves	Charadriiformes	Scolopacidae	Tringa	Tringa melanoleuca	II
Aves	Charadriiformes	Scolopacidae	Tringa	Tringa solitaria	II
Aves	Charadriiformes	Scolopacidae	Tryngites	Tryngites subruficollis	
Aves	Charadriiformes	Scolopacidae	Tryngites	Tryngites subruficollis	I/II
Aves	Iconiiformes	Threskiornithidae	Patalea	Patalea leucorodia	
Aves	Iconiiformes	Threskiornithidae	Patalea	Patalea leucorodia	II
Aves	Falconiformes	Cathartidae	Cathartes	Cathartes aura	II
Aves	Falconiformes	Cathartidae	Coragyps	Coragyps atratus	II
Aves	Falconiformes	Falconidae	Falco	Falco peregrinus	II
Aves	Falconiformes	Falconidae	Falco	Falco peregrinus	
Aves	Falconiformes	Pandionidae	Pandion	Pandion haliaetus	
Aves	Falconiformes	Pandionidae	Pandion	Pandion haliaetus	II
Aves	Passeriformes	Emberizidae	Sporophila	Sporophila cinerea	I/II

Source: Species+, <http://www.speciesplus.net/>

Table A4 List of CMS-listed animals in Brazil (continued, 3/4)

Aves	Passeriformes	Emberizidae	Sporophila	Sporophila cinnamomea
Aves	Passeriformes	Emberizidae	Sporophila	Sporophila hypochroma
Aves	Passeriformes	Emberizidae	Sporophila	Sporophila hypod I/II
Aves	Passeriformes	Emberizidae	Sporophila	Sporophila palustris
Aves	Passeriformes	Emberizidae	Sporophila	Sporophila palus I/II
Aves	Passeriformes	Emberizidae	Sporophila	Sporophila ruficollis
Aves	Passeriformes	Emberizidae	Sporophila	Sporophila ruficollis
Aves	Passeriformes	Emberizidae	Sporophila	Sporophila zelichii
Aves	Passeriformes	Emberizidae	Sporophila	Sporophila zelichii I/II
Aves	Passeriformes	Muscicapidae	Catharus	Catharus fuscescens II
Aves	Passeriformes	Muscicapidae	Catharus	Catharus minimus II
Aves	Passeriformes	Muscicapidae	Catharus	Catharus ustulatus II
Aves	Passeriformes	Muscicapidae	Turdus	Turdus amaurochlamys II
Aves	Passeriformes	Tyrannidae	Alectrurus	Alectrurus risora I/II
Aves	Passeriformes	Tyrannidae	Alectrurus	Alectrurus risora
Aves	Passeriformes	Tyrannidae	Alectrurus	Alectrurus tricolor I/II
Aves	Passeriformes	Tyrannidae	Alectrurus	Alectrurus tricolor
Aves	Passeriformes	Tyrannidae	Polystictus	Polystictus pectoralis pectoralis
Aves	Passeriformes	Tyrannidae	Polystictus	Polystictus pectoralis
Aves	Procellariiformes	Diomedeidae	Diomedea	Diomedea chrysolaia II
Aves	Procellariiformes	Diomedeidae	Diomedea	Diomedea epomachus II
Aves	Procellariiformes	Diomedeidae	Diomedea	Diomedea epomachus
Aves	Procellariiformes	Diomedeidae	Diomedea	Diomedea exulans II
Aves	Procellariiformes	Diomedeidae	Diomedea	Diomedea exulans
Aves	Procellariiformes	Diomedeidae	Phoebastria	Phoebastria fusca II
Aves	Procellariiformes	Diomedeidae	Phoebastria	Phoebastria fusca
Aves	Procellariiformes	Diomedeidae	Phoebastria	Phoebastria palpestrata
Aves	Procellariiformes	Diomedeidae	Phoebastria	Phoebastria palpestrata II
Aves	Procellariiformes	Diomedeidae	Thalassarche	Thalassarche cauta
Aves	Procellariiformes	Diomedeidae	Thalassarche	Thalassarche cauta II
Aves	Procellariiformes	Diomedeidae	Thalassarche	Thalassarche cheloni II
Aves	Procellariiformes	Diomedeidae	Thalassarche	Thalassarche cheloni
Aves	Procellariiformes	Diomedeidae	Thalassarche	Thalassarche cheloni
Aves	Procellariiformes	Diomedeidae	Thalassarche	Thalassarche melanophrys
Aves	Procellariiformes	Procellariidae	Macronectes	Macronectes giganteus
Aves	Procellariiformes	Procellariidae	Macronectes	Macronectes giganteus II
Aves	Procellariiformes	Procellariidae	Macronectes	Macronectes halli
Aves	Procellariiformes	Procellariidae	Macronectes	Macronectes halli II
Aves	Procellariiformes	Procellariidae	Procellaria	Procellaria aequinoctialis
Aves	Procellariiformes	Procellariidae	Procellaria	Procellaria aequinoctialis II
Aves	Procellariiformes	Procellariidae	Procellaria	Procellaria cinerea II
Aves	Procellariiformes	Procellariidae	Procellaria	Procellaria cinerea
Aves	Procellariiformes	Procellariidae	Procellaria	Procellaria conspicillata
Aves	Procellariiformes	Procellariidae	Procellaria	Procellaria conspicillata II
Reptilia	Testudinata	Cheloniidae	Caretta	Caretta caretta
Reptilia	Testudinata	Cheloniidae	Caretta	Caretta caretta I/II
Reptilia	Testudinata	Cheloniidae	Caretta	Caretta caretta
Reptilia	Testudinata	Cheloniidae	Chelonia	Chelonia mydas
Reptilia	Testudinata	Cheloniidae	Chelonia	Chelonia mydas
Reptilia	Testudinata	Cheloniidae	Chelonia	Chelonia mydas I/II
Reptilia	Testudinata	Cheloniidae	Eretmochelys	Eretmochelys imbricata
Reptilia	Testudinata	Cheloniidae	Eretmochelys	Eretmochelys imbricata
Reptilia	Testudinata	Cheloniidae	Eretmochelys	Eretmochelys imbricata I/II
Reptilia	Testudinata	Cheloniidae	Lepidochelys	Lepidochelys olivacea I/II
Reptilia	Testudinata	Cheloniidae	Lepidochelys	Lepidochelys olivacea
Reptilia	Testudinata	Cheloniidae	Lepidochelys	Lepidochelys olivacea
Reptilia	Testudinata	Dermochelyidae	Dermochelys	Dermochelys coriacea I/II
Reptilia	Testudinata	Dermochelyidae	Dermochelys	Dermochelys coriacea
Reptilia	Testudinata	Dermochelyidae	Dermochelys	Dermochelys coriacea
Reptilia	Testudinata	Podocnemididae	Podocnemis	Podocnemis expansa I/II

Source: Species+, <http://www.speciesplus.net/>

Table A4 List of CMS-listed animals in Brazil (continued, 4/4)

E lasm obranch ii	Lam n ifom es	Cetorh in idae	Cetorh inus	Cetorh inus m ax in us	
E lasm obranch ii	Lam n ifom es	Cetorh in idae	Cetorh inus	Cetorh inus m ax i	I/II
E lasm obranch ii	Lam n ifom es	Lam n idae	Carcharodon	Carcharodon car	I/II
E lasm obranch ii	Lam n ifom es	Lam n idae	Carcharodon	Carcharodon carcharias	
E lasm obranch ii	Lam n ifom es	Lam n idae	Isurus	Isurus oxyrinchu	II
E lasm obranch ii	Lam n ifom es	Lam n idae	Isurus	Isurus oxyrinchus	
E lasm obranch ii	Lam n ifom es	Lam n idae	Isurus	Isurus paucus	II
E lasm obranch ii	Lam n ifom es	Lam n idae	Isurus	Isurus paucus	
E lasm obranch ii	Lam n ifom es	Lam n idae	Lam na	Lam na nasus	II
E lasm obranch ii	Lam n ifom es	Lam n idae	Lam na	Lam na nasus	
E lasm obranch ii	O rec to bb ifom es	Rh incodontidae	Rh incodon	Rh incodon typus	II
E lasm obranch ii	O rec to bb ifom es	Rh incodontidae	Rh incodon	Rh incodon typus	
Insecta	Lepidoptera	Nym phalidae	Danaus	Danaus plexippu	II

Source: Species+, <http://www.speciesplus.net/>

Appendix 5 Protected Areas in Brazil

Table A5 List of Protected Area in Brazil (1/25)

name	original name (Portuguese)	Designation
Lago P ratuba	Reserva B o A gca do Lago P ratuba	B o b gcalReserve
R o Trom betas	Reserva B o A gca do R o Trom betas	B o b gcalReserve
JarA °	Reserva B o A gca do Jaru	B o b gcalReserve
A to l das Rocas	Reserva B o A gca A to l das Rocas	B o b gcalReserve
Sooretam a	Reserva B o A gca de Sooretam a	B o b gcalReserve
Una	Reserva B o A gca de Una	B o b gcalReserve
PoA s o das Antas	Reserva B o A gca de PoA s o das Antas	B o b gcalReserve
CÁ rrego do Veado	Reserva B o A gca do CÁ rrego do Veado	B o b gcalReserve
Serra Negra	Reserva B o A gca de Serra Negra	B o b gcalReserve
JaA °	Parque Nac onal do JaA °	NatnolPark
P co da Neblna	Parque Nac onal do P co da Neblna	NatnolPark
Am azA nã	Parque Nac onal da Am azA nã	NatnolPark
PacaA s Novos	Parque Nac onal de PacaA s Novos	NatnolPark
Cabo O range	Parque Nac onal do Cabo O range	NatnolPark
Araguaã	Parque Nac onal do Araguaã	NatnolPark
Chapada dos Veade ros	Parque Nac onal da Chapada dos Veade ros	NatnolPark
IguaA s u	Parque Nac onal do IguaA s u	NatnolPark
LenA s A s Maranhenses	Parque Nac onal dos LenA s o s Maranhenses	NatnolPark
Em as	Parque Nac onal das Em as	NatnolPark
Serra da Capivara	Parque Nac onal da Serra da Capivara	NatnolPark
Serra da Canastra	Parque Nac onal da Serra da Canastra	NatnolPark
SÃ o Joaquim	Parque Nac onal de SÃ o Joaquim	NatnolPark
Brasilia	Parque Nac onal de Brasã - la	NatnolPark
Monte Pascoal	Parque Nac onal do Monte Pascoal	NatnolPark
CaparaA °	Parque Nac onal de Caparao	NatnolPark
Itatiaia	Parque Nac onal Itatiaia	NatnolPark
Aparados da Serra	Parque Nac onal de Aparados da Serra	NatnolPark
Serra dos A gÃ os	Parque Nac onal da Serra dos O rgÃ os	NatnolPark
Sete C idades	Parque Nac onal de Sete C idades	NatnolPark
Tijuca	Parque Nac onal da Tijuca	NatnolPark
Ubaãra	Parque Nac onal de Ubaãra	NatnolPark
Serra da Bocaina	Parque Nac onal da Serra da Bocaina	NatnolPark
Augusto Ruschi	Reserva B o A gca Augusto Ruschi	B o b gcalReserve
Anavihanã	Parque Nac onal de Anavihanã	NatnolPark
Aracuri-Esm eralda	EstaA s A s Eco A gca de Aracuri-esm eralda	Eco b gcalStaton
IguA °	EstaA s A s Eco A gca de IguA °	Eco b gcalStaton
Maracã i	EstaA s A s Eco A gca de Maracã i	Eco b gcalStaton
Maracã i-J pãca	EstaA s A s Eco A gca de Maracã i J pãca	Eco b gcalStaton
Taim A s	EstaA s A s Eco A gca de Taim A s	Eco b gcalStaton
UruA s u i- Una	EstaA s A s Eco A gca de UruA s u i--una	Eco b gcalStaton
R o Acre	EstaA s A s Eco A gca R o Acre	Eco b gcalStaton
PantanalM atogrossense	Parque Nac onal do PantanalM atogrossense	NatnolPark
R o Doce	Parque Estadual do R o doce	State Park
Via Ve ha	Via Ve ha	State Park
Jari	EstaA s A s Eco A gca do Jari	Eco b gcalStaton
Pau b de Farã	EstaA s A s Eco A gca de Pau b De Farã	Eco b gcalStaton
A lto do R beira	Parque EstadualTurã -stã do A lto do R beira	State Park
Ara	Parque Estadual da Ara	State Park
Caetetus	EstaA s A s Eco A gca dos Caetetus	Eco b gcalStaton
Campos do Jordã s o	Parque Estadual de Campos do Jordã s o	State Park
Carbs Bote ho	Parque EstadualCarbs Bote ho	State Park
Iha Anch eta	Parque Estadual da Iha Anch eta	State Park
Ihabeã	Parque Estadual de Ihabeã	State Park
Iha do Cardoso	Iha do Cardoso	State Park
Jacupiranga	Jacupiranga	State Park
Jaraguã i	Parque Estadual do Jaraguã i	State Park
Serra do Mar	Parque Estadual da Serra do Mar	State Park
Vassununga	Parque Estadual de Vassununga	State Park
Cantare ra	Cantare ra	State Park
Itapeti	EstaA s A s Eco A gca de Itapeti	Eco b gcalStaton
Serdã °	EstaA s A s Eco A gca do Serdã °	Eco b gcalStaton
Caracaraã -	EstaA s A s Eco A gca de Caracaraã -	Eco b gcalStaton
Serra das Araras	Parque EstadualSerra das Araras	State Park
Guaporã °	Reserva B o A gca do Guaporã °	B o b gcalReserve
Abuãri	Reserva B o A gca do Abuãri	B o b gcalReserve
Taprapã °	Reserva B o A gca do Taprapã °	B o b gcalReserve
Saltnho	Reserva B o A gca de Saltnho	B o b gcalReserve
Guaraqueã s aba	Área de Proteã s A s Ambiental de Guaraqueã s aba	EnvironmentalProtection Area
Taim	EstaA s A s Eco A gca do Taim	Eco b gcalStaton
Com bo s	Reserva B o A gca de Com bo s	B o b gcalReserve
M rador	M rador	State Park
Gurupi	Reserva B o A gca do Gurupi	B o b gcalReserve
Parque do Tum ucum aque	Parque do Tum ucum aque	Indigenous Area
Tapaã s	F bresta Nac onal de Tapaã s	NatnolForest

Source: Explore Protected Areas, <http://protectedplanet.net/>

Table A5 List of Protected Area in Brazil (continued, 2/25)

Caxuanã	F bresta Nacional de Caxuanã	National Forest
Trás Barras	F bresta Nacional de Trás Barras	National Forest
Caásador	F bresta Nacional de Caásador	National Forest
São Francisco de Paula	F bresta Nacional de São Francisco De Paula	National Forest
Canela	F bresta Nacional de Canela	National Forest
Passo Fundo	F bresta Nacional de Passo Fundo	National Forest
Jamari	F bresta Nacional do Jamari	National Forest
Mangueza da Foz do Rio Mamanguape	Área de Relevante Interesse Ecológico Mangueza da Foz do Rio Mamanguape	Area of Outstanding Ecological Interest
Cariás	Estação Ecológica de Cariás	Ecological Station
Pirapitinga	Estação Ecológica de Pirapitinga	Ecological Station
Niquiri	Estação Ecológica de Niquiri	Ecological Station
Juam I-Japurá	Estação Ecológica Juam I-Japurá	Ecological Station
Raso da Catarina	Estação Ecológica Raso da Catarina	Ecological Station
Iha dos Lobos	Refúgio de Vida Silvestre Iha dos Lobos	Wildlife Refuge
Juta--Solimões	Estação Ecológica de Juta--Solimões	Ecological Station
Aiuaba	Estação Ecológica de Aiuaba	Ecological Station
Iguaçu National Park	Parque Nacional Iguaçu	World Heritage Site
Pedra Azul	Pedra Azul	State Park
Duas Bocas	Duas Bocas	State Biological Reserve
Mestre Álvaro	Mestre Álvaro	State Environmental Protection Area
Forno Grande	Forno Grande	State Park
Itipoca	Itipoca	State Park
Itacombi	Parque Estadual do Itacombi	State Park
Grapião	Grapião	State Park
Parati-Mirim	Parati-Mirim	Indigenous Area
Araras	Reserva Biológica de Araras	Biological Reserve
Pedra Branca	Pedra Branca	State Park
Desengano	Parque Estadual do Desengano	State Park
Ibaitu	Ibaitu	State Park
Figueira	Figueira	State Forest Reserve
Ribadonãsa	Ribadonãsa	State Park
Campinhos	Campinhos	State Park
Vila Rica do Espírito Santo	Vila Rica do Espírito Santo	State Park
Mongé	Mongé	State Park
Pinhão	Pinhão	State Forest Reserve
Caxambu	Caxambu	State Park
Lauréas	Lauréas	State Park
Serra Furada	Serra Furada	State Park
Canela Preta	Canela Preta	State Biological Reserve
Sassafrás	Sassafrás	State Biological Reserve
Serra do Tabuleiro	Serra do Tabuleiro	State Park
Espinho	Espinho	State Park
Irapueta	Irapueta	State Biological Reserve
Espírito Santo	Espírito Santo	State Park
Delta do Jacuá	Delta do Jacuá	State Park
Turvo	Turvo	State Park
Camapuã	Camapuã	State Park
Caracol	Caracol	State Park
Itirapina	Itirapina	State Park
Mato Grande	Mato Grande	State Biological Reserve
Podocarpus	Podocarpus	State Park
Taihas	Taihas	State Park
Região Serrana de Petrópolis	Área de Proteção Ambiental de Petrópolis	Environmental Protection Area
Pedra Abusá	Área de Proteção Ambiental de Pedra Abusá	Environmental Protection Area
Serra da Mantiqueira	Área de Proteção Ambiental Serra da Mantiqueira	Environmental Protection Area
Guaraqueá	Estação Ecológica de Guaraqueá	Ecological Station
Tupinambás	Estação Ecológica de Tupinambás	Ecological Station
Tupinhuins	Estação Ecológica dos Tupinhuins	Ecological Station
Córrego Grande	Reserva Biológica do Córrego Grande	Biological Reserve
Tinguá	Reserva Biológica do Tinguá	Biological Reserve
Santa Isabel	Reserva Biológica de Santa Isabel	Biological Reserve
Grande Sertão Veredas	Parque Nacional Grande Sertão Veredas	National Park
Chapada dos Guimarães	Parque Nacional da Chapada dos Guimarães	National Park
Superagui	Parque Nacional do Superagui	National Park
Serra do Divisor	Parque Nacional da Serra do Divisor	National Park
Aguaí	Aguaí	State Biological Reserve
Águas Emendadas	Estação Ecológica de Águas Emendadas	Ecological Station
Praia do Sul	Praia do Sul	State Biological Reserve
Serra Geral	Serra Geral	State Biological Reserve
Bauri	Estação Ecológica de Bauri	Ecological Station
Brachho	Brachho	State Ecological Station
Chãos	Estação Ecológica Chãos	Ecological Station
Ibaitu	Estação Ecológica Ibaitu	Ecological Station
Iha do Mel	Iha do Mel	State Ecological Station
Itirapina	Estação Ecológica Itirapina	Ecological Station

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 3/25)

Jatã	Estação Ecológica Jatã	Ecological Station
Reboredo Preto	Estação Ecológica de Reboredo Preto	Ecological Station
Santa Bárbara	Estação Ecológica de Santa Bárbara	Ecological Station
Paraíso	Paraíso	State Ecological Station
Chapada Diamantina	Parque Nacional da Chapada Diamantina	National Park
Lagoa do Peixe	Parque Nacional da Lagoa do Peixe	National Park
Bacanga	Bacanga	State Park
Morro do Chapão	Parque Estadual do Morro do Chapão	State Park
Pedra Tahada	Reserva Biológica de Pedra Tahada	Biological Reserve
Rondinha	Rondinha	State Park
Serra de Cabas Novas	Parque Estadual da Serra de Cabas Novas	State Park
Cairuá	Área de Proteção Ambiental de Cairuá	Environmental Protection Area
Gruta dos Brejões/Veredas do Romão e Gramacho	Área de Proteção Ambiental Grutas dos Brejões / Veredas do Romão e Gramacho	State Environmental Protection Area
Serra do Mar	Serra do Mar	State Environmental Protection Area
Mangaratiba	Mangaratiba	State Environmental Protection Area
Maricá	Maricá	State Environmental Protection Area
Massambaba	Área de Proteção Ambiental de Massambaba	Environmental Protection Area
Cananóia-Iguape-Peruá-be	Área de Proteção Ambiental de Cananóia-Iguape-Peruá-be	Environmental Protection Area
Koathemo	Koathemo	Indigenous Area
Karará	Karará	Indigenous Area
Tripuá	Estação Ecológica do Tripuá	Ecological Station
Serra do Cipó	Parque Nacional da Serra do Cipó	National Park
Amapá	Floresta Nacional de Amapá	National Forest
Purus	Floresta Nacional de Purus	National Forest
Teffé	Floresta Nacional de Teffé	National Forest
Guará	Reserva Biológica do Guará	Biological Reserve
Bacão do Rio Descoberto	Área de Proteção Ambiental da Bacão do Rio Descoberto	Environmental Protection Area
Bacão do Rio São Bartolomeu	Área de Proteção Ambiental da Bacão do Rio São Bartolomeu	Environmental Protection Area
Cafuringa	Apa de Cafuringa	Environmental Protection Area
Igarapé Gelado	Área de Proteção Ambiental do Igarapé Gelado	Environmental Protection Area
Mário Xavier	Floresta Nacional de Mário Xavier	National Forest
Bom Futuro	Floresta Nacional de Bom Futuro	National Forest
Monte Roraima	Parque Nacional do Monte Roraima	National Park
Ibirama	Floresta Nacional de Ibirama	National Forest
Mamirauá	Mamirauá	State Sustainable Development Reserve
Fonte Grande	Fonte Grande	State Park
Itapeva	Estação Ecológica Itapeva	Ecological Station
Guarbas	Reserva Biológica Guarbas	Biological Reserve
Arvoredo	Reserva Biológica Marinha do Arvoredo	Biological Reserve
Uatumã	Reserva Biológica do Uatumã	Biological Reserve
Cavernas do Peruaçu	Área de Proteção Ambiental Cavernas do Peruaçu	Environmental Protection Area
Carste da Lagoa Santa	Área de Proteção Ambiental Carste da Lagoa Santa	Environmental Protection Area
Serra da Tabatinga	Área de Proteção Ambiental Serra da Tabatinga	Environmental Protection Area
Amazonas	Floresta Nacional do Amazonas	National Forest
Mapá-Ihauí	Floresta Nacional de Mapá-Ihauí	National Forest
Roraima	Floresta Nacional de Roraima	National Forest
Saracá-Taquera	Floresta Nacional de Saracá-Taquera	National Forest
Tapirapó-Aquiri	Floresta Nacional de Tapirapó-Aquiri	National Forest
Aito Juruá	Reserva Extrativista Aito Juruá	Extractive Reserve
Chico Mendes	Reserva Extrativista Chico Mendes	Extractive Reserve
Rio Caari	Reserva Extrativista Rio Caari	Extractive Reserve
Rio Ouro Preto	Reserva Extrativista Rio Ouro Preto	Extractive Reserve
Águas Quentes	Águas Quentes	State Park
Culiene	Culiene	State Ecological Reserve
Serra da Tririca	Serra da Tririca	State Park
Manguezaís da Lagoa do Roteiro	Manguezaís da Lagoa do Roteiro	State Ecological Reserve
Nhamundá	Nhamundá	State Park
Serra do Araçá	Serra do Araçá	State Park
Caverna do Maroaga	Caverna do Maroaga	State Environmental Protection Area
Nhamundá	Nhamundá	State Environmental Protection Area
Lagoas e Dunas do Abaeté	Lagoas e Dunas do Abaeté	State Environmental Protection Area
Wenceslau Guimarães	Wenceslau Guimarães	State Ecological Station
Serra de Baturité	Serra de Baturité	State Environmental Protection Area
Riacho Fundo	Riacho Fundo	State Area of Outstanding Ecological Interest
Paranoá Sul	Área Paranoá Sul	Relevant Ecological Interest Area
Lago Paranoá	Lago Paranoá	State Ecological Reserve
Serra do Brigadeiro	Serra do Brigadeiro	State Park
Cachoeira das Andorinhas	Área de Proteção Ambiental Cachoeira das Andorinhas	State Environmental Protection Area
Algodão-Mãe	Área de Proteção Ambiental de Algodão-Mãe	Environmental Protection Area
Iporã	Iporã	State Park
Cabeça do Cachorro	Cabeça do Cachorro	State Area of Outstanding Ecological Interest
Buriti	Buriti	State Area of Outstanding Ecological Interest
Palmás	Palmás	State Park
São Camib	São Camib	State Biological Reserve
Passa Dois	Passa Dois	State Forest

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 4/25)

Mata do Godoy	Mata do Godoy	State Park
Serra do Tigre	Serra do Tigre	State Area of Outstanding Ecological Interest
Graciosa	Graciosa	State Park
Penhasco Verde	Penhasco Verde	State Park
Pico Marumbi	Pico Marumbi	State Park
Itaçu - Mirim	Itaçu - Mirim	State Biological Reserve
Itapuã	Itapuã	State Park
Banhado Grande	Banhado Grande	State Environmental Protection Area
Samuel	Samuel	State Ecological Station
Serra dos Três Irmãos	Serra dos Três Irmãos	State Ecological Station
Traşadal	Traşadal	State Biological Reserve
Rio Ouro Preto	Rio Ouro Preto	State Biological Reserve
Guarã Mirim	Guarã Mirim	State Park
Corumbara	Corumbara	State Park
Serra dos Reis	Serra dos Reis	State Park
Intervals	Intervals	State Park
Fazendinha	Fazendinha	State Biological Reserve
Rio Curiaó	Área de Proteção Ambiental do Rio Curiaó	Environmental Protection Area
Rio Vermelho B	Rio Vermelho B	State Forest
Rio Vermelho C	Rio Vermelho C	State Forest
Rio Madeira A	Rio Madeira A	State Forest
Rio Machado	Rio Machado	State Forest
Rio Roosevelt	Rio Roosevelt	State Ecological Station
Rio Preto/Jacundá I	Rio Preto/Jacundá I	State Extractive Reserve
Rio Pacaás Novos	Rio Pacaás Novos	State Extractive Reserve
Guará I	Guará I	State Park
Nukhi	Nukhi	Indigenous Area
Poyanawa	Poyanawa	Indigenous Area
Jamhawa do Igarapão Preto	Jamhawa do Igarapão Preto	Indigenous Area
Jamhawa Arara do Rio Bag	Jamhawa Arara do Rio Bag	Indigenous Area
Kaxinawá da Praia do Cara	Kaxinawá da Praia do Carapanã	Indigenous Area
Kampa do Rio Amonea	Kampa do Rio Amonea	Indigenous Area
Kaxinawá Ashaninka do Rio	Kaxinawá Ashaninka do Rio Breu	Indigenous Area
Kaxinawá do Rio Jordão	Kaxinawá do Rio Jordão	Indigenous Area
Alto Tarauacá I	Alto Tarauacá I	Indigenous Area
Kampa e Isoados do Rio E	Kampa e Isoados do Rio Envira	Indigenous Area
Kaxinawá do Rio Humaitá	Kaxinawá do Rio Humaitá I	Indigenous Area
Arara do Igarapão Humaitá	Arara do Igarapão Humaitá I	Indigenous Area
Rio Gregário	Rio Gregário	Indigenous Area
Kaxinawá Coanã Vinte	Kaxinawá Coanã Vinte e Sete	Indigenous Area
Igarapão do Caucho	Igarapão do Caucho	Indigenous Area
Kulina Igarapão do Pau	Kulina Igarapão do Pau	Indigenous Area
Kaxinawá Nova Linda	Kaxinawá Nova Linda	Indigenous Area
Mamadate	Mamadate	Indigenous Area
Cabeceira do Rio Acre	Cabeceira do Rio Acre	Indigenous Area
Alto Rio Purus	Alto Rio Purus	Indigenous Area
Antimary	Antimary	State Forest
Macauá I	Fresta Nacional de Macauá	National Forest
Galbi	Galbi	Indigenous Area
Jumha	Jumha	Indigenous Area
Uaşa	Uaşa	Indigenous Area
Waápi	Waápi	Indigenous Area
1.475383 -53.224347	1.478603 -53.224662	1.482003 -53.227175
Morro dos Seis Lagos	Reserva Biológica Morro dos Seis Lagos	Biological Reserve
Javari-Buriti	Área de Relevante Interesse Ecológico Javari-Buriti	Area of Outstanding Ecological Interest
Boca do Acre	Boca do Acre	Indigenous Area
Camcua	Camcua	Indigenous Area
Coata-Laranjal	Coata-Laranjal	Indigenous Area
Deni	Deni	Indigenous Area
Estrela da Paz	Estrela da Paz	Indigenous Area
Gavão	Gavão	Indigenous Area
Guapenu	Guapenu	Indigenous Area
Igarapão Grande	Igarapão Grande	Indigenous Area
Ipikuna	Ipikuna	Indigenous Area
Itatinga	Itatinga	Indigenous Area
Jaquiri	Jaquiri	Indigenous Area
Jatuarana	Jatuarana	Indigenous Area
Katukna/Kaxinawá I	Katukna/Kaxinawá I	Indigenous Area
Kaxarari	Kaxarari	Indigenous Area
Kulina do Médio Jurua	Kulina do Médio Jurua	Indigenous Area
Lago Apua	Lago Apua	Indigenous Area
Lago do Beruri	Lago do Beruri	Indigenous Area
Lameirão	Lameirão	Indigenous Area
Lauro Sodré	Lauro Sodré	Indigenous Area
Macarrão	Macarrão	Indigenous Area

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 5/25)

Seruni/Marène	Seruni/Marène	Indigenous Area
Mera	Mera	Indigenous Area
Miratu	Miratu	Indigenous Area
Murutinga	Murutinga	Indigenous Area
Nata/Felicidade	Nata/Felicidade	Indigenous Area
Nhamundã/Mapuera	Nhamundã/Mapuera	Indigenous Area
Nove de Janeiro	Nove de Janeiro	Indigenous Area
Padre	Padre	Indigenous Area
Paracuhuba	Paracuhuba	Indigenous Area
Paum arido Lago Maranhão	Paum arido Lago Maranhão	Indigenous Area
Prahã	Prahã	Indigenous Area
Ribã	Ribã	Indigenous Area
Recreb/São Félix	Recreb/São Félix	Indigenous Area
São Leopoldo	São Leopoldo	Indigenous Area
Tabocal	Tabocal	Indigenous Area
Tenharim Mamebs	Tenharim Mamebs	Indigenous Area
Terra Vermelha	Terra Vermelha	Indigenous Area
Betania	Betania	Indigenous Area
Tkãna de Feijal	Tkãna de Feijal	Indigenous Area
Ávore II	Ávore II	Indigenous Area
Ávore I	Ávore I	Indigenous Area
Tukuna Porto Espiritual	Tukuna Porto Espiritual	Indigenous Area
Tukuna de Santo Antônio	Tukuna de Santo Antônio	Indigenous Area
Vui-Uata-In	Vui-Uata-In	Indigenous Area
Tracaã	Tracaã	Indigenous Area
Trincheira	Trincheira	Indigenous Area
Uati-Paraná	Uati-Paraná	Indigenous Area
Tukuna Umaraã	Tukuna Umaraã	Indigenous Area
Unexi	Unexi	Indigenous Area
Val do Javari	Val do Javari	Indigenous Area
Wamir-Atroari	Wamir-Atroari	Indigenous Area
Zuruahã	Zuruahã	Indigenous Area
Alto Turã	Alto Turã	Indigenous Area
Ararboã	Ararboã	Indigenous Area
Awa	Awa	Indigenous Area
Bacurizinho	Bacurizinho	Indigenous Area
Cana Brava/Guaçara	Cana Brava/Guaçara	Indigenous Area
Caru	Caru	Indigenous Area
Geraltá Toco Preto	Geraltá Toco Preto	Indigenous Area
Governador	Governador	Indigenous Area
Krkati	Krkati	Indigenous Area
Lagoa Comprida	Lagoa Comprida	Indigenous Area
Morro Branco	Morro Branco	Indigenous Area
Porquinhos	Porquinhos	Indigenous Area
Ribandarã	Ribandarã	Indigenous Area
Rodeador	Rodeador	Dominal Indigenous Area
Urucu/Juruã	Urucu/Juruã	Indigenous Area
Apaka/Kayabi	Apaka/Kayabi	Indigenous Area
Areãmes	Areãmes	Indigenous Area
Bakari	Bakari	Indigenous Area
Capoto/Jarina	Capoto/Jarina	Indigenous Area
Erkbaktsa	Erkbaktsa	Indigenous Area
Escondido	Escondido	Indigenous Area
Estivadinho	Estivadinho	Indigenous Area
Figueiras	Figueiras	Indigenous Area
Irantxe	Irantxe	Indigenous Area
Japura	Japura	Indigenous Area
Jarudore	Jarudore	Indigenous Reserve
Marechal Rondon	Marechal Rondon	Indigenous Area
Menku	Menku	Indigenous Area
Merure	Merure	Indigenous Area
Nambkwara	Nambkwara	Indigenous Area
Parabubure	Parabubure	Indigenous Area
Parsi	Parsi	Indigenous Area
Pergara	Pergara	Indigenous Area
Pimente Barbosa	Pimente Barbosa	Indigenous Area
Pirneus de Souza	Pirneus de Souza	Indigenous Area
Rib Formoso	Rib Formoso	Indigenous Area
Sangradouro/Volta Grande	Sangradouro/Volta Grande	Indigenous Area
Santana	Santana	Indigenous Area
São Domingos - MT	São Domingos - MT	Indigenous Area
Sararã	Sararã	Indigenous Area
Serra Morena	Serra Morena	Indigenous Area
Tadarimana	Tadarimana	Indigenous Area
Taprapã/Karaã	Taprapã/Karaã	Indigenous Area

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 6/25)

Tereza Cristina	Tereza Cristina	Indigenous Reserve
Trecatinga	Trecatinga	Indigenous Area
Umutina	Umutina	Indigenous Area
Utarij	Utarij	Indigenous Area
Valé do Guaporã	Valé do Guaporã	Indigenous Area
Zorã	Zorã	Indigenous Area
Alto Rio Guamã	Alto Rio Guamã	Indigenous Area
Amayã	Amayã	Indigenous Area
Anambã	Anambã	Indigenous Area
Andraí-Marau	Andraí-Marau	Indigenous Area
Apyterewa	Apyterewa	Indigenous Area
Araweté - Igarapã - IPIXUN	Araweté - Igarapã - IPIXUNA	Indigenous Area
Baã	Baã	Indigenous Area
Xkrin do Rio Catete	Xkrin do Rio Catete	Indigenous Area
Kayapã	Kayapã	Indigenous Area
Cayabi	Cayabi	Indigenous Area
Mãe Maria	Mãe Maria	Indigenous Area
Munduruku	Munduruku	Indigenous Area
Paquã - Samba	Paquã - Samba	Indigenous Area
Parakanã	Parakanã	Indigenous Area
Sai-Cnza	Sai-Cnza	Indigenous Area
Sororã	Sororã	Indigenous Area
Tembã	Tembã	Indigenous Area
Trocarã	Trocarã	Indigenous Area
Aphayã	Aphayã	Indigenous Area
Funil	Funil	Indigenous Area
Kraoãndia	Kraoãndia	Indigenous Area
Xambã	Xambã	Indigenous Area
Xerente	Xerente	Indigenous Area
Rio Cautãrio	Rio Cautãrio	State Extractive Reserve
Igarapã - Lage	Igarapã - Lage	Indigenous Area
Igarapã - Lourdes	Igarapã - Lourdes	Indigenous Area
Igarapã - Ribeirão	Igarapã - Ribeirão	Indigenous Area
Karpuna	Karpuna	Indigenous Area
Karitãna	Karitãna	Indigenous Area
Rio Mequens	Rio Mequens	Indigenous Area
Pacaas Novas	Pacaas Novas	Indigenous Area
Rio Branco	Rio Branco	Indigenous Area
Rio Guaporã	Rio Guaporã	Indigenous Area
Rio Negro Ocã	Rio Negro Ocã	Indigenous Area
Roosevelt	Roosevelt	Indigenous Area
Sagarana	Sagarana	Indigenous Area
Sete de Setem bro	Sete de Setem bro	Indigenous Area
Tubarão Latunde	Tubarão Latunde	Indigenous Area
Uru-Eu-Wau-Wau	Uru-Eu-Wau-Wau	Indigenous Area
Ananãis	Ananãis	Indigenous Area
Anãgal	Anãgal	Indigenous Area
Antã	Antã	Indigenous Area
Araãsa	Araãsa	Indigenous Area
Barata Livramento	Barata Livramento	Indigenous Area
Bom Jesus	Bom Jesus	Indigenous Area
Boqueirão	Boqueirão	Indigenous Area
Cajero	Cajero	Indigenous Area
Canuanim	Canuanim	Indigenous Area
Jabuti	Jabuti	Indigenous Area
Jacãm	Jacãm	Indigenous Area
Mãcacheta	Mãcacheta	Indigenous Area
Mãgueira	Mãgueira	Indigenous Area
Mãnoã/Pim	Mãnoã/Pim	Indigenous Area
Murru	Murru	Indigenous Area
Ouro	Ouro	Indigenous Area
Pim	Pim	Indigenous Area
Ponta da Serra	Ponta da Serra	Indigenous Area
Rãundão	Rãundão	Indigenous Area
Rãosa Serra do Sol	Rãosa Serra do Sol	Indigenous Area
4.465023 - 59.903487	4.466053 - 59.903187	4.467974 - 59.902108
Sãta Inez	Sãta Inez	Indigenous Area
São Marcos - MT	São Marcos - MT	Indigenous Reserve
Serra da Mãsa	Serra da Mãsa	Indigenous Area
Sucuba	Sucuba	Indigenous Area
Tabãscada	Tabãscada	Indigenous Area
Tuaru	Tuaru	Indigenous Area
Wãwai	Wãwai	Indigenous Area
Arãra	Arãra	Indigenous Area
Lagoas de Guãrãjã	ãrea de Proteãsa Ambiental Lagoas de Guãrãjã	Environmental Protection Area

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 7/25)

Turão/Marujita II	Turão/Marujita II	Acqu red Indigenous Area
Trincheira Bacaja	Trincheira Bacaja	Indigenous Area
Cachoeira Seca	Cachoeira Seca	Indigenous Area
Menkragnotã	Menkragnotã	Indigenous Area
Praia do Mangue	Praia do Mangue	Acqu red Indigenous Area
Praia do Andô	Praia do Andô	Acqu red Indigenous Area
Rio Paru D'Este	Rio Paru D'Este	Indigenous Area
Kaneba	Kaneba	Indigenous Area
Saco da Pedra	Saco da Pedra	State Ecobgical Reserve
Macaão de Cima	Macaão de Cima	State Environmental Protection Area
Chacrinha	Chacrinha	State Park
Aventureiro	Aventureiro	State Marine Park
Massambaba	Massambaba	State Ecobgical Reserve
Guaratuba	Reserva Biológica Arqueológica de Guaratuba	Biobgical Reserve
Serra da Sapatuba	Área de Proteção Ambiental da Serra de Sapatuba	State Environmental Protection Area
Jericoacoara	Jericoacoara	Environmental Protection Area
Guaraguaçu sem Praia	Estação Ecológica do Guaraguaçu	Ecobgical Station
Guabim	Área de Proteção Ambiental Guabim	State Environmental Protection Area
Litoral Norte do Estado da	Litoral Norte do Estado da Bahia	State Environmental Protection Area
Tinhaíba	Tinhaíba	State Environmental Protection Area
Cachoeira da Fumaça	Cachoeira da Fumaça	State Park
Mata das Flores	Mata das Flores	State Park
Itaúnas	Itaúnas	State Park
Jardim Botânico	Estação Ecológica do Jardim Botânico	Ecobgical Station
Potiguara	Potiguara	Indigenous Area
Mata do Pau Ferro	Mata do Pau Ferro	State Ecobgical Reserve
Pico do Jabre	Pico do Jabre	State Park
Vale do Dossauro	Área de Relevante Interesse Ecológico Vale dos Dossauros	Area of Outstanding Ecobgical Interest
Fernando de Noronha	Parque Nacional Mar. de Fernando de Noronha	National Park
Rio Madeira B	Rio Madeira B	State Forest
Parque do Aripuanã	Parque do Aripuanã	Indigenous Area
Cerrado	Cerrado	UNESCO-MAB Biosphere Reserve
Rio Cocá	Rio Cocá	State Park
Santana	Santana	State Forest
Jacarezinho	Jacarezinho	Forest Garden
Mandaguari	Mandaguari	Forest Garden
Guaratuba	Guaratuba	State Environmental Protection Area
Serra Geral	Parque Nacional da Serra Geral	National Park
Irapuã	Área de Proteção Ambiental Irapuã	Environmental Protection Area
Projeto DNAMCA Biológica de Fragmentos	Área de Relevante Interesse Ecológico Projeto DNAMCA Biológica de Fragmentos	Area of Outstanding Ecobgical Interest
Praiauba	Reserva Extrativista Marinha Praiauba	Marine Extractive Reserve
Mata Atlântica (including)	Mata Atlântica (including Sao Paulo Green Belt)	UNESCO-MAB Biosphere Reserve
Pantanal Matogrossense	Pantanal Matogrossense	Ramsar Site, Wetland of International Importance
Lagoa do Peixe	Lagoa do Peixe	Ramsar Site, Wetland of International Importance
Parque de Manauel Luã-s	Parque de Manauel Luã-s	State Marine Park
Águas da Prata	Águas da Prata	State Forest Reserve
Bananal	Estação Ecológica Bananal	Ecobgical Station
Jurupari	Parque Estadual do Jurupari	State Park
Itaberã	Estação Ecológica Itaberã	Ecobgical Station
Morro do Diabo	Parque Estadual do Morro do Diabo	State Park
Porto Ferreira	Parque Estadual de Porto Ferreira	State Park
São Carlos	Estação Ecológica de São Carlos	Ecobgical Station
Vaiinhos	Vaiinhos	State Ecobgical Station
Xitua	Estação Ecológica de Xitua	Ecobgical Station
Jurua-Itatis	Estação Ecológica Jurua-Itatis	Ecobgical Station
Abrohos	Parque Nacional Marinho dos Abrohos	Marine National Park
Iha do Bananal	Iha do Bananal	Ramsar Site, Wetland of International Importance
Reentrâncias Maranhenses	Reentrâncias Maranhenses	Ramsar Site, Wetland of International Importance
Mamirauá	Mamirauá	Ramsar Site, Wetland of International Importance
Gama	Gama	State Ecobgical Reserve
Rio Iratapuru	Reserva de Desenvolvimento Sustentável do Rio Iratapuru	Sustainable Development Reserve
Campinas/Katukna	Campinas/Katukna	Indigenous Area
Tenharim do Igarapé Preto	Tenharim do Igarapé Preto	Indigenous Area
Ponta da Babá / Abrohos	Área de Proteção Ambiental Ponta da Babá / Abrohos	State Environmental Protection Area
Águas Belas	Águas Belas	Indigenous Area
Barra Veia	Barra Veia	Indigenous Area
Coroa Vermelha	Coroa Vermelha	Indigenous Area
Acimã	Acimã	Indigenous Area
Alto Sepatini	Alto Sepatini	Indigenous Area
Apurina do Igarapé São João	Apurina do Igarapé São João	Indigenous Area
Apurina Igarapé Tauamirim	Apurina Igarapé Tauamirim	Indigenous Area
Apurina Km 124 BR-317	Apurina Km 124 BR-317	Indigenous Area
Banawá	Banawá	Indigenous Area
Barreira da Missão	Barreira da Missão	Indigenous Area
Boa Vista - AM	Boa Vista - AM	Indigenous Area

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 9/25)

Pantanal	Pantanal	UNESCO - MAB Biosphere Reserve
Central Amazon Conserva	Complexo de conservação de Bê-Amazônia central	World Heritage Site
Pantanal Conservação Co	Área de conservação do Pantanal	World Heritage Site
Botucatu	Botucatu	State Forest
Costa dos Corais	Área de Proteção Ambiental Costa dos Corais	Environmental Protection Area
Terra do Meio	Estação Ecológica da Terra do Meio	Ecological Station
Serra do Pardo	Parque Nacional da Serra do Pardo	National Park
Rozinho da Lberdade	Reserva Extrativista Rozinho da Lberdade	Extractive Reserve
Anauá	Floresta Nacional de Anauá	National Forest
Pantanos Latinos e	Área de Relevante Interesse Ecológico Pantanos Latinos E Pantanos	Area of Outstanding Ecological Interest
Pantano de Santiago	Santiago	Area of Outstanding Ecological Interest
Baba Franca	Área de Proteção Ambiental da Baba Franca	Environmental Protection Area
Chapé	Floresta Nacional de Chapé	National Forest
Sant-Hilare/Lange	Parque Nacional de Sant-Hilare/Lange	National Park
Mandra	Reserva Extrativista Mandra	Extractive Reserve
Iha de Amekal	Área de Relevante Interesse Ecológico Iha Amekal	Area of Outstanding Ecological Interest
Ihas Queimada Grande e	Área de Relevante Interesse Ecológico Ihas Queimada Grande E Queimada	Area of Outstanding Ecological Interest
Pequena	Pequena	Area of Outstanding Ecological Interest
Capão Bonito	Floresta Nacional de Capão Bonito	National Forest
Ipanema	Floresta Nacional de Ipanema	National Forest
Arquipélago das Ihas Cagarras	Área de Relevante Interesse Ecológico das Ihas Cagarras	Area of Outstanding Ecological Interest
Arreal do Cabo	Reserva Extrativista Marinha Arreal do Cabo	Marine Extractive Reserve
Lorena	Floresta Nacional de Lorena	National Forest
Bacia do Rio São João - Mico-Leão	Área de Proteção Ambiental da Bacia do Rio São João - Mico Leão	Environmental Protection Area
Preto	Estação Ecológica Mico Leão Preto	Ecological Station
Cerrado Pá-de-gante	Área de Relevante Interesse Ecológico Pá-de-gante	Area of Outstanding Ecological Interest
Serra da Bodoquena	Parque Nacional da Serra da Bodoquena	National Park
Pacotuba	Floresta Nacional de Pacotuba	National Forest
Goytacazes	Floresta Nacional de Goytacazes	National Forest
Paraopeba	Floresta Nacional de Paraopeba	National Forest
Pontões Capkabas	Monumento Natural dos Pontões Capkabas	Nature Monument
Rio Preto	Floresta Nacional de Rio Preto	National Forest
Sempre-Vivas	Parque Nacional das Sempre Vivas	National Park
Corumbau	Reserva Extrativista Corumbau	Extractive Reserve
Mata Escura	Reserva Biológica da Mata Escura	Biological Reserve
Capetinga/Taquara	Área de Relevante Interesse Ecológico Capetinga/taquara	Area of Outstanding Ecological Interest
Brasília	Floresta Nacional de Brasília	National Forest
Cavernas do Peruaçu	Parque Nacional Cavernas do Peruaçu	National Park
Nascentes do Rio Vermelho	Área de Proteção Ambiental das Nascentes do Rio Vermelho	Environmental Protection Area
Veredas do Oeste Baiano	Refúgio de Vida Silvestre Veredas do Oeste Baiano	Wildlife Refuge
Baía de Iguapé	Baía de Iguapé	Extractive Reserve
Cristópolis	Floresta Nacional de Cristópolis	National Forest
Meandros do Rio Araguaia	Área de Proteção Ambiental Meandros do Araguaia	Environmental Protection Area
Rio do Cautário	Reserva Extrativista do Rio Cautário	Extractive Reserve
Serra da Cutá	Parque Nacional da Serra da Cutá	National Park
Barreiro das Antas	Reserva Extrativista Barreiro das Antas	Extractive Reserve
Serengal Nova Esperança	Área de Relevante Interesse Ecológico Serengal Nova Esperança	Area of Outstanding Ecological Interest
Serra Geral do Tocantins	Estação Ecológica Serra Geral do Tocantins	Ecological Station
São Francisco	Floresta Nacional de São Francisco	National Forest
Lagoa do Jequiá	Reserva Extrativista Marinha da Lagoa do Jequiá	Marine Extractive Reserve
Coroboba	Área de Relevante Interesse Ecológico Coroboba	Area of Outstanding Ecological Interest
Santa Rosa do Purus	Floresta Nacional de Santa Rosa do Purus	National Forest
Cazumbá Iracema	Reserva Extrativista Cazumbá Iracema	Extractive Reserve
Murici	Estação Ecológica de Murici	Ecological Station
Nascentes do Rio Parnaíba	Parque Nacional das Nascentes do Rio Parnaíba	National Park
Alto Tarauacá	Reserva Extrativista Alto Tarauacá	Extractive Reserve
Catimbau	Parque Nacional do Catimbau	National Park
Lago do Cunã	Reserva Extrativista Lago do Cunã	Extractive Reserve
Cunã	Estação Ecológica de Cunã	Ecological Station
Jatuarana	Floresta Nacional de Jatuarana	National Forest
Ná-sa Floresta	Floresta Nacional de Ná-sa Floresta	National Forest
AAçu	Floresta Nacional de AAçu	National Forest
Castanhão	Estação Ecológica do Castanhão	Ecological Station
Lago do Capanã Grande	Reserva Extrativista do Lago do Capanã Grande	Extractive Reserve
Mata Grande	Reserva Extrativista Mata Grande	Extractive Reserve
Mã do Juruá	Reserva Extrativista Mã do Juruá	Extractive Reserve
Batoque	Reserva Extrativista do Batoque	Extractive Reserve
Sobral	Floresta Nacional de Sobral	National Forest
Baço Juruá	Reserva Extrativista Baço Juruá	Extractive Reserve
Rio Jutá	Reserva Extrativista do Rio Jutá	Extractive Reserve
Jericoacoara	Parque Nacional de Jericoacoara	National Park
Delta do Parnaíba	Reserva Extrativista Marinha do Delta do Parnaíba	Marine Extractive Reserve
Tapaás-Arapuins	Reserva Extrativista Tapaás-Arapuins	Extractive Reserve
Auatí-Paraná	Reserva Extrativista Auatí-Paraná	Extractive Reserve
Cururupu	Reserva Extrativista de Cururupu	Extractive Reserve
Mulata	Floresta Nacional de Mulata	National Forest
São João da Ponta	Reserva Extrativista São João da Ponta	Extractive Reserve

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 10/25)

Maracanã	Reserva Extrativista Maracanã	Extractive Reserve
Mãe Grande de Curuá	Reserva Extrativista Mãe Grande de Curuá	Extractive Reserve
Soare	Reserva Extrativista Marinha de Soare	Marine Extractive Reserve
Montanhas do Tumucumaque	Parque Nacional Montanhas do Tumucumaque	National Park
Ribzinho do Anfrás	Reserva Extrativista Ribzinho do Anfrás	Extractive Reserve
Verde para Sempre	Reserva Extrativista Verde Para Sempre	Extractive Reserve
Morro da Pedreira	Área de Proteção Ambiental Morro da Pedreira	Environmental Protection Area
Ararpe-Apodi	Fresta Nacional do Ararpe-Apodi	National Forest
Mata Grande	Fresta Nacional da Mata Grande	National Forest
Praia do Sul	Fresta Nacional de Praia do Sul	National Forest
Restinga de Cabedelo	Fresta Nacional da Restinga de Cabedelo	National Forest
Jacundá	Fresta Nacional de Jacundá	National Forest
Iha Grande	Parque Nacional de Iha Grande	National Park
Contagem	Reserva Biológica da Contagem	Biological Reserve
Nascentes da Serra do Capaetã	Reserva Biológica Nascentes Serra do Cachimbo	Biological Reserve
Capetã-Taperaçu	Reserva Extrativista Marinha Capetã-Taperaçu	Marine Extractive Reserve
Tracuateua	Reserva Extrativista Marinha Tracuateua	Marine Extractive Reserve
Araçá-Peroba	Reserva Extrativista Marinha Araçá-Peroba	Marine Extractive Reserve
Gurupi-Prati	Reserva Extrativista Marinha de Gurupi-Prati	Marine Extractive Reserve
Mapuá	Reserva Extrativista Mapuá	Extractive Reserve
Itapuaçu-Baquari	Reserva de Desenvolvimento Sustentável Itapuaçu-Baquari	Sustainable Development Reserve
Ipaçu-Anilzinho	Reserva Extrativista Ipaçu-Anilzinho	Extractive Reserve
Mata Preta	Estação Ecológica de Mata Preta	Ecological Station
Araucárias	Parque Nacional das Araucárias	National Park
Araçá-Pruanã	Reserva Extrativista Araçá-Pruanã	Extractive Reserve
Chapada das Mesas	Parque Nacional da Chapada das Mesas	National Park
Palmareis	Fresta Nacional de Palmareis	National Forest
Assungui	Assungui	National Forest
Irati	Fresta Nacional de Irati	National Forest
Passa Quatro	Fresta Nacional de Passa Quatro	National Forest
Silvânia	Fresta Nacional de Silvânia	National Forest
Ibura	Fresta Nacional do Ibura	National Forest
Tapaçus	Área de Proteção Ambiental do Tapaçus	Environmental Protection Area
Jamxinim	Fresta Nacional do Jamxinim	National Forest
Crepori	Fresta Nacional do Crepori	National Forest
Trairão	Fresta Nacional do Trairão	National Forest
Amãni	Fresta Nacional do Amãni	National Forest
Jamxinim	Parque Nacional do Jamxinim	National Park
Ribonovo	Parque Nacional do Ribonovo	National Park
Batata-Tufari	Fresta Nacional de Batata-Tufari	National Forest
Guanabara	Estação Ecológica da Guanabara	Ecological Station
Chocorã-Mato Grosso	Reserva Extrativista Chocorã-Mato Grosso	Extractive Reserve
Perobas	Reserva Biológica das Perobas	Biological Reserve
Campos Gerais	Parque Nacional dos Campos Gerais	National Park
Araucárias	Reserva Biológica das Araucárias	Biological Reserve
Campos de Palmas	Refúgio de Vida Silvestre dos Campos de Palmas	Wildlife Refuge
Serra de Itabana	Parque Nacional da Serra de Itabana	National Park
Serra do Itaipá	Parque Nacional da Serra do Itaipá	National Park
Canavieiras	Reserva Extrativista de Canavieiras	Extractive Reserve
Ribiri	Reserva Extrativista Ribiri	Extractive Reserve
Terra Grande Pracuba	Reserva Extrativista Terra Grande Pracuba	Extractive Reserve
Ribonini	Reserva Extrativista Ribonini	Extractive Reserve
Campos Amazônicos	Parque Nacional dos Campos Amazônicos	National Park
Arapki	Reserva Extrativista Arapki	Extractive Reserve
Pau-Rosa	Fresta Nacional de Pau-Rosa	National Forest
Recanto das Araras de Terra Ronca	Reserva Extrativista do Recanto das Araras de Terra Ronca	Extractive Reserve
Lago do Cedro	Reserva Extrativista Lago do Cedro	Extractive Reserve
Gurupá-Imeãçu	Reserva Extrativista Gurupá-Imeãçu	Extractive Reserve
Juruena	Parque Nacional Juruena	National Park
Guapi-Mirim	Área de Proteção Ambiental de Guapi-Mirim	Environmental Protection Area
Planalto Central	Área de Proteção Ambiental do Planalto Central	Environmental Protection Area
Chandless	Chandless	State Park
RibGregório	RibGregório	State Forest
Mogno	Mogno	State Forest
RibLiberdade	RibLiberdade	State Forest
Cachoeira do Ferro do Ido	Monumento Natural Cachoeira do Ferro do Ido	Nature Monument
Nascente do Ribde Contas	Área de Relevante Interesse Ecológico Nascente do Ribde Contas	Area of Outstanding Ecological Interest
Serra do Robão	Serra do Robão	State Area of Outstanding Ecological Interest
Sete Passagens	Parque Estadual das Sete Passagens	State Park
Serra do Conduru	Serra do Conduru	State Park
Serra do Barbado	Área de Proteção Ambiental Serra do Barbado	State Environmental Protection Area
Santo Antônio	Área de Proteção Ambiental Santo Antônio	State Environmental Protection Area
Serra Branca/Raso da Catarina	Área de Proteção Ambiental Serra Branca / Raso da Catarina	State Environmental Protection Area
RibCapivara	Área de Proteção Ambiental RibCapivara	Environmental Protection Area
Pratigi	Área de Proteção Ambiental Pratigi	State Environmental Protection Area

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 11/25)

Lago de Pedra do Cavab	Área de Proteção Ambiental Lago De Pedra do Cavab	State Environmental Protection Area
Mangue Seco	Mangue Seco	State Environmental Protection Area
Marimbu/Iraquara	Área de Proteção Ambiental Marimbus / Iraquara	State Environmental Protection Area
Lagoa de Itaparica	Lagoa de Itaparica	State Environmental Protection Area
Joanes Ibitanga	Joanes Ibitanga	State Environmental Protection Area
Dunas e Veredas do Baixo	Dunas e Veredas do Baixo Maranhão do São Francisco	State Environmental Protection Area
Coroa Vermelha	Área de Proteção Ambiental Coroa Vermelha	State Environmental Protection Area
Caraíva/Trancoso	Área de Proteção Ambiental Caraíva/ Trancoso	State Environmental Protection Area
Baía-a de Camamu	Área de Proteção Ambiental Baía-a De Camamu	State Environmental Protection Area
Baía-a de Todos os Santos	Área de Proteção Ambiental Baía-a De Todos Os Santos	State Environmental Protection Area
Bacía do Rio de Janeiro	Bacía do Rio de Janeiro	State Environmental Protection Area
Bacía do Cobre / São Bartolomeu	Área de Proteção Ambiental Bacía do Cobre / São Bartolomeu	State Environmental Protection Area
Plataforma Continental do Litoral Norte	Área de Proteção Ambiental Plataforma Continental do Litoral Norte	State Environmental Protection Area
Lagoa Encantada e Rio de Janeiro	Área de Proteção Ambiental Lagoa Encantada	State Environmental Protection Area
Costa de Itacaraió/Serra Grande	Área de Proteção Ambiental Costa De Itacaraió / Serra Grande	State Environmental Protection Area
Caminhos Ecológicos da Boa Esperança	Área de Proteção Ambiental Caminhos Ecológicos da Boa Esperança	State Environmental Protection Area
Araucárias	Araucárias	State Park
Fritz Polumann	Fritz Polumann	State Park
Rio Canoas	Rio Canoas	State Park
Acarai	Acarai	State Park
Águas Vertentes	Área de Proteção Ambiental Águas Vertentes	State Environmental Protection Area
Barreira Branca	Barreira Branca	State Environmental Protection Area
Chapada dos Guimarães	Chapada dos Guimarães	State Environmental Protection Area
Escarpa Devoniana	Escarpa Devoniana	State Environmental Protection Area
Serra da Esperança	Serra da Esperança	State Environmental Protection Area
Serra da Jabá	Área de Proteção Ambiental Serra da Jabá	Environmental Protection Area
Parneiros	Área de Proteção Ambiental Parneiros	Environmental Protection Area
Serra Geral de Goiás	Área de Proteção Ambiental Serra Geral de Goiás	Environmental Protection Area
Nascentes de Araguaia	Nascentes de Araguaia	State Environmental Protection Area
Conceição da Barra	Conceição da Barra	State Environmental Protection Area
Goapaba-Açu	Goapaba-Açu	State Environmental Protection Area
Guanandy	Guanandy	State Environmental Protection Area
Praia More	Praia More	State Environmental Protection Area
Três Ilhas	Três Ilhas	State Environmental Protection Area
Rio Irai	Rio Irai	State Environmental Protection Area
Rio Passauna	Rio Passauna	State Environmental Protection Area
Rio Pequeno	Rio Pequeno	State Environmental Protection Area
Rio Iraquara	Rio Iraquara	State Environmental Protection Area
Rio Verde	Rio Verde	State Environmental Protection Area
Salto Magessi	Salto Magessi	State Environmental Protection Area
Meandros do Rio Araguaia	Meandros do Rio Araguaia	State Environmental Protection Area
Fernandes	Área de Proteção Ambiental Fernandes	State Environmental Protection Area
Foz do Rio Santa Tereza	Área de Proteção Ambiental Foz do Rio Santa Tereza	Environmental Protection Area
Guaraqueá	Guaraqueá	State Environmental Protection Area
Iha do Banana/Cantão	Área de Proteção Ambiental Iha do Banana/cantão	State Environmental Protection Area
Japão	Área de Proteção Ambiental Japão	Environmental Protection Area
Lago de Palmas	Área de Proteção Ambiental Lago de Palmas	Environmental Protection Area
Lago de Peixe/Angical	Área de Proteção Ambiental Lago de Peixe/angical	Environmental Protection Area
Lago de Santa Isabel	Área de Proteção Ambiental Lago De Santa Isabel	State Environmental Protection Area
Lago de São Salvador do Tocantins	Lago de São Salvador do Tocantins, Paranaíba	State Environmental Protection Area
Lajão	Área de Proteção Ambiental Lajão	State Environmental Protection Area
Pouso Alto	Área de Proteção Ambiental Pouso Alto	State Environmental Protection Area
Rota do Sol	Rota do Sol	State Environmental Protection Area
Sem Náutico Menor de Mariana	Sem Náutico Menor de Mariana	State Environmental Protection Area
Serra das Gaúss e da Portaria	Área de Proteção Ambiental da Serra Das Gaúss E Da Portaria	Environmental Protection Area
Serra do Lajado	Área de Proteção Ambiental Serra do Lajado	State Environmental Protection Area
Serra São José	Serra São José	State Environmental Protection Area
Rio Doce	Rio Doce	State Area of Special Protection
Barreiro	Barreiro	State Area of Special Protection
Catarina	Catarina	State Area of Special Protection
Cercadinho	Cercadinho	State Area of Special Protection
Confusão	Confusão	State Area of Special Protection
Cárrego Feio e Fundo e Ará	Cárrego Feio e Fundo e Área	State Area of Special Protection
Lapa Nova da Vazante	Lapa Nova da Vazante	State Area of Special Protection
Mutuca	Mutuca	State Area of Special Protection
Pico do Ituruna	Pico do Ituruna	State Area of Special Protection
Ribeirão do Urubu	Ribeirão do Urubu	State Area of Special Protection
Rio-Moço e Bãisam	Rio-Moço e Bãisam	State Area of Special Protection
Santa Izabel Espanha	Santa Izabel Espanha	State Area of Special Protection
Soberbo	Soberbo	State Area of Special Protection
Tabão	Tabão	State Area of Special Protection
Todos os Santos	Todos os Santos	State Area of Special Protection
Jabá	RESERVA BIOLÓGICA JABÁ	Biological Reserve
Águas de São João	Águas de São João	Relevant Ecological Interest Area
São Domingos	São Domingos	State Area of Outstanding Ecological Interest

Source: <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 12/25)

Iha do Mel	Parque Estadual da Iha do Mel	State Park
Cachoeira do Urubu	Cachoeira do Urubu	State Environmental Protection Area
Serra das Mangabeiras	Serra das Mangabeiras	State Environmental Protection Area
Rangei	Rangei	State Environmental Protection Area
Antônio Mujica Nava	Antônio Mujica Nava	State Ecological Station
Acauã	Estação Ecológica de Acauã	Ecological Station
Água Limpa	Estação Ecológica de Água Limpa	Ecological Station
Angatuba	Estação Ecológica Angatuba	Ecological Station
Assis	Estação Ecológica de Assis	Ecological Station
Carregos dos Fechos	Estação Ecológica de Fechos	Ecological Station
Corumbá	Estação Ecológica de Corumbá	Ecological Station
Caã	Caã	State Ecological Station
Aratinga	Aratinga	State Ecological Station
Fernandes Pinheiro	Fernandes Pinheiro	State Ecological Station
Mar de Espanha	Estação Ecológica Mar de Espanha	Ecological Station
Mata do Cedro	Estação Ecológica Mata do Cedro	Ecological Station
Mata dos Ausentes	Estação Ecológica Mata dos Ausentes	Ecological Station
Mogi Guaçu	Estação Ecológica Mogi Guaçu	Ecological Station
Parapanema	Estação Ecológica de Parapanema	Ecological Station
Rib da Casca	Rib da Casca	State Ecological Station
Rib dos Touros	Rib dos Touros	State Ecological Station
Santa Maria	Estação Ecológica de Santa Maria	Ecological Station
Araraquara	Araraquara	State Extractive Station
Assis	Assis	State Extractive Station
Bauru	Bauru	State Extractive Station
Bento Quirino	Bento Quirino	State Extractive Station
Buri	Buri	State Extractive Station
Casa Branca	Casa Branca	State Extractive Station
Itapetinga	Itapetinga	State Extractive Station
Itapeva	Itapeva	State Extractive Station
Itararé	Itararé	State Extractive Station
Itapina	Itapina	State Extractive Station
Jaú	Jaú	State Extractive Station
Luis Antônio	Luis Antônio	State Extractive Station
Marã-lá	Marã-lá	State Extractive Station
Mogi Guaçu	Mogi Guaçu	State Extractive Station
Mogi Mirim	Mogi Mirim	State Extractive Station
Paraguáçu Paulista	Paraguáçu Paulista	State Extractive Reserve
Pedemeiras	Pedemeiras	State Extractive Station
Santa Rita do Passa Quatro	Santa Rita do Passa Quatro	State Extractive Station
São José do Rib Preto	São José do Rib Preto	State Extractive Station
Tupi	Tupi	State Extractive Station
Angatuba	Angatuba	State Forest
Batatas	Batatas	State Forest
Bebedouro	Bebedouro	State Forest
Cajuru	Cajuru	State Forest
Araguaia	Reserva Estadual do Araguaia	State Forest
Palmito	Palmito	State Forest
Edmundo Navarro de Andrade	Edmundo Navarro de Andrade	State Forest
Manduri	Manduri	State Forest
Parapanema	Parapanema	State Forest
Praju	Praju	State Forest
Santa Bárbara I	Santa Bárbara I	State Forest
Santa Bárbara II	Santa Bárbara II	State Forest
Cesário Lange	Cesário Lange	Other Area
Gera do Russi	Gera do Russi	Other Area
Palmital	Palmital	Other Area
Árvores Fossilizadas do Est. do Tocantins	Árvores Fossilizadas do Est. do Tocantins	State Nature Monument
Itapeva	Itapeva	State Park
Aguapeá	Parque Estadual do Aguapeá	State Park
Águas do Cubã	Águas do Cubã	State Park
Aberto Louren	Aberto Louren	State Park
Itamiro de Moura Pacheco	Parque Estadual Itamiro de Moura Pacheco	State Park
Irribri	Parque Estadual Irribri	State Park
Campanha do Encantado	Parque Estadual da Campanha do Encantado	State Park
Cristalino I	Cristalino I	State Park
Cristalino II	Cristalino II	State Park
Cidade Mãe e Bonifácia	Cidade Mãe e Bonifácia	State Park
Iha do Mel	Iha do Mel	State Park
Mata São Francisco	Mata São Francisco	State Park
Nascente Rib Taquari	Parque Estadual das Nascentes do Rib Taquari	State Park
São de	São de	State Park
Serra Azul	Serra Azul	State Park
Serra da Baítaca	Serra da Baítaca	State Park
Serra Dourada	Parque Estadual da Serra Dourada	State Park

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 13/25)

Nascentes do Rio Parnaíba	Nascentes do Rio Parnaíba	State Park
Paraíba	Parque Estadual de Paraíba	State Park
Sonora	Parque Estadual da Serra de Sonora	State Park
Terra Ronca	Parque Estadual de Terra Ronca	State Park
Araguaia	Parque Estadual do Araguaia	State Park
Boguaçu	Boguaçu	State Park
Cantão	Parque Estadual do Cantão	State Park
Cerrado	Cerrado	State Park
Guarã	Guarã	State Park
Guará	Guará	State Park
Ivinhema	Parque Estadual das Varzeas do Rio Ivinhema	State Park
Jalapão	Parque Estadual do Jalapão	State Park
Lago Azul	Lago Azul	State Park
Lajado	Parque Estadual do Lajado	State Park
Pantanal do Rio Negro	Parque Estadual do Pantanal do Rio Negro	State Park
Pau-Óco	Pau-Óco	State Park
Prosa	Parque Estadual do Prosa	State Park
Rio Guarani	Rio Guarani	State Park
Rio Peixe	Parque Estadual do Rio Peixe	State Park
Matas do Segredo	Parque Estadual Matas do Segredo	State Park
Xingu	Xingu	State Park
Dom Osório Stöfel	Dom Osório Stöfel	State Park
Pirneus	Parque Estadual dos Pirneus	State Park
Embu-Guaçu	Embu-Guaçu	State Park
Furnas do Bom Jesus	Parque Estadual das Fumas do Bom Jesus	State Park
Grão-Mogol	Parque Estadual Grão Mogol	State Park
Gruta da Lagoa Azul	Gruta da Lagoa Azul	State Park
Guarapiranga	Guarapiranga	State Park
Iha das Flores	Iha das Flores	State Park
João Paulo II	João Paulo II	State Park
Professor José Waccho	Professor José Wacchowicz	State Park
Juquery	Parque Estadual do Juquery	State Park
Lagoa do Cajueiro	Parque Estadual Lagoa do Cajueiro	State Park
Mananciais de Campos do Jordão	Parque Estadual dos Mananciais de Campos do Jordão	State Park
Massaró Okamura	Massaró Okamura	State Park
Mata Seca	Parque Estadual Mata Seca	State Park
Nova Baden	Parque Estadual Nova Baden	State Park
Pau Brasil Sarinha	Pau Brasil Sarinha	State Park
Pico do Itambá	Parque Estadual Pico do Itambá	State Park
Pico Paraná	Pico Paraná	State Park
Rio Corrente	Parque Estadual Rio Corrente	State Park
Rio Pardo	Rio Pardo	State Park
Rio Preto	Parque Estadual Rio Preto	State Park
Roberto Ribas Lange	Roberto Ribas Lange	State Park
Serra do Papagaio	Parque Estadual Serra do Papagaio	State Park
Serra Negra	Parque Estadual Serra Negra	State Park
Serra Roleta Moisés	Parque Estadual Serra do Roleta Moisés	State Park
Sete Saídas	Parque Estadual Sete Saídas	State Park
Sumidouro	Parque Estadual do Sumidouro	State Park
Telmorteagal	Telmorteagal	State Park
Tucumã	Tucumã	State Park
Verde Grande	Parque Estadual Verde Grande	State Park
Veredas do Acari	Reserva de Desenvolvimento Sustentável Veredas do Acari	State Sustainable Development Reserve
Veredas do Peruaçu	Parque Estadual Veredas do Peruaçu	State Park
Encontro das Águas	Encontro das Águas	State Park
Serra dos Martins-Ribs/Andorinhas	Serra dos Martins-Ribs/Andorinhas	State Park
Guarita	Guarita	State Park
Exposições	Exposições	State Park
Sombra da Tarde	Sombra da Tarde	State Park
Quibombo	Quibombo	State Park
Barra	Barra	State Biological Reserve
Jaíba	Reserva Biológica Jaíba	Biological Reserve
Lapinha	Lapinha	State Biological Reserve
Mata Paludosa	Mata Paludosa	State Biological Reserve
Sagarana/Barra	Sagarana/Barra	State Biological Reserve
Serra Azul	Reserva Biológica Serra Azul	Biological Reserve
São Donato	São Donato	State Biological Reserve
Jacarenema	Jacarenema	State Ecological Reserve
BGE	BGE	State Ecological Reserve
Guarba/Roosevelt	Guarba/Roosevelt	State Extractive Reserve
Lagoa São Paulo	Lagoa São Paulo	State Extractive Station
Carrasco da Biquinha	Carrasco da Biquinha	State Forest Reserve
Jurema	Jurema	State Forest Reserve
Salinho	Salinho	State Forest Reserve
Seca São Figueira e Salinho	Seca São Figueira e Salinho	State Forest Reserve

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 14/25)

Banhado dos Pachecos	Banhado dos Pachecos	State Wildlife Refuge
Corixão da Mata Azul	Corixão da Mata Azul	State Wildlife Refuge
Queirão do Araguaia	Queirão do Araguaia	State Wildlife Refuge
Rio Cristalino	Rio Cristalino	State Wildlife Refuge
Rio das Mortes	Rio das Mortes	State Wildlife Refuge
Serungal Trunfo	Serungal Trunfo	Other Area
Sagarana Mata Seca	Sagarana Mata Seca	State Biological Reserve
Sagarana Mocho	Sagarana Mocho	State Biological Reserve
Sagarana Logradouro	Sagarana Logradouro	State Biological Reserve
Emida Dom Bosco	Emida Dom Bosco	State Park
Copaibas	Copaibas	State Park
Recanto das Emas	Recanto das Emas	State Park
Garças Branca	Garças Branca	State Park
Pequizeiro	Pequizeiro	State Park
Águas Claras	Águas Claras	State Park
Bosque	Área do Bosque	Relevant Ecological Interest Area
Grande Iba	Grande Iba	State Area of Outstanding Ecological Interest
Jucelino Kubitschek	Jucelino Kubitschek	State Area of Outstanding Ecological Interest
Trás Meninas	Trás Meninas	State Park
Cerradão	Área do Cerradão	Relevant Ecological Interest Area
Retirinho	Retirinho	State Park
Rio Descoberto	Rio Descoberto	State Park
Lagoa Joaquim de Medeiros	Lagoa Joaquim de Medeiros	State Park
Bosque dos Eucaíptos	Bosque dos Eucaíptos	State Park
Sobradinho	Sobradinho	State Park
Candango Áendia	Candango Áendia	State Park
Cachoeira do Piripau	Cachoeira do Piripau	State Park
Ponte Alta do Gama	Ponte Alta do Gama	State Park
Pedra da Boca	Pedra da Boca	State Park
Jacarapó	Jacarapó	State Park
Área Vermelha	Área Vermelha	State Marine Park
Aratu	Aratu	State Park
Onças	Onças	State Environmental Protection Area
Pau Brasil	Pau Brasil	Other Area
Lagamar do Cauapé	Lagamar do Cauapé	State Environmental Protection Area
Serra da Aratanha	Serra da Aratanha	State Environmental Protection Area
Serras do Gerônimo Mendanha	Serras do Gerônimo Mendanha	State Environmental Protection Area
Pau Brasil	Área de Proteção Ambiental do Pau Brasil	State Environmental Protection Area
Frades	Área de Proteção Ambiental da Bacia do Rio dos Frades	State Environmental Protection Area
da Bacia do Rio Macacu	da Bacia do Rio Macacu	State Environmental Protection Area
Serra da Condição	Parque Estadual da Serra da Condição	State Park
Iha Grande	Iha Grande	State Park
Trás Picos	Trás Picos	State Park
Joatinga	Joatinga	State Ecological Reserve
Guaxindiba	Estação Ecológica Estadual de Guaxindiba	Ecological Station
Cabeceira do Rio das Bacias	Cabeceira do Rio das Bacias	State Environmental Protection Area
Maracanã	Maracanã	State Environmental Protection Area
Bakada Maranhense Subárea do Baco Pindará	Bakada Maranhense Subárea do Baco Pindará	State Environmental Protection Area
Bakada Maranhense Subárea do Estuário	Bakada Maranhense Subárea do Estuário	State Environmental Protection Area
Faz do Rio Preguças	Faz do Rio Preguças	State Environmental Protection Area
Upaon-Açu / Miriba / Alto Preguças	Upaon-Açu / Miriba / Alto Preguças	State Environmental Protection Area
Itapiracá	Itapiracá	State Environmental Protection Area
Amanã	Reserva de Desenvolvimento Sustentável Amanã	State Sustainable Development Reserve
Catua Ixkuna	Catua Ixkuna	State Extractive Reserve
Piçarraçu Purus	Piçarraçu Purus	State Sustainable Development Reserve
Rio Amapá	Rio Amapá	State Sustainable Development Reserve
Uacari	Uacari	State Sustainable Development Reserve
Cujubim	Reserva de Desenvolvimento Sustentável Cujubim	State Sustainable Development Reserve
Uatumã	Uatumã	State Sustainable Development Reserve
Maués	Fresta Estadual Maués	State Forest
Canumã	Reserva de Desenvolvimento Sustentável Canumã	State Sustainable Development Reserve
Rio Urubu	Fresta Estadual Rio Urubu	State Forest
Mãdo Rio Negro-Açu / Apuauzinho	Mãdo Rio Negro-Açu / Apuauzinho	State Environmental Protection Area
Mãdo Rio Negro-Tarumã / Açu / Tarumã e Mirim	Mãdo Rio Negro-Tarumã / Açu / Tarumã e Mirim	State Environmental Protection Area
Rio Negro-Setor Sul	Rio Negro-Setor Sul	State Park
MD Rio Negro-Paduari/Solimões	MD Rio Negro-Paduari/Solimões	State Environmental Protection Area
Sumaúma	Parque Estadual Sumaúma	State Park
Rio Negro-Setor Norte	Rio Negro-Setor Norte	State Park
Arpuaçu	Arpuaçu	State Forest
Guarba	Guarba	State Extractive Reserve
Guarba	Guarba	State Park
Manacorá	Manacorá	State Forest
Barariti	Barariti	State Sustainable Development Reserve
Apuá	Apuá	State Forest
Sucunduri	Sucunduri	State Park

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 15/25)

Sucunduri	Sucunduri	State Forest
Arpuañã	Arpuañã	State Sustainable Development Reserve
Rib Jacaranã	Rib Jacaranã	State Extractive Reserve
Maracatara	Maracatara	State Extractive Reserve
Massaranduba	Massaranduba	State Extractive Reserve
Angeim - Equitã	Angeim - Equitã	State Extractive Reserve
Ipã	Ipã	State Extractive Reserve
Sucupira	Sucupira	State Extractive Reserve
Cedro	Cedro	State Forest
Mogno	Mogno	State Extractive Reserve
Garrote	Garrote	State Extractive Reserve
Aquarquara	Aquarquara	State Extractive Reserve
Seringueiras	Seringueiras	State Extractive Reserve
Roxinho	Roxinho	State Extractive Reserve
Freiã	Freiã	State Extractive Reserve
Piquã	Piquã	State Extractive Reserve
Castanheira	Castanheira	State Extractive Reserve
Itauba	Itauba	State Extractive Reserve
Gavão	Gavão	State Forest
Perquitos	Perquitos	State Forest
Mutum	Mutum	State Forest
Araras	Araras	State Forest
Tucano	Tucano	State Forest
Jatobã	Jatobã	State Extractive Reserve
Curralinho	Curralinho	State Extractive Reserve
Rib Pedras Negras	Rib Pedras Negras	State Extractive Reserve
Bica do Ipu	Bica do Ipu	State Environmental Protection Area
Lagoa de Jipca	Lagoa de Jipca	State Environmental Protection Area
Pedra da Roca do Meio	Pedra da Roca do Meio	State Marine Park
Dunas da Lagoinha	Dunas da Lagoinha	State Environmental Protection Area
Pacó	Pacó	State Ecological Station
Pacó	Pacó	State Environmental Protection Area
Cearã	Cearã	State Environmental Protection Area
Lagoa de Uruã	Lagoa de Uruã	State Environmental Protection Area
Faças de Beberibe	Faças de Beberibe	State Nature Monument
Monólitos de Quixadá	Monólitos de Quixadá	State Nature Monument
Rib Pacoti	Rib Pacoti	State Environmental Protection Area
Estuário do Rib Munda	Estuário do Rib Munda	State Environmental Protection Area
Estuário do Rib Curu	Estuário do Rib Curu	State Environmental Protection Area
Dunas de Paracuru	Dunas de Paracuru	State Environmental Protection Area
Igarapós do Juruena	Igarapós do Juruena	State Park
Grão Pará	Estação Ecológica do Grão Pará	Ecological Station
Faro	Fresta Estadual de Faro	State Forest
Paru	Fresta Estadual de Paru	State Forest
Trombetas	Fresta Estadual de Trombetas	State Forest
Maçuru	Reserva Biológica de Maçuru	Biological Reserve
Trinco do Xingu	Área de Proteção Ambiental Trinco do Xingu	Environmental Protection Area
Irrí	Fresta Estadual de Irrí	State Forest
Praia do Sapo	Praia do Sapo	State Environmental Protection Area
Bom Jardim/Passa Tudo	Bom Jardim/Passa Tudo	State Environmental Protection Area
Nadr Jã	Nadr Jã	Particular Reserve of Natural Heritage
Sumaã	Sumaã	Particular Reserve of Natural Heritage
Tbrã	Tbrã	Particular Reserve of Natural Heritage
Fazenda Poneira	Fazenda Poneira	Particular Reserve of Natural Heritage
São Gerardo do Araguaia	Área de Proteção Ambiental de São Gerardo do Araguaia	Environmental Protection Area
Iha do Combu	Área de Proteção Ambiental da Iha do Combu	Environmental Protection Area
Manacás		
Abastecimento de Água	Manacás Abastecimento de Água de Belém	State Environmental Protection Area
Belém	Belém	State Park
Jabotiva-Jatim	Jabotiva-Jatim	State Environmental Protection Area
Tucuruá	Tucuruá	State Environmental Protection Area
Pucuruá - Ararã	Reserva de Desenvolvimento Sustentável Pucuruá - Ararã	Sustainable Development Reserve
Abobalã	Abobalã	State Sustainable Development Reserve
Monte Alegre	Parque Estadual de Monte Alegre	State Park
Paytuna	Área de Proteção Ambiental Paytuna	Environmental Protection Area
Avarã	Avarã	State Forest
Mãdo Rib Negro II	Mãdo Rib Negro II	Indigenous Area
Ato Rib Negro	Ato Rib Negro	Indigenous Area
Mãdo Rib Negro I	Mãdo Rib Negro I	Indigenous Area
Trombetas/Mapuera	Trombetas/Mapuera	Indigenous Area
Zo'e	Zo'e	Indigenous Area
Babó	Babó	Indigenous Area
Cuã - Cuã / Marabitanas	Cuã - Cuã / Marabitanas	Indigenous Area
São Marcos - RR	São Marcos - RR	Indigenous Area
Anaro	Anaro	Indigenous Area
Moskow	Moskow	Indigenous Area

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 16/25)

Pankararã	Pankararã	Indigenous Area
Brejo do Burgo	Brejo do Burgo	Indigenous Area
Krenak	Krenak	Indigenous Area
Guatã	Guatã	Indigenous Area
Kadwã	Kadwã	Indigenous Area
Kulina do Rio Envira	Kulina do Rio Envira	Indigenous Area
Jamnaua/Envira	Jamnaua/Envira	Indigenous Area
Arara do Rio Branco	Arara do Rio Branco	Indigenous Area
Água Preta/Inari	Água Preta/Inari	Indigenous Area
Camadeni	Camadeni	Indigenous Area
São Domingos do Jacapari	São Domingos do Jacapari Estação	Indigenous Area
Rizinho do Alto Envira	Rizinho do Alto Envira	Indigenous Area
Rio Apaporis	Rio Apaporis	Indigenous Area
Nova Esperança da do Rio	Nova Esperança da do Rio Jandiatuba	Indigenous Area
Bom Intento	Bom Intento	Indigenous Area
Matintin	Matintin	Indigenous Area
Guanabara	Guanabara	Indigenous Area
Boca do Cano do Corredor	Boca do Cano do Corredor	Indigenous Area
Porto Limoeiro	Porto Limoeiro	Indigenous Area
Porto Redenção	Porto Redenção	Indigenous Area
São Sebastião	São Sebastião	Indigenous Area
Prosperidade	Prosperidade	Indigenous Area
Santa Cruz de Nova Alencara	Santa Cruz de Nova Alencara	Indigenous Area
Barro Alto	Barro Alto	Indigenous Area
Maratã	Maratã	Indigenous Area
São Gabriel/São Salvador	São Gabriel/São Salvador	Indigenous Area
São Francisco do Canimari	São Francisco do Canimari	Indigenous Area
Sapotã	Sapotã	Indigenous Area
Sururuã	Sururuã	Indigenous Area
Nauã	Nauã	Indigenous Area
Arara do Rio Amônia	Arara do Rio Amônia	Indigenous Area
Mawetek	Mawetek	Indigenous Area
Kampa do Igarapé Primavera	Kampa do Igarapé Primavera	Indigenous Area
Kaxawã do Baco Rio Jordão	Kaxawã do Baco Rio Jordão	Indigenous Area
Kaxawã iSeringal Independência	Kaxawã iSeringal Independência	Domínio Indígena
Kaxawã iSeringal Curraíno	Kaxawã iSeringal Curraíno	Indigenous Area
Inauni/Teuini	Inauni/Teuini	Indigenous Area
Garaperi/Lago da Vitória	Garaperi/Lago da Vitória	Indigenous Area
Jamhawa do Rio Caetã	Jamhawa do Rio Caetã	Indigenous Area
Jamhawa da Cobca São Paulo	Jamhawa da Cobca São Paulo	Indigenous Area
Vaparaíso	Vaparaíso	Indigenous Area
Jamamado Lourdes	Jamamado Lourdes	Indigenous Area
Caipucã	Caipucã	Indigenous Area
Cuiu-Cuiu	Cuiu-Cuiu	Indigenous Area
Rio Tãa	Rio Tãa	Indigenous Area
Mapari	Mapari	Indigenous Area
Parana do Paricã	Parana do Paricã	Indigenous Area
Baco Rio Negro	Baco Rio Negro	Indigenous Area
Espírito Santo	Espírito Santo	Indigenous Area
Acapuride Cima	Acapuride Cima	Indigenous Area
Rizinho	Rizinho	Indigenous Area
Kumaru do Lago Uaã	Kumaru do Lago Uaã	Indigenous Area
Porto Praia	Porto Praia	Indigenous Area
Tupã-Supã	Tupã-Supã	Indigenous Area
Marã	Marã	Indigenous Area
CaipuriAtravessado	CaipuriAtravessado	Indigenous Area
Rio Cuêras	Rio Cuêras	Indigenous Area
Fortaleza do Patauã	Fortaleza do Patauã	Indigenous Area
São Francisco	São Francisco	Indigenous Area
Fortaleza do Castanho	Fortaleza do Castanho	Indigenous Area
Lago do Barrigudo	Lago do Barrigudo	Indigenous Area
Vista Alegre	Vista Alegre	Indigenous Area
Igarapé Pã	Igarapé Pã	Indigenous Area
Rio Urubu	Rio Urubu	Indigenous Area
Lago do Marinho	Lago do Marinho	Indigenous Area
Patauã	Patauã	Indigenous Area
Appã	Appã	Indigenous Area
Poncãno	Poncãno	Indigenous Area
Pantabã	Pantabã	Indigenous Area
Jauary	Jauary	Indigenous Area
Paranã do Arauatã	Paranã do Arauatã	Indigenous Area
Rio Jumas	Rio Jumas	Indigenous Area
Muratuba	Muratuba	Indigenous Area
São Pedro	São Pedro	Indigenous Area
Lago do Limão	Lago do Limão	Indigenous Area

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 17/25)

Migue/Josefa	Migue/Josefa	Indigenous Area
Igarapão-Ásua	Igarapão-Ásua	Indigenous Area
Arary	Arary	Indigenous Area
Himeriã	Himeriã	Indigenous Area
Kulina do Rio Ueraí - Matatbem	Kulina do Rio Ueraí - Matatbem	Indigenous Area
Apurina do Igarapão Mucum	Apurina do Igarapão Mucum	Indigenous Area
Mamorã	Mamorã	Indigenous Area
São João/Santa Vitória	São João/Santa Vitória	Indigenous Area
Iguirama	Iguirama	Indigenous Area
Monte/Primavera/Goaba	Monte/Primavera/Goaba	Indigenous Area
Rio Pardo	Rio Pardo	Indigenous Area
Tenharim Mamebs (Geba B)	Tenharim Mamebs (Geba B)	Indigenous Area
Patuba	Patuba	Indigenous Area
Setemã	Setemã	Indigenous Area
Aramba	Aramba	Indigenous Area
Lago Jauri	Lago Jauri	Indigenous Area
Lago Capanã	Lago Capanã	Indigenous Area
Torã	Torã	Indigenous Area
Dahui	Dahui	Indigenous Area
Jamnawa do Guapirã	Jamnawa do Guapirã	Indigenous Area
M'barakay	M'barakay	Indigenous Area
Arpuanã	Arpuanã	Indigenous Area
Kwazá do Rio São Pedro	Kwazá do Rio São Pedro	Indigenous Area
Rio Omerã	Rio Omerã	Indigenous Area
Lagoa dos Brincos	Lagoa dos Brincos	Indigenous Area
Urapuru	Urapuru	Indigenous Area
Paukairaçu	Paukairaçu	Indigenous Area
Portal do Encantado	Portal do Encantado	Indigenous Area
Panarã	Panarã	Indigenous Area
Sarauã	Sarauã	Indigenous Area
Cobra Grande	Cobra Grande	Indigenous Area
São João	São João	Indigenous Area
Nova Vista	Nova Vista	Indigenous Area
Rio Marã	Rio Marã	Indigenous Area
Bako Tapas II	Bako Tapas II	Indigenous Area
Km 43	Km 43	Indigenous Area
São Luiz do Tapas	São Luiz do Tapas	Indigenous Area
Pimental	Pimental	Indigenous Area
Mixipi	Mixipi	Indigenous Area
Angezinho	Angezinho	Indigenous Area
Amã	Amã	Indigenous Area
Borari de Alter do Chão	Borari de Alter do Chão	Indigenous Area
Bako Tapas	Bako Tapas	Indigenous Area
Bragança - Marituba	Bragança - Marituba	Indigenous Area
Marituba	Marituba	Indigenous Area
Munduruku-Taquara	Munduruku-Taquara	Indigenous Area
Juruna do Km 17	Juruna do Km 17	Indigenous Area
Mã	Mã	Indigenous Area
Pacaí	Pacaí	Indigenous Area
Barreirinha	Barreirinha	Indigenous Area
Nova Jacundã	Nova Jacundã	Dominal Indigenous Area
Kuruáya	Kuruáya	Indigenous Area
Xpaya	Xpaya	Indigenous Area
Badonkore	Badonkore	Indigenous Area
Las Casas	Las Casas	Indigenous Area
Karaí Santana do Araguaia	Karaí Santana do Araguaia	Indigenous Area
Maranduba	Maranduba	Indigenous Area
Tremembão de Amofala	Tremembão de Amofala	Indigenous Area
Cãrrego João Pereira	Cãrrego João Pereira	Indigenous Area
Tremembão de Queimadas	Tremembão de Queimadas	Indigenous Area
Tapeba	Tapeba	Indigenous Area
Pituary	Pituary	Indigenous Area
Vila Real	Vila Real	Indigenous Area
Atkum	Atkum	Indigenous Area
Trukã	Trukã	Indigenous Area
Tuxã	Tuxã	Indigenous Area
Quixaba - Fazenda Pedrosa	Quixaba - Fazenda Pedrosa	Acquired Indigenous Area
Wawi	Wawi	Indigenous Area
Ubawawe	Ubawawe	Indigenous Area
Parque do Xingu	Parque do Xingu	Indigenous Area
Bateão	Bateão	Indigenous Area
Rio Arraás/BR 080	Rio Arraás/BR 080	Indigenous Area
Ponte de Pedra	Ponte de Pedra	Indigenous Area
Estação São Pareis	Estação São Pareis	Indigenous Area
Batovi	Batovi	Indigenous Area

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 19/25)

Sassorã ³	Sassorã ³	Indigenous Reserve
Takuaraty/Yvykuarusu	Takuaraty/Yvykuarusu	Indigenous Area
Mato Preto	Mato Preto	Indigenous Area
Sombrerito	Sombrerito	Indigenous Area
Cerrito	Cerrito	Indigenous Area
Yvy-katu	Yvy-katu	Indigenous Area
Xetã i	Xetã i	Indigenous Area
Yvyporã& Laranjinha	Yvyporã& Laranjinha	Indigenous Area
O Fayãe-Xavante	O Fayãe-Xavante	Indigenous Area
Avã i-Guaranido Ocoã-	Avã i-Guaranido Ocoã-	Indigenous Area
Tekoha Anetete	Tekoha Anetete	Indigenous Reserve
Icatu	Icatu	Indigenous Area
Sã&o Jeronimo	Sã&o Jeronimo	Indigenous Area
Tbagy/Mococa	Tbagy/Mococa	Indigenous Area
Barã&o de Antonina	Barã&o de Antonina	Indigenous Area
Apucarana	Apucarana	Indigenous Reserve
Vanu ire	Vanu ire	Indigenous Area
Ararã i	Ararã i	Indigenous Area
Guaranido Araã S a i	Guaranido Araã S a i	Indigenous Area
R b dos Andós	R b dos Andós	Indigenous Area
Kangang de Irã ii	Kangang de Irã ii	Indigenous Area
Nonoi/R b da Vã rzea	Nonoi/R b da Vã rzea	Indigenous Area
Guarita	Guarita	Indigenous Area
Laranjinha	Laranjinha	Indigenous Area
P nha&nho	P nha&nho	Acquired Indigenous Area
Inhacorã i	Inhacorã i	Indigenous Area
Guaranido Aguapeu	Guaranido Aguapeu	Indigenous Area
R b das Cobras	R b das Cobras	Indigenous Area
Boa Vista - PR	Boa Vista - PR	Indigenous Area
Faxnal	Faxnal	Indigenous Area
Ivai	Ivai	Indigenous Area
Queimadas	Queimadas	Indigenous Area
Marrecas	Marrecas	Dominal Indigenous Area
Mangue rinha	Mangue rinha	Indigenous Reserve
R b Areã	R b Areã	Indigenous Area
Iha da Cotinga	Iha da Cotinga	Indigenous Area
Morro Alto	Morro Alto	Indigenous Area
P ndoty	P ndoty	Indigenous Area
Cacique Doble	Cacique Doble	Indigenous Area
Xapecã ³	Xapecã ³	Indigenous Area
Palmás	Palmás	Indigenous Area
To Bo Imbu	To Bo Imbu	Indigenous Area
A beia Kondã i	A beia Kondã i	Indigenous Reserve
To Bo Chim banguê	To Bo Chim banguê	Indigenous Area
To Bo Chim banguê II	To Bo Chim banguê II	Indigenous Area
To Bo P nha i	To Bo P nha i	Indigenous Area
Guarani Votouro	Guarani Votouro	Indigenous Area
Votouro	Votouro	Indigenous Area
Votouro/Kandã	Votouro/Kandã	Indigenous Area
R b dos Pardos	R b dos Pardos	Indigenous Area
Ventarra	Ventarra	Indigenous Area
L ge ro	L ge ro	Indigenous Area
M assãmbu	M assãmbu	Indigenous Area
Carreteiro	Carreteiro	Indigenous Area
Monte Caseros	Monte Caseros	Indigenous Area
Iramã	Iramã	Indigenous Area
P rai	P rai	Indigenous Area
Tarumã&	Tarumã&	Indigenous Area
M bguaã S u	M bguaã S u	Indigenous Area
Morro dos Cavabs	Morro dos Cavabs	Indigenous Area
Manch erido Serngal		
Guanabara	Manch erido SerngalGuanabara	Indigenous Area
Cachoeira dos Inã ç bs	Cachoeira dos Inã ç bs	Acquired Indigenous Area
Combo bs	Combo bs	Indigenous Area
Kaxixã ³	Kaxixã ³	Indigenous Area
Pau Brasil	Pau Brasil	Indigenous Area
Caê ras Ve ha	Caê ras Ve ha	Indigenous Area
Caê ras Ve ha II	Caê ras Ve ha II	Indigenous Area
Jaraguã i	Jaraguã i	Indigenous Area
Guarida Barragem	Guarida Barragem	Indigenous Area
Krukutu	Krukutu	Indigenous Area
R b Branco Itanhaã m	R b Branco Itanhaã m	Indigenous Area
R be rã&o S ilveira	R be rã&o S ilveira	Indigenous Area
Boa Vista Sertã&o do		
P rom ãrim	Boa Vista Sertã&o do Prom ãrim	Indigenous Area
Guarani Araponga	Guarani Araponga	Indigenous Area
Parati-M ãrim	Parati-M ãrim	Indigenous Area

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 20/25)

Guarani de Bracu i	Guarani de Bracu i	Indigenous Area
PeruÁ-be	PeruÁ-be	Indigenous Area
PiÁÁ § aguera	PiÁÁ § aguera	Indigenous Area
Serra do Itatins	Serra do Itatins	Indigenous Area
ItaÁ'ca	ItaÁ'ca	Indigenous Area
Salto Grande do JacuÁ-	Salto Grande do JacuÁ-	Indigenous Area
Borboleta	Borboleta	Indigenous Area
IrapuÁ i	IrapuÁ i	Indigenous Area
Pacheca	Pacheca	Indigenous Area
Cantagab	Cantagab	Indigenous Area
Guarani de Águas Brancas	Guarani de Águas Brancas	Indigenous Area
Guarani Barra do Ouro	Guarani Barra do Ouro	Indigenous Area
Varzinha	Varzinha	Indigenous Area
Capivari	Capivari	Indigenous Area
Lagoa Encantada	Lagoa Encantada	Indigenous Area
Xukuru	Xukuru	Indigenous Area
KambwÁ i	KambwÁ i	Indigenous Area
KapnawÁ i	KapnawÁ i	Indigenous Area
P'pá	P'pá	Indigenous Area
Fazenda Funil	Fazenda Funil	Indigenous Area
Entre Serras	Entre Serras	Indigenous Area
KantaruÁ o	KantaruÁ o	Indigenous Area
Pankararu	Pankararu	Indigenous Area
Fazenda Cristo Rei	Fazenda Cristo Rei	Indigenous Area
JerpancÁ ³	JerpancÁ ³	Indigenous Area
TumbalaÁ i	TumbalaÁ i	Indigenous Area
FuhÁ-Á	FuhÁ-Á	Indigenous Reserve
Fazenda Canto	Fazenda Canto	Acquired Indigenous Area
Mata da Cafuma	Mata da Cafuma	Dominal Indigenous Area
Xukuru-Karri	Xukuru-Karri	Indigenous Area
Wassu-Cocal	Wassu-Cocal	Indigenous Area
CaÁ § ara/Iha de SÁÁo Pedro	CaÁ § ara/Iha de SÁÁo Pedro	Indigenous Area
KarapotÁ ³	KarapotÁ ³	Acquired Indigenous Area
AconÁÁ	AconÁÁ	Acquired Indigenous Area
TnguÁBotÁ ³	TnguÁBotÁ ³	Indigenous Reserve
Karri-XocÁ ³	Karri-XocÁ ³	Indigenous Area
AcaÁ °-goÁna	Reserva Extrativista AcaÁ °-goÁna	Extractive Reserve
Chapada Limpa	Chapada Limpa	Extractive Reserve
Negreiros	Fresta Nacional de Negreiros	National Forest
Itatiaia	Parque Nacional Itatiaia	National Park
Terra Grande Piraubá	Reserva Extrativista Terra Grande Piraubá	Extractive Reserve
Quimbo do Frexal	Reserva Extrativista Quimbo do Frexal	Extractive Reserve
CrÁÁo	Reserva Extrativista do CrÁÁo	Extractive Reserve
Ararpe-apodi	Fresta Nacional do Ararpe-apodi	National Forest
AcaÁ °-goÁna	Reserva Extrativista AcaÁ °-goÁna	Extractive Reserve
Chad Limpa	Reserva Extrativista Chapada Limpa	Extractive Reserve
ÁÁ § ungui	Fresta Nacional de ÁÁ § ungui	National Forest
Negreiros	Fresta Nacional de Negreiros	National Forest
Una	ReÁ °gpo de Vida Silvestre De Una	Wildlife Refuge
R dos Frades	ReÁ °gpo de Vida Silvestre do R dos Frades	Wildlife Refuge
Amansi	Fresta Nacional do Amansi	National Forest
Iquiri	Fresta Nacional do Iquiri	National Forest
Nascentes do Lago Jari	Parque Nacional Nascentes do Lago Jari	National Park
MÁ °do PurÁ °s	Reserva Extrativista do MÁ °do PurÁ °s	Extractive Reserve
ItuxÁ-	Reserva Extrativista ItuxÁ-	Extractive Reserve
R do Xingu	Reserva Extrativista R do Xingu	Extractive Reserve
Serra da Meruoca	Área de Proteção ÁÁo Ambiental Serra da Meruoca	Environmental Protection Area
R do SÁÁo Francisco	Monumento Natural do R do SÁÁo Francisco	Natural Monument
Praha do Canto Verde	Reserva Extrativista Praha do Canto Verde	Extractive Reserve
Renacer	Reserva Extrativista Renacer	Extractive Reserve
-55.775396	-55.775354	-55.774713
CassurubÁ i	Reserva Extrativista de CassurubÁ i	Extractive Reserve
Marinha da Baía de IguapÁ	Reserva Extrativista Marinha da Baía de IguapÁ	Extractive Reserve
BacÁ do ParaÁba do Sul	Área de Proteção ÁÁo Ambiental BacÁ do ParaÁ-ba Do Sul	Environmental Protection Area
Jamari	Fresta Nacional do Jamari	National Forest
Mapiuari	Parque Nacional Mapiuari	National Park
Paragem	Parque Natural Municipal do Paragem	Municipal Nature Park
Morada dos Corrá °as	Parque Natural Municipal Morada dos Corrá °as	Municipal Nature Park
Caca D Água	Parque Natural Municipal Caca D Água	Municipal Nature Park
Verde Vale	Parque Natural Municipal Verde Vale	Municipal Nature Park
Gumari	Parque Natural Municipal de Gumari	Municipal Nature Park
Serra do Mendanha	Parque Natural Municipal da Serra do Mendanha	Municipal Nature Park
Serra da Capoeira Grande	Parque Natural Municipal da Serra Da Capoeira Grande	Municipal Nature Park
Fazenda do Végas	Parque Natural Municipal Fazenda do Végas	Municipal Nature Park
Freguesá	Parque Natural Municipal da Freguesá	Municipal Nature Park

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 21/25)

Marapendi	Parque Natural Municipal de Marapendi	Municipal Nature Park
Bosque da Barra	Parque Natural Municipal Bosque da Barra	Municipal Nature Park
Chico Mendes	Parque Natural Municipal Chico Mendes	Municipal Nature Park
Penhasco dos Imães	Parque Natural Municipal Penhasco dos Imães - Arquiteto Sérgio Bernardes	Municipal Nature Park
Darke de Mattos	Parque Natural Municipal Darke de Mattos	Municipal Nature Park
Cidade	Parque Natural Municipal da Cidade	Municipal Nature Park
Praíha	Parque Natural Municipal da Praíha	Municipal Nature Park
Josão Guilherme		
Merquir	Parque Natural Municipal Josão Guilherme e Merquir	Municipal Nature Park
Fonte da Saudade	Parque Natural Municipal Fonte da Saudade	Municipal Nature Park
Jardim do Carmo	Parque Natural Municipal do Jardim Do Carmo	Municipal Nature Park
Cárrego Cumanda	Parque Natural Municipal do Cárrego Cumanda	Municipal Nature Park
Praputangas	Parque Natural Municipal de Praputangas	Municipal Nature Park
Nova Iguaçu	Parque Municipal de Nova Iguaçu	Municipal Park
Petrópolis	Parque Natural Municipal de Petrópolis	Municipal Nature Park
Barra do Rio Camarutuba	Área de Relevante Interesse Ecológico da Barra do Rio Camarutuba	Relevant Ecological Interest Area
Ihas do Rio Paraíba do Sul	Área de Relevante Interesse Ecológico - Ihas do Rio Paraíba do Sul	Relevant Ecological Interest Area
São José	Área de Relevante Interesse Ecológico - São José	Relevant Ecological Interest Area
São Conrado	Área de Relevante Interesse Ecológico - São Conrado	Relevant Ecological Interest Area
Tabebuás	Área de Relevante Interesse Ecológico - Tabebuás	Relevant Ecological Interest Area
Lagoa Verde	Área de Proteção Ambiental da Lagoa Verde	Environmental Protection Area
Morro do Leme	Área de Proteção Ambiental do Morro do Leme	Environmental Protection Area
Orla Marã-tim	Área de Proteção Ambiental da Orla Marã-tim	Environmental Protection Area
Morros da Babão	Área de Proteção Ambiental dos Morros da Babão	Environmental Protection Area
Passagem e do Areal da Praia do Pontal	Área de Proteção Ambiental da Passagem e do Areal da Praia do Pontal	Environmental Protection Area
Brisas	Área de Proteção Ambiental das Brisas	Environmental Protection Area
Serra da Capoeira Grande	Área de Proteção Ambiental da Serra da Capoeira Grande	Environmental Protection Area
Morro do Silveiro	Área de Proteção Ambiental do Morro do Silveiro	Environmental Protection Area
Orla Marã-tim da Baía de Sepetiba	Área de Proteção Ambiental da Orla Marã-tim da Baía de Sepetiba	Environmental Protection Area
Serra do Mendanha	Área de Proteção Ambiental da Serra do Mendanha	Environmental Protection Area
Morro do Vaqueiro	Área de Proteção Ambiental do Morro do Vaqueiro	Environmental Protection Area
Fazenda da Taquara	Área de Proteção Ambiental da Fazenda da Taquara	Environmental Protection Area
Morro dos Cabritos	Área de Proteção Ambiental do Morro dos Cabritos	Environmental Protection Area
Morro da Saudade	Área de Proteção Ambiental do Morro da Saudade	Environmental Protection Area
Serra dos Pretos Forros	Área de Proteção Ambiental da Serra dos Pretos Forros	Environmental Protection Area
Pedra Branca	Área de Proteção Ambiental da Pedra Branca	Environmental Protection Area
Barro da Freguesia	Área de Proteção Ambiental do Barro da Freguesia	Environmental Protection Area
Praíha	Área de Proteção Ambiental da Praíha	Environmental Protection Area
Várzea Country Club	Área de Proteção Ambiental da Várzea Country Club	Environmental Protection Area
Grumari	Área de Proteção Ambiental do Grumari	Environmental Protection Area
Pontas de Copacabana e Aporador e Seus	Área de Proteção Ambiental das Pontas de Copacabana e Aporador e Seus Entornos	Environmental Protection Area
Jenipabu	Área de Proteção Ambiental de Jenipabu	Environmental Protection Area
Bonfim/guarãra	Área de Proteção Ambiental Bonfim/guarãra	Environmental Protection Area
Nascentes de Araguaia	Área de Proteção Ambiental das Nascentes de Araguaia	Environmental Protection Area
Lago de Peixe/angical	Área de Proteção Ambiental Lago de Peixe/angical	Environmental Protection Area
Lago de São Salvador do Tocantins	Área de Proteção Ambiental Lago de São Salvador do Tocantins	Environmental Protection Area
Foz do Rio Santa Tereza	Área de Proteção Ambiental Foz do Rio Santa Tereza	Environmental Protection Area
Japão	Área de Proteção Ambiental Japão	Environmental Protection Area
Lago de Palmas	Área de Proteção Ambiental Lago de Palmas	Environmental Protection Area
Irrí	Fresta Estadual de Irrí	State Forest
Ponta do Tubarão	Reserva de Desenvolvimento Sustentável Estadual Ponta do Tubarão	Sustainable Development Reserve
Lago Paranoá	Área de Proteção Ambiental do Lago Paranoá	Environmental Protection Area
Bacã dos Ribeirões do Gamaleão	Área de Proteção Ambiental das Bacãs dos Ribeirões do Gamaleão	Environmental Protection Area
Cafringa	Área de Proteção Ambiental de Cafringa	Environmental Protection Area
Jk	Área de Relevante Interesse Ecológico - Jk	Relevant Ecological Interest Area
Grã do São	Área de Relevante Interesse Ecológico - Grã do São	Relevant Ecological Interest Area
Santuário de Vida Silvestre do Riacho	Área de Relevante Interesse Ecológico - Santuário de Vida Silvestre do Riacho	Relevant Ecological Interest Area
Bosque	Área de Relevante Interesse Ecológico - Bosque	Relevant Ecological Interest Area
Cerradão	Área de Relevante Interesse Ecológico - Cerradão	Relevant Ecological Interest Area
Dom Bosco	Área de Relevante Interesse Ecológico - Dom Bosco	Relevant Ecological Interest Area
Cárrego Mato Grande	Área de Relevante Interesse Ecológico - Cárrego Mato Grande	Relevant Ecological Interest Area
Paranoá Sul	Área de Relevante Interesse Ecológico - Paranoá Sul	Relevant Ecological Interest Area
Barra do Una	Reserva de Desenvolvimento Sustentável Barra do Una	Sustainable Development Reserve
João Leite	Área de Proteção Ambiental João Leite	Environmental Protection Area
Serra Geral de Goiás	Área de Proteção Ambiental Serra Geral de Goiás	Environmental Protection Area
Pireneus	Área de Proteção Ambiental dos Pireneus	Environmental Protection Area
Serra da Jbã	Área de Proteção Ambiental Serra da Jbã	Environmental Protection Area
Águas de São João	Área de Relevante Interesse Ecológico - Águas de São João	Relevant Ecological Interest Area
Serra das Gaóses da Portaria	Área de Proteção Ambiental da Serra das Gaóses da Portaria	Environmental Protection Area
Araguaia	Fresta Estadual de Araguaia	State Forest
Encantado	Área de Proteção Ambiental do Encantado	Environmental Protection Area
Serra Dourada	Área de Proteção Ambiental da Serra Dourada	Environmental Protection Area
Cochã de Gbã	Área de Proteção Ambiental Cochã de Gbã	Environmental Protection Area
Bacã do Rio Pandeiros	Área de Proteção Ambiental Bacã do Rio Pandeiros	Environmental Protection Area
Serra do Sabonetal	Área de Proteção Ambiental Serra do Sabonetal	Environmental Protection Area
Torto	Área de Relevante Interesse Ecológico - Torto	Relevant Ecological Interest Area

Table A5 List of Protected Area in Brazil (continued, 22/19)

Cruzeiro	Área de Proteção Ambiental da Vila Estrutural	Relevant Ecobgical Interest Area
Vila Estrutural	Área de Proteção Ambiental da Vila Estrutural	Relevant Ecobgical Interest Area
Carrrego Cabeceira do Vab	Área de Proteção Ambiental do Carrrego Cabeceira do Vab	Relevant Ecobgical Interest Area
Bacia Hidrográfica do Rio Machado	Área de Proteção Ambiental da Bacia Hidrográfica do Rio Machado	Environmental Protection Area
Uaimii	Fresta Estadual do Uaimii	State Forest
Jacarandã I	Área de Proteção Ambiental da Fresta do Jacarandã I	Environmental Protection Area
Massambaba	Área de Proteção Ambiental de Massambaba	Environmental Protection Area
Rio Preto	Área de Proteção Ambiental do Rio Preto	Environmental Protection Area
São Desidório	Área de Proteção Ambiental de São Desidório	Environmental Protection Area
Lago de Tucuruí	Área de Proteção Ambiental do Lago de Tucuruí	Environmental Protection Area
Trunfo do Xingu	Área de Proteção Ambiental Trunfo do Xingu	Environmental Protection Area
Paru	Fresta Estadual do Paru	State Forest
Aobaá	Reserva de Desenvolvimento Sustentável Aobaá	Sustainable Development Reserve
Pucuruá - Ararã	Reserva de Desenvolvimento Sustentável Pucuruá - Ararã	Sustainable Development Reserve
Iha do Combu	Área de Proteção Ambiental da Iha do Combu	Environmental Protection Area
Agoal-maíndeuá	Área de Proteção Ambiental de Agoal-maíndeuá	Environmental Protection Area
São Gerardo	Área de Proteção Ambiental de São Gerardo	Environmental Protection Area
Região Metropolitana de Belém	Área de Proteção Ambiental da Região Metropolitana de Belém	Environmental Protection Area
Paytuna	Área de Proteção Ambiental Paytuna	Environmental Protection Area
Rio Córrego Rotas Monções	Área de Proteção Ambiental Rio Córrego Rotas Monções	Environmental Protection Area
Arquidão Lago do Mara	Área de Proteção Ambiental do Arquidão Lago do Mara	Environmental Protection Area
Desprado	Rds do Desprado	Sustainable Development Reserve
Estrada de Piraputanga	Área de Proteção Ambiental Estrada Parque de Piraputanga	Environmental Protection Area
Juma	Reserva de Desenvolvimento Sustentável Juma	Sustainable Development Reserve
Trombetas	Fresta Estadual do Trombetas	State Forest
Faro	Fresta Estadual de Faro	State Forest
Serra do Ouro	Área de Proteção Ambiental da Serra do Ouro	Environmental Protection Area
Lago de Sobradinho	Área de Proteção Ambiental Lago de Sobradinho	Environmental Protection Area
Lagoa de Itirica	Área de Proteção Ambiental Lagoa de Itirica	Environmental Protection Area
Lagoas de Guaraíba	Área de Proteção Ambiental Lagoas de Guaraíba	Environmental Protection Area
Santa Rita	Área de Proteção Ambiental de Santa Rita	Environmental Protection Area
Piquiri-una	Área de Proteção Ambiental Piquiri-una	Environmental Protection Area
Rio Iratapuru	Reserva de Desenvolvimento Sustentável Rio Iratapuru	Sustainable Development Reserve
Rio Curiaú	Área de Proteção Ambiental do Rio Curiaú	Environmental Protection Area
Fazendinha	Área de Proteção Ambiental da Fazendinha	Environmental Protection Area
Árvores Fossilizadas	Monumento Natural das Árvores Fossilizadas	Natural Monument
Guaxindiba	Estação Ecológica Estadual de Guaxindiba	Ecobgical Station
Barreiro Rico	Estação Ecológica do Barreiro Rico	Ecobgical Station
Jardim Botânico	Estação Ecológica do Jardim Botânico	Ecobgical Station
Sassafras	Reserva Biológica Estadual do Sassafras	Biobgical Reserve
Serra de Catingas Novas	Parque Estadual da Serra de Catingas Novas	State Park
Pirineus	Parque Estadual dos Pirineus	State Park
Terra Ronca	Parque Estadual de Terra Ronca	State Park
Paraíba	Parque Estadual de Paraíba	State Park
Araguaia	Parque Estadual do Araguaia	State Park
Serra Dourada	Parque Estadual da Serra Dourada	State Park
Descoberto	Parque Estadual do Descoberto	State Park
Mata Atlântica	Parque Estadual da Mata Atlântica	State Park
Campos Altos	Parque Estadual Campos Altos	State Park
L. Grande	Parque Estadual da Lapa Grande	State Park
Serra da Candonga	Parque Estadual Serra da Candonga	State Park
Serra Nova	Parque Estadual Serra Nova	State Park
Cunhambebe	Parque Estadual Cunhambebe	State Park
Acauã	Estação Ecológica de Acauã	Ecobgical Station
Serra do Intendente	Parque Estadual Serra do Intendente	State Park
Serra do Cabral	Parque Estadual da Serra do Cabral	State Park
Rio Pandeiros	Reserva Biológica do Rio Pandeiros	Biobgical Reserve
Guará	Reserva Biológica do Guará	Biobgical Reserve
Rio Descoberto	Reserva Biológica do Rio Descoberto	Biobgical Reserve
Pau Furado	Parque Estadual Pau Furado	State Park
Alto do Carri	Parque Estadual Alto do Carri	State Park
Mata dos Muriquis	Reserva Biológica do Rio Descoberto	Biobgical Reserve
Sagarana	Estação Ecológica de Sagarana	Ecobgical Station
Montezuma	Parque Estadual de Montezuma	State Park
Caminho dos Gerais	Parque Estadual Caminho dos Gerais	State Park
Cercadinho	Estação Ecológica do Cercadinho	Ecobgical Station
Serra da Boa Esperança	Parque Estadual Serra da Boa Esperança	State Park
Serra Verde	Parque Estadual Serra Verde	State Park
Águas Emendadas	Estação Ecológica de Águas Emendadas	Ecobgical Station
Gama	Reserva Biológica do Gama	Biobgical Reserve
Iha Grande	Parque Estadual da Iha Grande	State Park
Serra dos Martins/Andorinhas	Parque Estadual da Serra dos Martins/Andorinhas	State Park
Monte Alegre	Parque Estadual de Monte Alegre	State Park
Macuru	Reserva Biológica de Macuru	Biobgical Reserve
Utinga	Parque Estadual do Utinga	State Park

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 23/25)

Prebido	Parque Estadual do Prebido	State Park
Itinguá	Parque Estadual do Itinguá	State Park
Ilhas do Abrigo e Guararita	Reserva Biológica de Vida Silvestre das Ilhas do Abrigo e Guararita	Wildlife Refuge
Rib Formoso	Monumento Natural do Rib Formoso	Natural Monument
Grão Pará	Estação Ecológica do Grão Pará	Ecological Station
Gruta do Lago Azul	Monumento Natural da Gruta do Lago Azul	Natural Monument
Guaratuba	Reserva Biológica Arqueológica de Guaratuba	Biological Reserve
Serra da Condição	Parque Estadual da Serra da Condição	State Park
Araras	Reserva Biológica de Araras	Biological Reserve
desengano	Parque Estadual do desengano	State Park
Monumento Natural dos Caniões do Subaço	Monumento Natural dos Caniões do Subaço	Natural Monument
Parazinho	Reserva Biológica do Parazinho	Biological Reserve
Corumbá	Corumbá	State Park
Pedra Branca	Pedra Branca	State Park
Pedra Azul	Pedra Azul	State Park
Mata das Fritas	Mata das Fritas	State Park
Duas Bocas	Duas Bocas	Biological Reserve
Pedra da Boca	Pedra da Boca	State Park
Rib Guarani	Rib Guarani	State Park
Lanchas	Lanchas	Natural Monument
Guarámirim	Guarámirim	State Park
Dunas de Natal	Dunas de Natal	State Park
Jornalista Luiz Maria	Dunas de Natal - Jornalista Luiz Maria Alves	State Park
Mata da Pádua	Mata da Pádua	State Park
O Frade e A Freira	O Frade e A Freira	Natural Monument
Serra da Trindade	Serra da Trindade	State Park
Três Picos	Três Picos	State Park
Cachoeira da Fumaça	Cachoeira da Fumaça	State Park
Campo de Batalha	Campo de Batalha	State Forest
Pratagi	Pratagi	Environmental Protection Area
Metropolitana	Metropolitana	State Forest
Pequeno	Pequeno	Environmental Protection Area
Praquara	Praquara	Environmental Protection Area
Iraí	Iraí	Environmental Protection Area
Litoral Norte	Litoral Norte	Environmental Protection Area
Litoral Sul	Litoral Sul	Environmental Protection Area
Murcá	Murcá	Environmental Protection Area
Catoão e Fernão Velho	Catoão e Fernão Velho	Environmental Protection Area
Marituba do Peixe	Marituba do Peixe	Environmental Protection Area
Recifes de Corais	Recifes de Corais	Environmental Protection Area
Pedra do Elefante	Pedra do Elefante	Environmental Protection Area
Concha do Ostra	Concha do Ostra	Sustainable Development State Reserve
Morro da Vargem	Morro da Vargem	Relevant Ecological Interest Area
Cauái	Cauái	Ecological Station
Setiba	Setiba	Environmental Protection Area
Mata do Xerém	Mata do Xerém	State Park
Caatinga	Caatinga	UNESCO - MAB Biosphere Reserve
Cerrado Protected Areas	Cerrado Protected Areas	
Chapada dos Veadeiros	Reserva Biológica do Cerrado: Parcs nationaux Chapada dos Veadeiros et	World Heritage Site
Brazilian Atlantic Islands	Ilhas Atlânticas brasileiras: Reservas de Fernando de Noronha et	World Heritage Site
Fernando de Noronha and	Ilhas Atlânticas brasileiras: Reservas de Fernando de Noronha et	World Heritage Site
Central Amazon	Central Amazon	UNESCO - MAB Biosphere Reserve
Reserva Particular do	Reserva Particular do Patrimônio Natural SESC Pantanal	Ramsar Site, Wetland of International Importance
Patrimônio Natural SESC	Reserva Particular do Patrimônio Natural SESC Pantanal	
Espinhaço Range	Espinhaço Range	UNESCO - MAB Biosphere Reserve
Serra das Araras	Estação Ecológica da Serra das Araras	Ecological Station
Tótopo	Tótopo	Indigenous Area
Taunay/Begue	Taunay/Begue	Indigenous Area
Buriti	Buriti	Indigenous Area
Guarani Ribeirão	Guarani Ribeirão	Indigenous Area
Silveira	Guarani Ribeirão Silveira	Indigenous Area
Truká	Truká	Indigenous Area
Oxavante	Oxavante	Domestic Indigenous Area
Cachoeirinha	Cachoeirinha	Indigenous Reserve
Iramá-Laklaná	Iramá-Laklaná	Indigenous Area
Karixocá	Karixocá	Indigenous Area
Porto Lindo	Porto Lindo	Indigenous Area
Potiguara de Monte-Mor	Potiguara de Monte-Mor	Indigenous Area
Pequizado Naruvatu	Pequizado Naruvatu	Indigenous Area
Rib Gregário	Rib Gregário	Indigenous Area
Kayabi	Kayabi	Indigenous Area
Caarapá	Caarapá	Indigenous Area
Manoki	Manoki	Indigenous Area
Itximitari	Itximitari	Indigenous Area
Jacaréba/Katauki	Jacaréba/Katauki	Indigenous Area
Porquinhos dos Canele	Porquinhos dos Canele	Indigenous Area
Apanekra	Porquinhos dos Canele-Apanekra	Indigenous Area
Gerpancá	Gerpancá	Acquired Indigenous Area
Bacurizinho	Bacurizinho	Indigenous Area
Barra Veia	Barra Veia	Indigenous Area
Yanomami	Yanomami	Indigenous Area

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 24/25)

Xaçecã Pnhazinho-Canhadao)	Xaçecã Pnhazinho-Canhadao)	Indigenous Area
Boa Vista - AM	Boa Vista - AM	Indigenous Area
Palmital	Palmital	Indigenous Area
Tekoha Itamara	Tekoha Itamara	Acquired Indigenous Area
Nbaque	Nbaque	Indigenous Area
Lalma	Lalma	Indigenous Area
Pibã Rebuã i	Pibã Rebuã i	Indigenous Area
Jaraguã i	Jaraguã i	Indigenous Area
Barragem	Barragem	Indigenous Area
Krukutu	Krukutu	Indigenous Area
Jaraguã i	Jaraguã i	Indigenous Area
Krenak	Krenak	Indigenous Area
Cahy/Pequi	Cahy/Pequi	Indigenous Area
Jerpancã 3	Jerpancã 3	Indigenous Area
Mundo Novo/Vraã 5 ao	Mundo Novo/Vraã 5 ao	Indigenous Area
Kaneã-BuritiVe ho	Kaneã-BuritiVe ho	Indigenous Area
Governador	Governador	Indigenous Area
Pantabao	Pantabao	Indigenous Area
Bako Grande	Bako Grande	Indigenous Area
Apurna Igarapã	Apurna Igarapã	Indigenous Area
Tauamirim	Apurna Igarapã Tauamirim	Indigenous Area
Zorã 3	Zorã 3	Indigenous Area
Igarapã Lourdes	Igarapã Lourdes	Indigenous Area
Puruborã i	Puruborã i	Indigenous Area
Pirneus de Souza	Pirneus de Souza	Indigenous Area
Enawenã-Nawã	Enawenã-Nawã	Indigenous Area
Sororã 3 - Gbba	Sororã 3 - Gbba	Indigenous Area
Tuapekuakau	Sororã 3 - Gbba Tuapekuakau	Indigenous Area
Ikpeng	Ikpeng	Indigenous Area
Pimente Barbosa	Pimente Barbosa	Indigenous Area
Areoes	Areoes	Indigenous Area
Sangradouro/Volta Grande	Sangradouro/Volta Grande	Indigenous Area
Tereza Cristina	Tereza Cristina	Indigenous Area
Menku	Menku	Indigenous Area
Rib Formoso	Rib Formoso	Indigenous Area
Sao Sebastiao Menerozinho	Sao Sebastiao Menerozinho	Indigenous Area
Karitiana	Karitiana	Indigenous Area
Igarapã Preto/Pauana	Igarapã Preto/Pauana	Indigenous Area
Zuruaha	Zuruaha	Indigenous Area
Jamnawa Arara do Rib	Jamnawa Arara do Rib	Indigenous Area
Bagã	Jamnawa Arara do Rib Bagã	Indigenous Area
Nukhi	Nukhi	Indigenous Area
Arara da Volta Grande do Xingu	Arara da Volta Grande do Xingu	Indigenous Area
Mata Medonha	Mata Medonha	Indigenous Area
Coroa Vermelha	Coroa Vermelha	Indigenous Area
Ihas da Tapera/Sao Fãlix/Porto	Ihas da Tapera/Sao Fãlix/Porto	Indigenous Area
Apnã 5 II	Apnã 5 II	Indigenous Area
Tapirã 5/Karã i	Tapirã 5/Karã i	Indigenous Area
Sao Domingos - MT	Sao Domingos - MT	Indigenous Area
Paquã 5amba	Paquã 5amba	Indigenous Area
Brinco das Moã 5as	Brinco das Moã 5as	Indigenous Area
Muratuba do Parã i	Muratuba do Parã i	Indigenous Area
Bako Tapaã 5s/Arapã 5ns	Bako Tapaã 5s/Arapã 5ns	Indigenous Area
Bako Rib Negro II	Bako Rib Negro II	Indigenous Area
Chiquitano de Baã Grande	Chiquitano de Baã Grande	Indigenous Area
Panamã i	Panamã i	Indigenous Area
Amambapeguã i	Amambapeguã i	Indigenous Area
Dourados-Amambapeguã i	Dourados-Amambapeguã i	Indigenous Area
Iguatempeguã i	Iguatempeguã i	Indigenous Area
Brihantepeguã i	Brihantepeguã i	Indigenous Area
ããndã 5vapeguã i	ããndã 5vapeguã i	Indigenous Area
Rib Pequeno	Rib Pequeno	Indigenous Area
Arandu-Mirim	Arandu-Mirim	Indigenous Area
Cerco Grande	Cerco Grande	Indigenous Area
Karuguã i	Karuguã i	Indigenous Area
Sambaqui	Sambaqui	Indigenous Area
Kaguy Poty	Kaguy Poty	Indigenous Area
Cacque Doble	Cacque Doble	Indigenous Area
Carreteiro	Carreteiro	Indigenous Area
Inhacorã i	Inhacorã i	Indigenous Area
Uaã 5a	Uaã 5a	Indigenous Area
Wawi	Wawi	Indigenous Area
Kaxuyana	Kaxuyana	Indigenous Area
Escriãao	Escriãao	Indigenous Area
Pontal dos Apãkã i	Pontal dos Apãkã i	Indigenous Area
Tupnãmbã ide Belmonte	Tupnãmbã ide Belmonte	Indigenous Area
Sissã-mã	Sissã-mã	Indigenous Area
Estrelã	Estrelã	Indigenous Area

Source: Explore Protected Areas, <http://protectedplanet.net>

Table A5 List of Protected Area in Brazil (continued, 25/25)

Tekoha Marangatu	Tekoha Marangatu	Indigenous Area
Morro do Oso	Morro do Oso	Indigenous Area
Mato Castelhano	Mato Castelhano	Indigenous Area
Chã "ggu	Chã "ggu	Indigenous Area
Reta/ Tapera	Reta/ Tapera	Indigenous Area
Itaporanga	Itaporanga	Indigenous Area
Ararã i	Ararã i	Indigenous Area
Kangang de Irã ii	Kangang de Irã ii	Indigenous Area
Lgero	Lgero	Indigenous Area
Mbguã ſu	Mbguã ſu	Indigenous Area
Xacrabã i	Xacrabã i	Indigenous Area
Xakrabã i/Rancharã	Xakrabã i/Rancharã	Indigenous Area
Guarani Araponga	Guarani Araponga	Indigenous Area
Boa Vista Sertão do Promirim	Boa Vista Sertão do Promirim	Indigenous Area
Lago Grande	Lago Grande	Indigenous Area
Guarani Barao de Antonina	Guarani Barao de Antonina	Indigenous Area
Tunayana	Tunayana	Indigenous Area
Ponta da Formiga	Ponta da Formiga	Indigenous Area
Morro do Coco	Morro do Coco	Indigenous Area
Itapua	Itapua	Indigenous Area
Passo Grande do Rio Forquilha	Passo Grande do Rio Forquilha	Indigenous Area
Tanaru (Interdã ſao)	Tanaru (Interdã ſao)	Indigenous Area
Mundo Verde/Cachoeirinha	Mundo Verde/Cachoeirinha	Indigenous Area
Igarapã Taboca do Alto	Igarapã Taboca do Alto Tarauacã i	Indigenous Area
Imbirã - Area doada	Imbirã - Area doada	Acquired Indigenous Area
Araguaã /Terra Roxa	Araguaã /Terra Roxa	Indigenous Area
Tekoha Pora	Tekoha Pora	Indigenous Area
Trocarã i - Doaã ſao	Trocarã i - Doaã ſao	Dominal Indigenous Area
Karaã i Santana do Araguaia	Karaã i Santana do Araguaia	Indigenous Area
Potiguara	Potiguara	Indigenous Area
Combos	Combos	Indigenous Area
Tupiniquim	Tupiniquim	Indigenous Area
Lago do Corredor	Lago do Corredor	Indigenous Area
Xukuru de Cimbres	Xukuru de Cimbres	Acquired Indigenous Area
Ham YA'xux	Ham YA'xux	Acquired Indigenous Area
Canoana	Canoana	Indigenous Area
Wahuri	Wahuri	Indigenous Area
Tremembã de Sao Jose e Buriti	Tremembã de Sao Jose e Buriti	Indigenous Area
Petim /Arasaty	Petim /Arasaty	Indigenous Area
Arro do Conde	Arro do Conde	Indigenous Area
Passo Grande	Passo Grande	Indigenous Area
Rio Negro Ocaia	Rio Negro Ocaia	Indigenous Area
Pankarã da Serra do Arapuã i	Pankarã da Serra do Arapuã i	Indigenous Area
Anacã	Anacã	Indigenous Area
Tekoa Pindoty	Tekoa Pindoty	Indigenous Area
Tekoa Guaviraty	Tekoa Guaviraty	Indigenous Area
Tekoa Guaviraty	Tekoa Guaviraty	Indigenous Area
Tekoa Itapua	Tekoa Itapua	Indigenous Area
Tekoa Jeity	Tekoa Jeity	Indigenous Area
Tekoa Uruty	Tekoa Uruty	Indigenous Area
Tekoa Jakoaty	Tekoa Jakoaty	Indigenous Area
Tekoa Amba Pora	Tekoa Amba Pora	Indigenous Area
Tekoa Peguaty	Tekoa Peguaty	Indigenous Area
Iha do Cardoso	Iha do Cardoso	Indigenous Area
Rio Branquinho	Rio Branquinho	Indigenous Area
Fazenda Remanso	Fazenda Remanso	Acquired Indigenous Area
Fazenda Sã-tb	Fazenda Sã-tb	Acquired Indigenous Area
Terena Gêba Iriri	Terena Gêba Iriri	Indigenous Reserve
Unelxi	Unelxi	Indigenous Area
Tuxã ide Inã i	Tuxã ide Inã i	Acquired Indigenous Area
Piripkura (Interdã ſao)	Piripkura (Interdã ſao)	Indigenous Area
Maracaxi	Maracaxi	Indigenous Area
Kawahva do Rio Pardo	Kawahva do Rio Pardo	Indigenous Area
Krenrehã	Krenrehã	Indigenous Reserve
Abros Marne National Park	Abros Marne National Park	Ramsar Site, Wetland of International Importance
Turã /Marquã	Turã /Marquã	Indigenous Area

Source: Explore Protected Areas, <http://protectedplanet.net>

Appendix 6 IBA in Brazil

Table A6 List of IBA in Brazil (1/4)

Site Name	Area (ha)	Criteria
A bunã	79289	A 2
A lto Cariri	22000	A 1
A lto Jurua	539864	A 1, A 2, A 3
A lto Rio Juruea	910054	A 1
A lto Sucunduri	4629900	A 1, A 2
Área de Proteção Ambiental de Guaratuba	130000	A 1, A 2, A 3
Área de Relevante Interesse Ecológico Projeto Dinâmica Biológica de Fragmentos Florestais e Entomo	46207	A 2, A 3
Arquipélago de Anavihanas	197812	A 1, A 2
Arquipélago de Fernando de Noronha	1800	A 1, A 2, A 3, A 4 i, A 4 ii
Arquipélago dos Acatrazes	200	A 4 i
Atol das Rocas	36249	A 4 i, A 4 ii, A 4 iii
Aurora do Tocantins / Taguatinga	370934	A 1, A 2
Baía da Babitonga	30000	A 1, A 2
Baixada Maranhense	2045444	A 4 i, A 4 iii
Baixo Curso do Rio Nundaquara	1200	A 1, A 2
Baixo Rio das Velhas	5000	A 1, A 2
Baixo Rio Javari	77158	A 1, A 2, A 3
Baixo Rio Xingu	622266	A 1
Baixo-Sul	50000	A 1, A 2
Bandeira / Macarani	3000	A 1, A 2
Banhado do Macarico e Cordões Litorâneos Adjacentes	41100	A 1, A 2, A 3
Banhado do Tam	32000	A 1, A 3, A 4 i, A 4 iii
Banhado dos Pachecos	2560	A 1, A 2
Banhado São Donato	17500	A 1, A 2, A 3
Barragem de Boa Esperança	280547	A 1
Bertioga	6000	A 1
Boa Nova / Serra da Ouricana	15000	A 1, A 2, A 3
Botumirim	2000	A 1, A 2
Brejo de Taquaritinga	4000	A 1
Brejo dos Cavalos	5200	A 1, A 2
Caceres	151172	A 1, A 3
Cafundó e Bananal do Norte	2000	A 1
Campinas e Várzeas do Rio Branco	3859627	A 1, A 2, A 3
Campo do Alto Mamelos	451017	A 1
Campos da Região de Bagé	82000	A 1, A 2, A 3
Campos de Água Doce e Palmas	110000	A 1
Campos de Cima da Serra	200000	A 1, A 2
Campos de Humaitá-Lábrea	2724632	A 1
Campos do Encanto	274114	A 1, A 2, A 3
Campos do Planalto das Araucárias	850000	A 1, A 2
Campos Gerais do Paraná	6000	A 1, A 2, A 3
Cânion do Guartelá	20000	A 1
Caratinga	957	A 1
Caxiuanã / Portel	3422612	A 1
Cerrados ao Sul de Brasília	18952	A 1, A 2
Cerrados do Nordeste de Tocantins	1296041	A 1
Chapada do Araripe	100000	A 1, A 2, A 3
Chapada do Catuni	500	A 1
Complexo Guráú	1077	A 1, A 2
Complexo Pedra Azul / Forno Grande	10000	A 1, A 2, A 3
Corredor do Iguaçu	6000	A 1
Cristalino / Serra do Cachimbo	1123562	A 1, A 3
Curaçá	5000	A 1
Delta do Parnaíba	217139	A 2, A 4 i
Encostas da Região de Domingos Martins	24000	A 1
Engenho Coimbra (Usina Serra Grande)	800	A 1, A 2
Estação Ecológica de Águas Emendadas	10547	A 1
Estação Ecológica de Juréia-Itatins	80000	A 1, A 2, A 3
Estação Ecológica de Uruçuí-Una	135000	A 1
Estação Ecológica do Seridó	1128	A 1, A 2
Estação Ecológica Serra das Araras	29741	A 1, A 3
Estação Veracruz	7214	A 1
Estuário da Laguna dos Patos	100000	A 1, A 3, A 4 i
Fazenda Pinobas IV e Aredores	4000	A 1, A 2, A 3

Source: Bird Life,

<http://www.birdlife.org/datazone/sitesearchresults.php?cty=30&fam=0&gen=0>

Table A6 List of IBA in Brazil (continued, 2/4)

Fazenda Santana	5000	A1, A2
Fomoso do Araguaia	169672	A1, A4i, A4iii
Foz dos Rios Pardo e Jequitinhonha	50000	A1
General Carneiro	100000	A1, A2
Goiabá / Piratuba	968625	A2, A4i
Guadaíupe	15000	A1, A3
Guaraqueçaba / Jacupiranga / Cananéia	500000	A1, A2, A3
Gurupi	1392974	A1
Itaquera / Ruy Barbosa	53000	A1
Igarassu	7200	A1
Iha de Marajó	3910144	A1, A2
Iha Grande	19000	A1
Ihabela State Park (Parque Estadual de Ihabela BA)	27025	A1
Ihas Comprida e Cananéia	24000	A1, A4i
Ihas do Litoral Sul do Espírito Santo	100	A4i
Ihas dos Currais	10	A4ii
Ihéus / Itabuna	50000	A1, A2
Interflúvio dos Rios das Mortes e Araguaia	1450560	A1, A2
Interflúvio dos Rios Tocantins e Paraná	472744	A1
Itanagra	3000	A1, A2, A3
Itanhaém / Mongaguá	8000	A1
Itarana	5000	A1, A2
Itirapina	2300	A1
Jaguaguara	5000	A1, A2
Jaguariúva	5000	A1
Jalapão	1187017	A1, A3
Jamari / A Itamira	1541628	A1
Jamari	792165	A1
Januária	21000	A1, A2
Jequié	39000	A1, A2
Ji-Paraná / Roosevelt	1112493	A1, A2, A3
Laranjal / Miracema	10000	A1, A2
Lavrados de Roraima	1477273	A1, A2
Lizarda	349193	A1
Maciço do Urucum e Adjacências	118718	A1, A3
Maciço Florestal de Paranapiacaba	140000	A1, A2, A3
Maciços da Tijuca e Pedra Branca	15700	A1
Mamanguape	20000	A1, A2
Mamirauá	1124000	A1, A2
Mangue Seco	1000	A4i
Mata da Campina e Fragmentos Adjacentes	10000	A1
Mata do Crasto e Restingas de Itaporanga e Estância	10000	A1
Mata do Estado	600	A1, A2
Mata do Pau-Ferro	600	A1, A2
Mata Estrela	2000	A1
Matas Ciliares do Rio do Coco e Afluentes	138721	A1, A2, A3
Matas de Conde e Baixos	3000	A1
Médio Rio Camapuã	450000	A1, A2
Mociminho	20000	A1, A2, A3
Monumento Natural das Árvores Fossilizadas e Adjacências	152140	A1, A2
Murici	7000	A1, A2, A3
Nascentes do Rio Parnaíba	730000	A1
Nhumirim	43887	A1, A3
Novo Progresso	2621296	A1, A2, A3
Ouro Preto / Mariana	50000	A1, A2
Painel / Urupeema	135000	A1
Pantanal de Nabileque	468274	A1, A3
Parque Estadual da Serra do Brigadeiro	13210	A1, A3
Parque Estadual da Serra do Mar (entre Caraguatatuba e Picinhuaba)	85000	A1, A2, A3
Parque Estadual da Serra do Mar (entre Pedro de Toledo e Cubatão)	140000	A1
Parque Estadual da Serra do Mar (entre Santos e São Sebastião)	110000	A1, A2, A3
Parque Estadual da Serra do Papagaio	22917	A1, A2
Parque Estadual das Lauráceas e Entorno	40000	A1
Parque Estadual do Cantão	90017	A1, A2
Parque Estadual do Desengano e Entorno	22500	A1, A2
Parque Estadual do Morro do Chapéu	6000	A1, A2
Parque Estadual do Pico do Itambé e Serra do Gavão	5000	A1, A2
Parque Estadual do Rio Doce	36000	A1

Source: Bird Life,

<http://www.birdlife.org/datazone/sitesearchresults.php?cty=30&fam=0&gen=0>

Table A6 List of IBA in Brazil (continued, 3/4)

Parque Estadual do Rio Guarani	2235	A 1
Parque Estadual do Rio Preto	10755	A 1
Parque Estadual do Turvo	17491	A 1
Parque Nacional da Amazônia	1161379	A 1, A 3
Parque Nacional da Chapada Diamantina	150000	A 1, A 2, A 3
Parque Nacional da Chapada dos Guimarães e Adjacências	66042	A 1
Parque Nacional da Chapada dos Veadeiros e Adjacências	395681	A 1, A 3
Parque Nacional da Lagoa do Peixe	34400	A 1, A 4 i, A 4 iii
Parque Nacional da Serra da Bodoquena e Entorno	326892	A 1, A 3
Parque Nacional da Serra da Capivara	100000	A 1, A 2, A 3
Parque Nacional da Serra das Confusões	502411	A 1, A 3
Parque Nacional da Serra do Divisor	840955	A 1, A 2, A 3
Parque Nacional das Emas	133064	A 1, A 3
Parque Nacional de Brasília	31895	A 1, A 2
Parque Nacional de Ilha Grande	78875	A 1
Parque Nacional de Itatiaia	30000	A 1, A 2, A 3
Parque Nacional de Monte Pascoal	22500	A 1, A 2
Parque Nacional de São Joaquim	49300	A 1
Parque Nacional do Cabo Orange	410424	A 2
Parque Nacional do Capará	31853	A 1, A 2
Parque Nacional do Catimbu	62555	A 1, A 2, A 3
Parque Nacional do Descobrimento	25000	A 1
Parque Nacional do Iguaçu	185000	A 1, A 3
Parque Nacional do Jaú	2377889	A 1, A 2, A 3
Parque Nacional do Pau Brasil / Trancoso	20000	A 1
Parque Nacional Montanhas do Tumucumaque	3882120	A 1, A 3
Raso da Catarina	390000	A 1, A 2, A 3
Reentrâncias Maranhenses / Paraenses	1134852	A 2, A 4 i, A 4 iii
Região de Blumenau	57374	A 1, A 3
Região de Pinheiro Machado	100000	A 1, A 2
Região dos Aparados da Serra	150000	A 1, A 2, A 3
Região Serrana do Rio de Janeiro	55000	A 1
Reserva Biológica da Mata Escura	51046	A 1
Reserva Biológica de Duas Bocas	4100	A 1
Reserva Biológica de Pedra Talhada	5000	A 1, A 2
Reserva Biológica de Poço das Antas	5000	A 1
Reserva Biológica do Rio Trombetas	409585	A 1, A 2
Reserva Biológica União	3126	A 1
Reserva Ecológica Maurício Dantas	1485	A 1
Reserva Particular do Patrimônio Natural SESC Pantanal e Entorno	506607	A 1
Restinga de Maçambaba e Ilha de Cabo Frio	9000	A 1, A 2, A 3
Rio Arrojado	100000	A 1
Rio Capim	2141584	A 1
Rio Claro	146773	A 1
Rio Guaraguauçu	5000	A 1, A 2
Rio Mucuri	5000	A 1, A 2
Rios Negro e Aquidauana	287852	A 1, A 3
Salto do Pirai	5000	A 1
Salto das Andorinhas e de Dardanelos	740	A 4 ii
Santa Cruz Cabrália / Bemonte	10000	A 1
Santa Teresa	14000	A 1, A 2, A 3
Santo Amaro / Cachoeira	2000	A 1
São Francisco Xavier / Monte Verde	45000	A 1
São José da Laje / Canhotinho	4000	A 1
São Pedro da Água Branca	112297	A 1, A 2
Savanas do Amapá	766643	A 1
Savanas do Rio Cotingo	1499454	A 1, A 2
Sento Sé / Campo Formoso	580000	A 1, A 2
Serra Bonita	4500	A 1, A 2
Serra da Bocaina / Paraty / Angra dos Reis	150000	A 1, A 2, A 3
Serra da Canastra	200000	A 1, A 2, A 3
Serra da Cantareira	8000	A 1
Serra da Mantiqueira	95000	A 1, A 2, A 3
Serra de Bonito	140000	A 1, A 2
Serra de Itapaba	100000	A 1, A 2, A 3
Serra de Itabaiana e Matas de Areia Branca	7966	A 1, A 2
Serra de Itamaraju	10000	A 1

Source: Bird Life, <http://www.birdlife.org/datazone/sitesearchresults.php?cty=30&fam=0&gen=0>

Table A6 List of IBA in Brazil (continued, 4/4)

Serra do Baturité	32690	A 1, A 2, A 3
Serra do Caraça	10000	A 1, A 2
Serra do Cipó	50000	A 1, A 2, A 3
Serra do Marumbi	66000	A 1, A 2, A 3
Serra do Mascarenhas	3500	A 1, A 2
Serra do Tabuleiro State Park (Parque Estadual da Serra do Tabuleiro BA)	87405	A 1, A 3
Serra do Teimoso	1000	A 1
Serra do Tinguá	28000	A 1, A 2, A 3
Serra do Urubu	1000	A 1, A 2
Serra dos Caraças	1223610	A 1, A 3
Serra dos Órgãos	16000	A 1, A 2, A 3
Serra Negra (Floresta)	6000	A 1, A 2, A 3
Serras das Lontras e do Javi	3000	A 1, A 2, A 3
Serras de Maranguape e da Aratanha	4500	A 1, A 2
Sooretama / Linhares	46000	A 1, A 2, A 3
Taboais	7351066	A 1, A 2, A 3
Tapacurá	776	A 1
Tepuis de Roraima	248250	A 2, A 3
Tepuis do Amazonas	4429575	A 2, A 3
Terra Ronca	676190	A 1, A 2, A 3
Tirecatina / Utiariti	605359	A 1
Trindade e Martin Vaz	1500	A 1, A 4 i, A 4 ii
Una	12000	A 1, A 2, A 3
Urubici	20000	A 1
Usina Cachoeira	6000	A 1
Vale do Guaporé	1664439	A 1, A 2
Vale do Peruaçu	60000	A 1, A 2, A 3
Vale do Rio Palmeiras	272225	A 1, A 2
Várzea do Canal São Gonçalo	70000	A 1, A 2, A 3
Várzeas da Região Metropolitana de Curitiba	20000	A 1, A 2
Várzeas de Monte Alegre	2664834	A 1, A 2
Várzeas do Curso Médio-Superior do Rio Iguaçu	1500	A 1
Várzeas do Médio Rio Amazonas	2875752	A 1, A 2
Várzeas em Tijucas do Sul	20000	A 1
Vitória da Conquista	10000	A 1, A 2, A 3

Source: Bird Life,

<http://www.birdlife.org/datazone/sitesearchresults.php?cty=30&fam=0&gen=0>

Appendix 7 CDM Projects in Brazil

Table A7 List of CDM Project in Brazil (1/3)

Registered	Project title	Other Parties	Methodology*	Reductions**	Ref
18/11/2004	Brazil NovaGerar Landfill Gas to Energy Project	Netherlands	AM0003	670133	8
24/11/2005	Onyx Landfill Gas Recovery Project – Trémembé, Brazil	Netherlands/ France	AM0011	70063	27
25/12/2005	N2O Emission Reduction in Paulinia, SP, Brazil	Netherlands/ UK and Northern Ireland/ France	AM0021	5961165	116
23/01/2006	Brazil MARCA Landfill Gas to Energy Project	Japan/UK and Northern Ireland	AM0003 ver. 3	231405	137
15/05/2006	Landfill Gas to Energy Project at Lara Landfill, Maua, Brazil	Switzerland/ Netherlands	AM0003 ver. 3	751148	91
25/05/2006	AWMS GHG Mitigation Project BR05-B-07, Mato Grosso, Minas Gerais and Goiás, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	149915	337
18/06/2006	AWMS GHG Mitigation Project BR05-B-02, Minas Gerais and Sao Paulo, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	152162	364
18/06/2006	AWMS GHG Mitigation Project BR05-B-09, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	49388	365
08/07/2006	AWMS GHG Mitigation Project BR05-B-06, Bahia, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	13835	409
09/07/2006	AWMS GHG Mitigation Project BR05-B-14, Espírito Santo, Minas Gerais and Sao Paulo, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	55493	420
09/07/2006	AWMS GHG Mitigation Project BR05-B-10, Minas Gerais, Goiás, Mato Grosso, and Mato Grosso do Sul – Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	90163	417
09/07/2006	AWMS GHG Mitigation Project BR05-B-15, Parana, Santa Catarina, and Rio Grande do Sul, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	47586	421
09/07/2006	AWMS GHG Mitigation Project BR05-B-04, Parana, Santa Catarina, and Rio Grande do Sul, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	90576	411
09/07/2006	AWMS GHG Mitigation Project BR05-B-11, Mato Grosso, Minas Gerais and Sao Paulo, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	67825	418
09/07/2006	AWMS GHG Mitigation Project BR05-B-13, Goiás and Minas Gerais, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	124218	419
09/07/2006	AWMS GHG Mitigation Project BR05-B-05, Minas Gerais and Sao Paulo, Brazil	Switzerland	AM0016 ver. 2	75458	412
15/07/2006	AWMS GHG Mitigation Project BR05-B-16, Bahia, Goiás, Mato Grosso, Minas Gerais, Rio de Janeiro and Sao Paulo, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	87922	422
29/08/2006	AWMS GHG Mitigation Project BR05-B-01, Minas Gerais, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	55771	335
10/09/2006	AWMS GHG Mitigation Project BR05-B-08, Parana and Rio Grande do Sul, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 3	17531	466
11/09/2006	AWMS GHG Mitigation Project BR05-B-12, Mato Grosso, Mato Grosso do Sul, Minas Gerais, and Sao Paulo, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 3	76052	472
29/09/2006	ECO INVEST – MASTER Agropecuaria – GHG capture and combustion from swine farms in Southern Brazil		AM0006	69469	469
30/09/2006	AWMS GHG Mitigation Project BR05-B-17, Espírito Santo, Mato Grosso, Mato Grosso do Sul, and Minas Gerais, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 3	43297	467
16/10/2006	AWMS GHG Mitigation Project BR05-B-03, Brazil	Switzerland/ UK and Northern Ireland	AM0016 ver. 2	182079	336
15/12/2006	Repowering Small Hydro Plants (SHP) in the State of Sao Paulo, Brazil	UK and Northern Ireland	ACM0002 ver. 6	22406	489
09/03/2007	Petrobras Wind Power Project for Oil Pumping at Macau, Brazil		AMS-IA ver. 8	1277	843
02/06/2007	N2O Emission Reduction in nitric acid plant Paulinia, SP, Brazil	Switzerland/ France	AM0028 ver. 4/ AM0034 ver. 2	80109	1011
09/08/2007	Mitigation of Methane Emissions in the Charcoal Production of Plantar, Brazil	Finland/ France/ Sweden/ Germany/ UK and Northern	AM0041	16098	1051

Note:

* AM – Large scale, ACM – Consolidated Methodologies,
AMS – Small scale
**Estimated emission reductions in metric tonnes of CO₂
equivalent per annum (as stated by the project participants)

Source UNFCCC, 2013

Table A7 List of CDM Project in Brazil (continued, 2/3)

14/09/2007	GEEA-SBS Biomass Treatment Project in Alegrete, Rio Grande do Sul, Brazil	Japan	AMS-III.E. ver. 10/ AMS-ID. ver. 10/	19223	1092
01/02/2008	AWMS Methane Recovery Project BR06-S-29, Sao Paulo, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	22819	1164
01/02/2008	AWMS Methane Recovery Project BR06-S-27, Goias, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	11001	1162
01/02/2008	AWMS Methane Recovery Project BR06-S-19, Goias, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	19989	1154
01/02/2008	AWMS Methane Recovery Project BR06-S-20, Minas Gerais, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	10433	1157
01/02/2008	AWMS Methane Recovery Project BR06-S-21, Goias, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	17918	1158
01/02/2008	AWMS Methane Recovery Project BR06-S-25, Minas Gerais, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	28222	1160
01/02/2008	AWMS Methane Recovery Project BR06-S-28, Santa Catarina, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	4228	1163
01/02/2008	AWMS Methane Recovery Project BR06-S-24, Mato Grosso and Mato Grosso do Sul, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	21280	1159
01/02/2008	AWMS Methane Recovery Project BR06-S-26, Minas Gerais, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	12411	1161
04/02/2008	AWMS Methane Recovery Project BR06-S-23, Mato Grosso and Goias, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	17104	1234
17/03/2008	AWMS Methane Recovery Project BR06-S-30, Mato Grosso and Mato Grosso do Sul, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	10342	1529
07/04/2008	AWMS Methane Recovery Project BR06-S-22, Minas Gerais, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	17273	1528
10/04/2008	AWMS Methane Recovery Project BR06-S-33, Minas Gerais and Sao Paulo, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	9576	1532
10/04/2008	AWMS Methane Recovery Project BR07-S-34, Bahia, Espirito Santo, Minas Gerais, and Sao Paulo, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	8585	1534
05/06/2008	AWMS Methane Recovery Project BR07-S-31, Mato Grosso do Sul, Parana, Rio Grande do Sul, and Santa Catarina, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	16398	1531
05/06/2008	AWMS Methane Recovery Project BR06-S-18, Parana, Rio Grande do Sul, and Santa Catarina, Brazil	Switzerland/ UK and Northern Ireland	AMS-III.D. ver. 11	32228	1521
21/07/2010	Reforestation as Renewable Source of Wood Supplies for Industrial Use in Brazil	Luxembourg/ France/ Ireland/ Switzerland/ Japan/ Spain	AR-AM 0005	75783	2569
21/08/2010	BRASCARBON Methane Recovery Project BCA-BRA-05, Brazil	Portugal	AMS-III.D. ver. 14	52511	3455
21/08/2010	BRASCARBON Methane Recovery Project BCA-BRA-07, Brazil	Portugal	AMS-III.D. ver. 14	45017	3456
08/11/2010	BRASCARBON Methane Recovery Project BCA-BRA-08, Brazil	Portugal	AMS-III.D. ver. 14	46678	3222
08/11/2010	BRASCARBON Methane Recovery Project BCA-BRA-02, Brazil	Portugal	AMS-III.D. ver. 14	45146	3220
23/12/2010	Emissions in the Charcoal Production of Grupo Queiroz Galvo, Maranhao, Brazil		AM 0041	226845	4262

Note:

* AM - Large scale, ACM - Consolidated Methodologies,
AMS - Small scale
**Estimated emission reductions in metric tonnes of CO2
equivalent per annum (as stated by the project participants)

Source UNFCCC, 2013

Table A7 List of CDM Project in Brazil (continued, 3/3)

04/01/2011	Guanhaes Energia CDM Project, Minas Gerais, Brazil (JUN 1123)		ACM 0002 ver. 10	62949	3898
07/01/2011	AES Tiete Afforestation/Reforestation Project in the State of Sao Paulo, Brazil	Canada/ Italy/ Luxembourg/ France/ Japan/ Spain	AR-AM 0010 ver. 4	157635	3887
Rejected	Reductions from Swine Manure Management System, Diamantino, MT, Brazil		ACM 0010 ver. 5/ AMS-ID. ver. 15	72526	4293
15/06/2011	Malagone SHP CDM Project, Minas Gerais, Brazil (JUN 1122)		ACM 0002 ver. 11	27552	4676
06/01/2012	wastewater treatment in Embaré - Lagoa da Prata, Minas Gerais, Brazil		AMS-IIIH. ver. 16/ AMS-IF.	7271	4212
Rejected	Reducing Agent in Pig Iron Mill of ArcebrM itta Juiz de Fora, Brazil		AM 0082	460474	8238
30/11/2012	SHP ITAGUACU CDM PROJECT (JUN 1146), BRAZIL		AMS-ID. ver. 17	14818	8500
14/12/2012	147 MW wind farm Acarau I, Brazil		ACM 0002 ver. 13	209452	8493
22/12/2012	39 MW Wind farm Acarau II, Brazil		ACM 0002 ver. 13	54961	8122
27/12/2012	25.5 MW Wind farm Aracati, Brazil		ACM 0002 ver. 13	31140	9110
28/12/2012	Use of Charcoal from Renewable Biomass Plantations as Reducing Agent in Pig Iron Mill in Brazil	Netherlands	AM 0082	329068	7577
15/03/2013	the Charcoal Production of V&M Floresta, Minas Gerais, Brazil		AM 0041	204471	8609

Note:

* AM - Large scale, ACM - Consolidated Methodologies,
AMS - Small scale
**Estimated emission reductions in metric tonnes of CO2
equivalent per annum (as stated by the project participants)

Source UNFCCC, 2013

