



ACTION PLAN OF THE STATE OF SÃO PAULO

AICHI TARGETS 2020
Implementation in the State of São Paulo

Strategic Plan for Biodiversity 2011-2020
Convention on Biological Diversity
São Paulo Committee on Biodiversity

GOVERNMENT OF THE STATE OF SÃO PAULO
SECRETARY OF THE ENVIRONMENT (SMA)
August 2013

*PACTION PLAN OF THE STATE OF SÃO PAULO – SMA COMPONENT
AICHI TARGETS 2020 IMPLEMENTATION IN THE STATE OF
SÃO PAULO*

*STRATEGIC PLAN FOR BIODIVERSITY 2011-2020
CONVENTION ON BIOLOGICAL DIVERSITY*

*GOVERNMENT OF THE STATE OF SÃO PAULO
SÃO PAULO COMMITTEE ON BIODIVERSITY - (CPB)
COORDINATION AND EXECUTIVE SECRETARY
STATE SECRETARY OF THE ENVIRONMENT*

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The View of the Secretary of the Environment of the State of São Paulo about the Aichi Targets

The Secretary of the Environment of the State of São Paulo participates in and follows up the issue of conservation of biodiversity in the state's territory since the creation of the secretary in 1986 by Governor Franco Montoro. When we examine this issue more thoroughly, we can see that it is historically much older and dates back to the 19th century, when the state's Research Institutes were created and when the Scientific Expeditions of the Commission on Geology and Geography of the State took place. The first state park ("Alberto Loefgren Park", a.k.a. "Horto Florestal") and the first Forest Police in a Brazilian State were created in 1940. More recently, also under Governor Montoro, the "Forest Foundation" was created to manage the ample system of Protected Areas of the State; such system is complemented by areas managed by the "Forest Institute", the "Botany Institute" and by the "Coordination of Urban Parks".

São Paulo has created several units of conservation that protect 4.65 million ha (from which more than 930 thousand classify as "Integral Protection"), among which there is the State Park of "Serra do Mar", with 300,000 ha – the biggest and most important part of the main corridor of "Mata Atlântica". In 1985 the State declared the entirety of "Serra do Mar", with an area of 1.3 mi ha, a natural heritage. Such initiative led many other States to grant "Mata Atlântica" the same status and is the embryo for the recognition of the Mata Atlântica Biosphere Reserve by UNESCO. Part of this reserve, which holds the most important remnants of this biome in the units of conservation of "Vale do Ribeira", was listed as a World Natural Heritage Site by UNESCO in 1999 following an initiative of the State of São Paulo.

In the 21st century three important Areas of Marine Environmental Protection, with a total of 1.1 mi ha were created, and during Rio+20, held in June 2012 in Rio de Janeiro, the "Paranapanema State Park of River Sources" was created by Governor Alckmin.

São Paulo also innovates in the incentives to the implementation of protected areas in private properties by means of the Program of Payment for Environment Services and support to the recovery of degraded areas.

A delegation of four members of the SMA-SP participated actively in the COP 10 ("Conference of the Parties") of the Convention on Biological Diversity held in Aichi/Nagoya/Japan, in 2010. The targets approved therein have since been em-

braced by SMA. In October 2012, a new delegation from SMA-SP was present to COP 11 in Hyderabad/India to evaluate the advancements in the implementation of CBD and actively helped the construction of new partnerships and of local and global strategies for the conservation and sustainable use of biological diversity, with an immediate reflex in the work of the São Paulo Committee on Biodiversity.

Besides the attributions inherent to SMA regarding the protection of the biological diversity of the State, and the cooperation that it develops with other States of the Nation and in the world, several specific steps have been taken in São Paulo to reach the targets established by the UN.

The most important of such steps was the creation of the São Paulo Committee on Biodiversity, which has seventeen participants from the Civil Society and from several Secretaries of the State and whose main attribution is the development, in the state of São Paulo, of the Action Plan to reach the Aichi Targets. This Action Plan is the first relevant product by this Committee, whose Coordination and Executive Secretary are made by SMA.

We have also participated directly in initiatives from the federal government and from some NGO's regarding the implementation of the Aichi/Nagoya Targets throughout the national territory as well as of a national plan by means of a strategy known as "Dialogues about Biological Diversity: building the Brazilian strategy for 2020".

Finally, we highlight the important work conducted by the "BIOTA-FAPESP" Project in identifying priority areas for Conservation of Biodiversity; such work involves SMA, FAPESP, several universities and NGO's and is the most thorough scientific study developed in the country to that effect, having become an example to other States. It is the basis for the work of the São Paulo Committee on Biodiversity.

Bruno Covas

Secretary of the Environment of the State of São Paulo.

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The Secretary of the Environment of the State of São Paulo

The Secretary of the Environment of the State of São Paulo – SMA – was created in 1986 to promote the preservation, betterment and recovery of the environmental quality, coordinating and integrating activities connected to the protection of the environment. Three years later, new attributions were incorporated by SMA, which was responsible for the preparation of the State Policy on the Environment and by its implementation in 1997, establishing the State System of Management of Environmental Quality, Protection, Control and Development of the Environment and Adequate Use of Natural Resources – “SEAQUA” (in Portuguese), of which SMA is the central authority.

In 2008 and 2009, SMA was restructured pursuant to a state decree. Since then, besides coordinating the preparation, approval, execution, evaluation and updating of the State Policy on the Environment, the secretary is also responsible for analyzing and following up sectorial public policies which have an impact on the environment, as well as for articulating and coordinating actions and plans related to the environmental area. This way, environmental questions not only integrate the Secretary of the Environment but are also present in different departments and public spheres of the State of São Paulo, which work together with SMA.

SMA is also responsible for carrying out the activities connected to environmental licensing and control/inspection, besides promoting actions for environmental education, standardization, control, protection, conservation and recovery of natural resources. To that effect, departments, research institutes, coordination areas, companies and foundations work in synergy to carry out the activities under SMA’s responsibility.

In order to improve environmental management in the State, ten theme areas have been created to conduct the environmental agenda in different areas, such as water, soil, solid residues, green economy and environmental planning, biodiversity and units of conservation, environmental control/inspection, animal care, air and environmental licenses. Such theme areas have resulted in more than 65 projects and/or programs with varied actions. Having environmental management as a universal and transversal theme, SMA works in an integrated fashion with other organs of the State government and seeks and establishes partnerships with city halls, the private sector, non-governmental organizations and research institutions.



With all this experience, infrastructure and body of attributions, SMA has been asked by the Governor of the State of São Paulo to coordinate, in association with fundamental partners of society and other organs of the state government, the implementation of the strategic plan of the Convention on Biological Diversity / CBD in the state until 2020.

Advancements and challenges in designing a regional and subnational agenda for biodiversity

Decision X/22 of COP 10 (Conference of the Parties) of the Convention on Biological Diversity/ CBD held in Nagoya, capital of the province of Aichi, Japan, from October 18 to 29, 2010, fosters and guides subnational governments to adopt measures to implement the Biodiversity Targets and other actions for the implementation of the decisions of COP X, especially Decision X/28 – which deals with continental waters.

Recognizing the value of governments and of local initiatives within national strategies, this approach is worth of notice within the scope of conclusions of COP X. Ratifying an intense prior discussion, and aware of the need for the resources that make such regional actions viable, Decision X/22 also reinforces an action plan – with a list of suggested activities – for subnational governments which are taken in context regarding their active participation in the respective national plans and the priorities thereof, and which also takes into consideration the capabilities and needs of such subnational governments.

In the global process of elaboration of subnational agendas, as suggested by COP X and all of which are connected and complementary to the respective national plans, we can highlight:

- The engagement, duly recognized, on the part of local authorities and other important actors, building a broadly participative process in the revision,

implementation and fundamental monitoring of national plans and ample global discussions regarding biodiversity, supported by action plans and strategies closer to each subnational reality.

- The use of approaches that take into consideration the ecosystems and a holistic management of landscapes – approaches which are integrated with the precepts of the conventions of RIO, the respective COP's and the adaptation and sustainable development plans, strengthening the local systems of units of conservation, which are aligned with the Aichi Targets.
- Integration by the local authorities of those aspects related to the conservation of biodiversity to the public policies and investments in infra-structure.
- Optimization of diverse and integrated sources of funding and of incentives to implement plans related to the Aichi Targets – including correlated areas such as climate change, payment for environmental services, REDD+ (Reducing Emissions from Deforestation and Forest Degradation”) etc.

Talking about a subnational agenda in Brazil, a mega-diverse country with continental dimensions and a very broad cultural matrix means an insurmountably complex task. And the State of São Paulo is no exception.

Being the state with the biggest population in Brazil, with more than 40mi inhabitants, it represents more than 20% of the national population. It occupies, however, only 3% of the national territory that is 248,209,426 km²; therefore, space is a paramount issue in any agenda regarding biodiversity which involves the people from São Paulo.

In order to use well this limited space, which hosts remnants of two of the most important Brazilian biomes – Savanna and “Mata Atlântica”, issues regarding the productivity of economic activities and the sustainable use of natural resources and natural landscapes are a priority. Hosting some of the most important research and study centers in the country, besides specific programs of investigation in biodiversity (for example, the innovative “Project BIOTA” from FAPESP - Foundation for the Support to Research of the State of São Paulo), the state has had participative projects of extremely high level, which is an ideal condition for the



acknowledgment, conservation and adequate use of biodiversity.

The economy of the state of São Paulo represents more than 30% of the GDP and more than 30% of the national commercial businesses; therefore, it is very diverse and complex, and offers the possibility to anticipate situations in favor of sustainability when the demands are presented by society.

It is within such context that the construction of a regional agenda for biodiversity with the specificities of São Paulo is understood – the construction of a participative action plan with a solid basis on both the international scenario (integrating themes such as climate change and the Convention on Biological Diversity itself) and the national one (for example, the elaboration of the respective National Plan and the “Dialogues about Biological Diversity: building the Brazilian strategy for 2020”, which had the active participation of the Secretary of the Environment of the State of São Paulo and the related efforts of ABEMA – “Brazilian Association of State Entities for the Environment”), taking the reality of São Paulo as a starting point.

Therefore, analyzing the details (remarkable continental waters, Savanna, “Mata Atlântica”, a unique industrial park and the cities) and the typical scenarios of the state, integrated to the neighboring units of the Federation (Paraná, Mato Grosso do Sul, Minas Gerais and Rio de Janeiro) and in harmony with actions aimed at the sustainable management of the coastal and ocean areas, São Paulo integrates actions of conservation, restoration and promotion of biodiversity as well as a deep knowledge and sustainable use thereof in this participative Action Plan that is being now designed and implemented.

The Biodiversity in the State of São Paulo

Located in the transition between the tropical and the subtropical regions, the territory of the State of São Paulo, divided into five geomorphological units, presents interactions of climate and surface/topography which have resulted in varied environments, determinant for the remarkable diversity of life forms in complex balance among each other and with the physical environment, which were witnessed by the Portuguese explorers in the 16th century.

The biodiversity of the state is among the richest in the country. In its original condition, the territory was integrally covered by the biomes “Mata Atlântica” and Savanna, both considered hot spots, a term with solid understanding on the part of the public – which denotes biomes that have a high degree of endemism, high richness of species and severe level of threat simultaneously.

The Savanna Biome, considered one of the richest tropical savanna environments in terms of species in the world, extended originally over about 21% of the surface of Brazil, and presents 10,000 vegetal species – 44% of which are endemic – and 1,276 species of terrestrial vertebrates – 889 of which are endemic – besides over 11,000 species of invertebrate and about 800 species of freshwater fish – 200 of which are endemic.

The “Mata Atlântica” Biome contains an enormous variety of vegetal formations, constituting a mosaic of native forest formation and associated ecosystems. It has played an important role in the Brazilian history and is considered one of the biggest biodiversity repositories on the planet. It has 20,000 plant species – 8,000 of which are endemic – and 1,980 terrestrial vertebrate species – 599 of which are endemic. There is only 8% of its original extension left in the country, the biggest continuous area is preserved in the state of São Paulo.

The presence of such biomes, together with other natural aspects such as ancillary vegetation, ecotonal environments, humid areas and the once ample swamps of the big rivers that run towards the countryside have brought an extremely rich diversity of life forms and landscapes to the geomorphological compartments of the state.

The Coastal Province, the only portion of the territory that drains directly into the Atlantic Ocean, with a super humid tropical climate and a latitudinal gradient that varies from 0m at “Baixada Litorânea” (sea level) to approximately 1,200m on “Serra da Costeira” (mountain) was covered by “Mata Atlântica”, which constitutes a diversified mosaic in its different physiognomies.

The sandbank, which corresponds to a body of varied combinations of different types of vegetation, which extends from the terrains right above the sea level all the way until the base of “Serra do Mar” includes herbaceous vegetation on and in between the sand stripes, the low forest of the sandbank, swamps, high forest of the sandbank, hygrophilous forest and transition forest to the ombrophilous dense forest. Although less luxurious than the ombrophilous dense forest, sandbanks house endemic vegetal species and are important areas for the fauna, specially for



water birds reproduction and provide feeding and resting areas for endemic and migratory birds.

The Ombrophilous Dense Forest, which develops under high humidity conditions and on shallow, acid and poor-in-nutrient soils, is very rich in species and has high endemism – more than half of the flora species are exclusive; it also characterizes by abundant vines and epiphytes in its higher stratum.

The mangrove, with halophyte plants (adapted to a saline environment), which occur mainly in the area of “Baixada Santista” towards the south, is a highly productive area important for the decomposition of organic matter and constitutes a real link between the terrestrial and aquatic environments while it allows a huge diversity of animal species to thrive, mainly resident young marine organisms and fresh and salt water visitors – fish, birds, crustaceans, mollusks and others, which use the mangrove to obtain food, to protect against predators, to reproduce and to grow.

There are also the rocky shores, estuaries (tideland) and beaches, which house many forms of highly specialized animal and vegetal life, for which such environments are irreplaceable, as well as ocean islands, which house endemic species to their territories besides the ones they share with the continent. The islands on the coast of São Paulo also offer nidification/nesting and resting areas for marine and migratory birds. A big variety of fish live in the marine waters of São Paulo, including rare and threatened species, besides several others of commercial and game value. Almost all marine turtle species which occur in Brazil can be found in the coast of São Paulo, as well as many marine mammals such as the Spotted-Dolphin-of-the-South-Atlantic (*Stenella frontalis*), “Franciscana” (*Pontoporia blainvillei*), and the Bryde-whale (*Balaenoptera edni*).

The continental waters of the state, although partially modified by pollution, dams, consumption and invasions by exotic species still house an enormous number of organisms, which spread over several taxonomic groups in different realms. Among the vertebrates, there are approximately 335 species of fish in the continental waters of the state, besides algae, fungi, bacteria, etc. and a high number of invertebrates.

From the coast inwards to the countryside, in the higher portion of “Serra do Mar”, on “Serra da Mantiqueira” and in parts of “Planalto Atlântico” (Atlantic Plateau), there are other vegetal formations such as natural fields (steppe), Nebular Forest (Alto-Montana Ombrophilous Dense Forest) and the mix Araucaria and Podocarpus forest (Mix Ombrophilous Forest), occupying the higher portions.

From “Planalto Atlântico” towards the west, occupying the “Depressão Periférica” (Peripheral Depression) – “Cuesta” and the “Planalto Ocidental” (Western Plateau), the Countryside “Mata Atlântica” (Semi-deciduous rainforest/seasonal Forest and Deciduous rainforest/seasonal Forest) and the Savanna in its different physiognomies used to dominate the countryside of the state.

The rainforest/seasonal Forest, which used to cover deep, well-drained and highly-fertile soils, is characterized by developing in the seasonal climate of the countryside of the state, which results in the presence of deciduous arborous species (which lose their leaves in the dry season) which differentiate it from the Ombrophilous forest, despite the occurrence of several vegetal and animal species in common.

The Savanna of the state of São Paulo (“Cerrado”) comprises a mosaic of various types of vegetation which encompass four physiognomies: fields – with predominantly herbaceous vegetation; savanna-fields – with more than 50% coverage of herbaceous vegetation and arborous coverage of up to 20%; savanna stricto sensu - with stratum of discontinued vegetation composed of 20% to 50% of trees and bushes and herbaceous coverage of 50% at most, and the “cerradão”, a forest physiognomy that develops on a little more fertile soils, where the arborous stratum with an average height between 8m and 15m composes a continuous canopy. Even though the savanna is the typical coverage of sandy soils of low natural fertility, the areas of the savanna, which corresponded to 14% of the territory, have been reduced to approximately 1% of the surface of the state, according to estimates, as a result of the expansion of agriculture and industrial farming of livestock.

With its evolution conditioned by such variety of environments, the fauna of the state of São Paulo also presents a great variety of species associated to the several types of vegetation and climate. The number of animal species that exist in the state, still being studied by researchers, with information grouped in the BIOTA-FAPESP program, is approximately 2,500 vertebrates. For the invertebrates, the estimate points at a much higher number of species, not counting the subgroups and other living organisms that are not so well known, such as microorganisms, which would increase this number exponentially.

Out of the types of vegetal formations existing prior to the colonization, the rainforest/seasonal forest and the savanna were the most depleted ones, and are reduced to fragments of their existence nowadays, usually isolated and subject to a powerful anthropic pressure.



The forest environment, which used to cover 80% of the surface of the state of São Paulo, now corresponds to barely 16.6% of the territory. The savanna biome, which used to cover 14% of the territory, now covers approximately 1% of this area ¹. This reduction is the result of a historic process of occupation of the territory and of the economic activity which, by means of urbanization, conversion of land for agriculture and industrial farming of livestock, and extraction, among other vectors, have pulverized the native vegetal coverage and reduced it to the remaining small portions. These fragments, in most cases, present reduced dimensions and are far from each other, characterizing an isolation that either hinders or hampers the genic flow and its ecological functions, which compromises the conservation of biodiversity and constitutes the most important cause of extinction of flora and fauna species in São Paulo.

One of the best ways to preserve what is left of our biodiversity is the creation of protected areas, known as Units of Conservation (UC). According to Federal Law 9.985, 2000 (“SNUC – National System of Units of Conservation”), a UC is defined as: “territorial spaces and their environmental resources, therein included jurisdictional waters, with relevant natural characteristics, legally created by the Public Power, with defined limits and conservation objectives, under special management regime, and to which adequate guarantees of protection apply.” Such units can be classified in 12 different categories within two basic types: units of conservation of integral protection and units of conservation of sustainable use. In São Paulo, UC are managed by the Forest Foundation, the Forest Institute and the Botany Institute.

The Forest Foundation manages the biggest part of the protected areas, that is, more than 4.000.000 ha. In other words, when the areas corresponding to the units of conservation of integral protection are added to those of sustainable use, the number represents approximately 15% of our territory and of our jurisdictional waters. Besides the units of conservation managed by the State Government, there are other UC managed by partner institutions, both on the municipal and on the federal level, as well as those managed privately by individuals who have made areas of their property permanently available, turning them into “Private Reserves of Natural Heritage” – (RPPN in Portuguese), which are acknowledged by the Public Power.

1 “Forest Inventory of the Native Vegetal Coverage of the State of São Paulo, 2008-9, Forest Institute.2010.”

The natural areas under the integral protection regime are concentrated along the coastal line, and extend inwards the land, towards the hills of Serra do Mar, Serra da Bocaina, Serra de Paranapiacaba and Serra da Mantiqueira, from the borders with the states of Minas Gerais and Rio de Janeiro all the way to the border with the state of Parana, preserving the longest continuous extension of Mata Atlântica and associated ecosystems in the country. However, the rainforest/seasonal forest formations of Mata Atlântica and the different physiognomies of savanna, besides the humid natural environments such as “veredas” [N.T. “veredas” are areas with more abundant water in the “caatinga”(a typical vegetation of semi-arid climate, located in northeastern Brazil), located between the mountains and the river valleys] and lowlands, can be better represented in the body of UC of integral protection. There are important reminiscent portions of such natural areas that face strong anthropic pressure and are not yet either under the tutelage of the State or under another type of effective protection, as well as marine areas, bodies of freshwater and potential biologic corridors, which demand immediate and specific conservation actions.

In parallel to the creation and management of units of conservation, the Secretary of the Environment of the State of São Paulo establishes several instruments aiming at effectively protecting the biodiversity. Among others, the establishment of other protected areas, as set forth by federal legislation, such as the areas of permanent protection and the legal reserves; the periodical updating of the “Red List” for the State of São Paulo (which lists those species threatened by extinction); the development of projects regarding the payment for environmental services; the stimuli to the recuperation of degraded areas by private individuals; the involvement of different sectors of the economy in a commitment for sustainability; the preservation and the control of biological interventions; the fight against wild animal trafficking, and the support to the São Paulo Committee on Biodiversity, which integrates São Paulo to the global efforts for the conservation of the biodiversity, are examples of such instruments.



The Convention on Biological Diversity (CBD) and the Brazilian participation

On the global level, the Convention on Biological Diversity (CBD) is an important document agreed upon in the United Nations Conference on Environment and Development (UNCED or Rio'92) and signed on June 5, 1992, for the protection of the environment and the establishment of more environmentally sustainable actions in our planet. Until that date, there were only partial agreements for the protection of certain species and certain ecosystems. The convention became internationally effective as of December 29, 1993 and came into force in Brazil on May 29, 1994. Enacted by the Federal Government by means of Decree number 2.519, dated March 16, 1998 after approval by the National Congress carried out by means of Legislative Decree number 2, dated February 3, 1994, the CBD began to be fully executed in the country as of March 17, 1998. Since then, there have been several international, federal and local initiatives to make the full execution of the present global instrument viable involving direct actions, regular evaluations and constant monitoring which culminate in directed and updated planning activities. The Aichi Targets, which constitute the basis for this document, are part of such complex international process. The Convention on Biological Diversity is currently an international agreement of which 192 countries participate, including Brazil and the European Unit.

The Convention on Biological Diversity has innovated by recognizing the intrinsic value of the biodiversity (the body of all living beings) and by establishing as CBD's main objectives not only the conservation but also the sustainable use and the repartition of the benefits derived from the exploitation of the genetic resources.

CBD also recognized the sovereignty of the countries over the genetic resources existing in their territories, which had been up until then considered human heritage.

CBD has an Executive Secretary with headquarters in Montreal, Canada, which is responsible for the organization of its meetings – there are meetings with all the Parties (member countries) every two years – for hiring consulting companies, and for preparing and distributing documents. The current secretary is the Brazilian Braulio Dias.

CBD's activities are structured in thematic programs such as agricultural biodiversity, forest biodiversity, marine and continental waters, among others, and transversal themes, such as 2020 Targets, biodiversity and development, protected areas and the implementation and revision of the Conference itself, among others.

Conference of the Parties

The conference of the Parties is the highest instance of CBD, where decisions are made as a result of consensus. The decisions of the Parties have the stature of laws in the countries that ratify the Convention. Such meetings happen every two years, in different geographic regions of the planet.

In 2010, Nagoya, the capital of the province of Aichi, Japan, held COP10, or the 10th Conference of the Parties of the CBD between the 18th and the 29th of October of that year.

The most polemic themes of the agenda discussed during COP10 were related to the implementation of the Convention around the world – particularly regarding the evaluation of its progress and the necessary actions to make it integrally effective. On the international level, the targets for biodiversity were established by decision of the Parties. Some of them are:

- CBD's Strategic Plan – Decision VI/26, 2004 (COP6);
- Global Strategy for the Conservation of Plants – Decision VI/09, 2004 (COP6);
- CBD's Targets and Objectives Structure – Decision VII/30, 2007 (COP7); and
- Outline for Monitoring and Executing the 2010 Targets – Decision VIII/15, 2008 (COP8)

The third edition of the Global Biodiversity Outlook (GBO3), prepared in the footsteps of 120 national reports presented by the Parties, made it very clear that the 2010 Targets have not been fulfilled by any country. Most Parties confirmed that the five most important causes for the loss of biodiversity remained the same:



- Loss of habitats;
- Unsustainable use and overexploitation of biological resources;
- Climate change;
- Invading exotic species;
- Pollution.

Based on this analysis, it was possible to build a work plan for the period 2011-2020, therein including the necessary strategy to mobilize the resources. Such plan, generated during COP10 and formalized by Decision X/2 is officially recognized as the Strategic Plan for Biodiversity 2011-2020, also identified as Aichi Targets (or Aichi-Nagoya Targets).

Another theme that generated heated debates among negotiators present at COP10 was item III of the agenda: access and repartition of the benefits derived from the use of genetic resources.

Since Johannesburg (South Africa), in 2002, when Rio+10 took place (World Summit on Sustainable Development), the international regime of access to genetic resources and the repartition of the benefits thereof have been discussed and negotiated. This theme has generated intense polemic between the two sides involved: one being the countries that host or have in their territories companies that use genetic resources and the other being the mega-diverse countries.

As a result of COP10, according to Decision X/1, the repartition of benefits was discussed and established through the Nagoya Protocol.

An Intergovernmental Committee was created to coordinate the implementation of the Protocol, according to the Work Plan approved (appendix II of the Decision), which was evaluated during COP11, which took place in October 2012 in Hyderabad, India. The objective of the Protocol is to guarantee the fair and equitable repartition of the benefits derived from the use of genetic resources and of the traditional knowledge associated to them.

Since 2001, this theme has been regulated in Brazil by the Federal Government by means of Decree number 2.186/2001. In the State of São Paulo, SMA was a pioneer in this theme when it elaborated in 1998 a pre-project for a law on the matter, which was presented to CONSEMA – “State Council of the Environment”. According to the existing federal legislation currently in effect, the government of São Paulo is eligible to the repartition of the

benefits derived from the exploitation of genetic resources existing in its territories. At the moment, a specific policy is under way.

The Units of Conservation and other protected public areas of São Paulo hold a very rich biological diversity (also endemic, since some species just occur here) and the State fosters research in the area (the BioProspect net of BIOTA/FAPESP), which has been systematized for more than two decades by means of COTEC – “Technical-Scientific Committee of the Forest Institute”.

Aichi Targets 2011-2020: CDB’s Strategic Plan for Biodiversity

For the elaboration of the Strategic Plan, 20 targets have been defined, regarding the conservation of the biodiversity, gathered under five objectives. This document is considered the basis for the current planning related to the implementation of CBD.

Such targets are presented in the following manner:

Strategic objective A (Aichi Targets 2011-2020):

To treat the real causes of the loss of biodiversity, internalizing the “biodiversity” theme throughout the government and the society.

Target 1: By 2020 at the latest, people must be aware of the values of biodiversity and of what they can do to preserve it and to use it in a sustainable manner.

Target 2: By 2020 at latest, biodiversity values must be integrated to development and reduction of poverty strategies and national and local planning processes, and they must be incorporated into the national accounting in an adequate manner, and to the systems of documentation and communication.

Target 3: By 2020 at the latest, incentives – therein included subsidizes – harmful to the biodiversity must have been eliminated or reviewed in order to minimize or avoid negative impacts, and positive incentives for the conservation and for the sustainable use of the biodiversity must have been developed and applied in a manner consistent and in harmony with the Convention and other relevant national obligations, taking into consideration the national social-economic conditions.



Target 4: By 2020 at the latest, governments, businesses and decision makers on all levels must follow steps to reach, or have plans implemented for, sustainable consumption and production and must keep the impacts of the use of natural resources within safe ecological limits.

Strategic objective B (Aichi Targets 2011-2020):

To reduce the direct pressures on the biodiversity and to promote its sustainable use.

Target 5: By 2020, the rate of loss of all natural habitats, including forests, must be reduced to less than half and, if possible, taken to zero, and degradation and fragmentation must be significantly reduced.

Target 6: By 2020, all fish and invertebrate stock and aquatic plants must be managed and used in a sustainable and legal fashion based on the adoption of an eco-systemic approach, so that overfishing is avoided, plans and measures of recovery are implemented for all depleted species, fishing does not have significant adverse impacts on threatened species and vulnerable ecosystems and the impact of fishing on stocks, species and ecosystems are within safe ecological limits.

Target 7: By 2020, areas with agriculture, aquaculture and forestry must be managed in a sustainable fashion, guaranteeing the conservation of biodiversity.

Target 8: By 2020, pollution including the one deriving from nutrient excess must be at levels not harmful to biodiversity and to the ecosystem function.

Target 9: By 2020, invading exotic species and routes of introduction must be identified and prioritized; priority species must be controlled or eradicated and measures to manage the routes must be adopted, preventing the introduction and the establishment of invading exotic species.

Target 10: By 2015, the multiple anthropogenic pressures on coral reefs and other vulnerable ecosystems impacted by climate change, or ocean acidification, must be minimized to keep the integrity and functioning of such ecosystems.

Strategic objective C (Aichi Targets 2011-2020):

To improve the situation (status) of biodiversity, protecting ecosystems, species and genetic diversity.

Target 11: By 2020, at least 17% of the terrestrial areas and continental waters, and 10% of marine and coastal areas, especially areas of particular importance for the biodiversity and eco-systemic services, must be preserved by means of an equitable and efficient management, must be ecologically represented with well-connected systems for protected areas and other efficient measures of conservation based on the area and integrated to more ample terrestrial and marine landscapes.

Target 12: By 2020 the extinction of endangered species must be halted, and the conservation situation of such species, particularly those undergoing deeper decline, must be improved and maintained.

Target 13: By 2020, the genetic diversity of cultivated plants and domestic animals and that of their wild counterparts, including other species with social, economic and cultural importance, must be maintained, and strategies to minimize their genetic erosion and to protect their genetic diversity must be implemented.

Strategic objective D (Aichi Targets 2011-2020):

To highlight the benefits of biodiversity and of eco-systemic services to everyone.

Target 14: By 2020, the ecosystems that supply essential services, including services related to water, and that contribute to health, feeding and well-being must be restored and protected taking into consideration the needs of women, indigenous populations and local communities, and those of the poor and vulnerable.

Target 15: By 2020, the resilience of ecosystems and the contribution of biodiversity for carbon stocks must be amplified by means of the conservation and restoration, including the restoration of at least 15% of degraded ecosystems, hence contributing to the mitigation of climate change and for the adaptation and fight to desertification.



Target 16: By 2015 the Nagoya Protocol on Access to Genetic Resources and on the Fair and Equitable Repartition of the Resulting Benefits of their use must be in full force, constituting national legislation.

Strategic objective E (Aichi Targets 2011-2020):

To improve and amplify implementation by means of participative planning, knowledge management and capacitation.

Target 17: By 2015 each Party must develop, adopt as a policy instrument, and initiate the implementation of an action plan and a participative, up-to-date national biodiversity strategy.

Target 18: By 2020, traditional knowledge, innovations, and indigenous and local community practices relevant to the conservation and sustainable use of biodiversity, and the customary use of biological resources must be respected, subject to all relevant national legislation and international obligations, and totally integrated and reflected in the implementation of the Convention, with the total and effective participation of the local and indigenous communities at all relevant levels.

Target 19: By 2020, the knowledge, the science base and technologies related to biodiversity, its values, functioning, situation and tendencies, as well as the consequences of its loss, must be improved, amply shared, transferred and applied.

Target 20: By 2020 the latest, the mobilization of financial resources from every source for the effective implementation of the Strategic Plan for Biodiversity 2011-2020, and in compliance with a consolidated and agreed process in the Strategy for the Mobilization of Resources must be substantially superior to current levels. This target is subject to changes deriving from the needs assessment for resources which will be prepared and reported by the Parties.

The implementation of the Aichi Targets in Brazil follows a national Action Plan which is being elaborated by means of a process coordinated by the MMA – Ministry of the Environment. Such plan is a result of the “Dialogues about Biological Diversity: building the Brazilian strategy for 2020”, a

process conducted by a number of partners and that had the presence of the Secretary of the Environment of the State of São Paulo, among other important institutions for the scenario of conservation of the Brazilian and global biodiversity.

In the State of São Paulo, the articulation of such implementation is the responsibility of the São Paulo Committee on Biodiversity created by the Governor of the State and coordinated by the Secretary of the Environment of the State of São Paulo. This Action Plan, presented in this version, defines the central action paths of the State of São Paulo pursuant to what was established by CBD until 2020.

The Views regarding the Aichi Targets

This plan is based on the premise that reaching the targets depends on an intense synergy among all actors – governmental and non-governmental – in the conception and realization of their actions. Therefore, in a transparent, democratic and participative manner, the São Paulo Committee on Biodiversity itself is the forum for the construction of this Action Plan.

Texts from representatives of some sectors and collective texts are presented below, we thank all of them for their efforts in this work in favor of global biodiversity, they who have contributed for the richness of this document composing a body of views about the Aichi Targets.

Departing from the view of the Secretary of the Environment of the State of São Paulo, which was in charge of coordinating and serving as secretary for the São Paulo Committee of Biodiversity, the Views of the business sector, of the Mata Atlântica Biosphere Reserve, of the academia and of representatives from the organized civil society are presented by means of texts signed by the authors.



The View of the Business Sector

The 10th Conference of the Parties of the Convention on Biological Diversity (CBD) – COP 10, held in Japan, in 2010, rendered the world the biggest environmental impact signed by the countries member of the Kyoto Protocol. The more than 190 governments signatory of CBD signed a bold agreement for the protection of the diversity of species and of the genetic resources of plants, animals and micro-organisms: the Protocol on Access to Genetic Resources and Repartition of the Benefits resulting from the genetic resources of the biodiversity – a guideline for the financial resources for the implementation of the actions of conservation and of the Strategic Plan for Biodiversity for the period 2011-2020.

The Strategic Plan of CBD contemplates 20 global targets – Aichi Targets – subdivided in five strategic objectives that verse on a variety of issues, ranging from the stimulus to sustainable development based on the conservation of the terrestrial and marine biodiversity to the fight against factors that put pressure on ecosystems. It also discusses transversal questions such as the increase in knowledge about the value of biodiversity and the need to mobilize financial resources.

According to agreement, signatory countries should define their own targets, taking into consideration the national needs and priorities and bearing in mind the national contribution to the fulfillment of global targets. As a signatory of CBD, Brazil committed to mobilize several national sectors so that they could internalize the Aichi Targets in each segment and work for the implementation thereof.

In 2011, the debates about the internalization of the targets started in Brazil led by the Ministry of the Environment (MMA), in conjunction with the International Union for the Conservation of Nature (IUCN), the WWF-Brazil and the Institute for Ecologic Research (in Portuguese - IPE), and became known as “Dialogues about Biological Diversity: building the Brazilian strategy for 2020”. The main target of this process was to review and update the national strategy on biodiversity by means of the elaboration of the national targets for 2020 in a very participative fashion, involving five sectors of society.

The initiative mobilized intense participation of the business sector, coordinated by the “Business Movement for Biodiversity – Brazil (MEB-Brazil); the National Confederation of the Industry (CNI) and the Brazilian Business Center for Sus-

tainable Development (CEBDS). Representatives of NGO's, traditional communities, indigenous populations, academia and governments also participated in the construction of the proposal for the national targets.

Brazilian companies are aware of their important role in the implementation of the national targets on biodiversity, both in relation to the targets and to the opportunities. For this reason, governmental and private companies engaged in the Dialogues about Biodiversity, during which the essential conditions for the fulfillment of the national targets were debated and the proposals for the necessary strategic actions were built.

Among the targets that most affect the business sector, there are those related to the incorporation of the costs of biodiversity in the national accounts, the valuation of biodiversity, the increase in the protected areas, the payment for environmental services, the implementation of the Nagoya Protocol on the access to and repartition of the benefits derived from the use of biodiversity (ABS Protocol) and the mobilization of financial resources.

For the business sector, some of the necessary and essential actions for the fulfillment of the Aichi Targets are: the amplification of knowledge about biodiversity, clear methodologies for valuation; awareness about consumer's responsibilities, implementation of incentives and positive financing to sustainable production, the integration of economic logic to conservation and to sustainable use, utilization of a system of payments for environmental services as an incentive to preservation following a good practices tendency, besides the definition of a new legal milestone for the access to the genetic heritage that promotes sustainable use and guarantees the equitable and fair repartition of benefits.

In the case of businessmen, the target related to the access and repartition of the benefits of biodiversity is fundamental, since today there is a lack of stimulus to the sustainable use of the Brazilian biodiversity on the part of companies and there are not clear laws that incentivize businessmen to create new sustainable businesses.

The Business Movement for Biodiversity – Brazil (MEB-Brazil) has acted in the perspective that the sustainable use of the natural heritage represents an opportunity in the transition towards a new economy which is socially inclusive and which respects the limits of the planet.



Business Movement for Biodiversity – Brazil

Within a context of urgency for new businesses that promote conservation and the sustainable use of biodiversity, as well as for favorable new public policies, the Business Movement for Biodiversity – Brazil (MEB-Brazil) was born in 2010, formed by companies and organizations committed to the sustainable development of the country.

The main objectives of MEB-Brazil are the mobilization of businessmen willing to make commitments and to carry out actions for the sustainable use and for the conservation of biodiversity within the realm of their businesses. The intention is to improve and to innovate business' practices as well as to contribute for the construction of a legal and regulatory milestone compatible with the assets of the Brazilian biodiversity.

The commitment of the businessmen who are members of MEB-Brazil to the process of internalization of the Aichi Targets in their businesses happens as soon as they become members of the movement. The base document to become a member of MEB-Brazil is the “Letter of Intent” (available at <http://www.mebbrasil.org.br/download/carta-empresarial.pdf>), whose point number one is: to adopt the principles and objectives defined in the Convention on Biological Diversity (CBD), incorporating into our corporate strategies those actions aimed at the Conservation and Sustainable Use of Biodiversity and the Fair and Equitable Repartition of the Benefits arising from such use.

Therefore, upon adhering to MEB-Brazil, companies are in sync with the global efforts to establish themselves in a sustainable development fashion which has the biodiversity as one of its most important assets.

October 2012

Tatiana Donato Trevisan (Ethos Institute – executive secretary of MEB-Brazil);

Jaime Gesisky (RP for MEB-Brazil);

Rebeca Knijnik (Suzano Paper and Cellulose – member of MEB-Brazil)

The View of the Mata Atlântica Biosphere Reserve

Biodiversity is a concept that gained official character and relevance in the international scenario with the United Nations Conference on Environment and Development (UNCED or Rio'92), when nations signed a series of agreements, among which are the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity (CBD) and Agenda 21.

CBD has its own member countries and is governed by the Convention of the Parties (COP) which gathers every two years. In the COP10 meeting, held in Japan in 2010, in the city of Nagoya, in the province of Aichi, five objectives and 20 targets were defined, the so-called Aichi Targets, which are to be fulfilled by all countries until 2020; each country shall adapt the Targets to its own reality and establish its own targets. What is expected is the achievement of data for comparison and evaluation of the improvement regarding the application of the Convention on Biodiversity for the whole planet.

The Man and the Biosphere Programme (MaB) was created in 1971 by UNESCO (The United Nations Educational, Scientific and Cultural Organization) in order to understand the repercussions of human actions on the most representative ecosystems of the planet, in order to promote the knowledge, the practice and the human values to implement good relationships between the people and the environment. In Brazil, the MaB Programme is coordinated by the Brazilian Committee for the MaB Programme (COBRAMAB), under the Ministry of the Environment.

The Biosphere Reserves are areas recognized by UNESCO's MaB Programme as having global importance for the protection of the biodiversity and the promotion of scientific and traditional knowledge and the sustainable development. Brazil has seven biosphere reserves, most of them recognized as biomes and regulated by the law of the National System of Units of Conservation – "SNUC".

The Mata Atlântica Biosphere Reserve – "RBMA" works as an autonomous unit on the national level, connected to the UNESCO's MaB Programme. Because it is recognized as a biome and encompasses 17 states, the Mata Atlântica Biosphere Reserve constitutes a net of decentralized management composed by non-partisan groups which integrate the several instances of the government (Federal,



State and Municipal) with entities from the civil society (NGO's, the scientific community, associations of inhabitants of the Reserve and the business sector). The net of the Mata Atlântica Biosphere Reserve is formed by a National Council, a Bureau, an Executive Secretary, State Committees and four Regional Collegiates (Northeastern, Southeastern, Southern and Ocean). Institutions recognized by the National Council are also part of the Net, for example, the Advanced Posts of the Mata Atlântica Biosphere Reserve and strategic partners such as governmental and private institutions as well as universities and NGO's. The Mata Atlântica Biosphere Reserve net also counts on the Institute Friends of the Mata Atlântica Biosphere Reserve (in Portuguese - IA-RBMA), an Organization of the Civil Society of Public Interest (in Portuguese - OSCIP), which has as a specific objective to support and facilitate the execution of projects and the obtainment of resources for the activities of the Reserve.

The Mata Atlântica Biosphere Reserve has developed lines of action for the development of its programs and projects, for example: Sustainable Development and Conservation, Management and Institutional Strengthening, Public Policies and Institutional Relations and International Exchange and Cooperation, in which technical, scientific, participative management and cooperation programs are developed such as Sustainable Tourism, Mata Atlântica Market, Protected Areas Mosaic and the Mata Atlântica Yearbook, which has as one of its main projects the Monitoring of Achievement of the Aichi Targets – CBD 2020 in the Mata Atlântica Biome.

The “Mata Atlântica Yearbook” is a permanent activity of the Mata Atlântica Biosphere Reserve, created in 1999 with the objective of consolidating, updating and making available information about the Mata Atlântica Biome in a systematic and periodic fashion, in order to allow for comparative analyses (annual and multianual) about the advancements and challenges in the conservation, traditional and scientific knowledge and the sustainable development of Mata Atlântica, subsidizing projects and public policies.

The Yearbook is developed by means of a partnership with several academic, governmental and non-governmental institutions, generating publications, reports and information available in a specific hot site of Mata Atlântica Biosphere Re-

serve, at www.rbma.org.br.

After COP 10 (“Conference of the Parties” of the Convention on Biological Diversity), the “Mata Atlântica Yearbook Program” of the Mata Atlântica Biosphere Reserve defined the promotion, diffusion and annual monitoring of the achievement of the Aichi Objectives and Targets (CBD) for 2020 as a priority.

The objective of the project is to follow up and evaluate, in an integrated manner with the national policy, which is coordinated by the Ministry of the Environment, the achievement of the Aichi Targets from a biome perspective. More than this, the Project intends to contribute for the creation of mechanisms and to foment national and subnational actions which help fulfill and implement the Aichi Objectives and Targets in the Mata Atlântica Domain and within their adjacent marine regions.

The Mata Atlântica Yearbook: Monitoring the Aichi Targets – CBD 2020 in the Mata Atlântica Biome also aims at contributing to articulate and support the construction of strategies and action plans for the fulfillment of the Objectives and Targets of the CBD in subnational clutters just as the State of São Paulo has done in an innovative manner. In order to achieve the implementation of the Aichi Targets, the State adopted as a strategy the implementation of an Action Plan with specific targets and actions, including the creation of the São Paulo Committee on Biodiversity, with the participation of several Secretaries of State and coordinated by the Secretary of the Environment – SMA. Similar initiatives and processes have been implemented and started by other states and municipalities located in the area of Mata Atlântica, always with the support of Mata Atlântica Biosphere Reserve. The Mata Atlântica Yearbook makes available, by means of the hot site of the Program, the on-line copy of the document with all the quantitative and qualitative data, the indicators and the strategies regarding the process of achievement, year on year, of the Aichi Objectives and Targets – CBD in Mata Atlântica. The hot site of the Mata Atlântica Yearbook is the most important means to register data collected and to validate information through the Net of the Mata Atlântica Biosphere Reserve, its collaborators and partners, spreading and fomenting advancements in the commitments made by Brazil in the Nagoya Conference.

In order to assure capillarity and transparency, Mata Atlântica Biosphere Reserve



has defined, by means of the Yearbook Programme, an articulation strategy to increase the efficiency of the communication and knowledge management processes as well as the relevance of themes related to the Mata Atlântica on the web.

In this sense, 43 focal points from the Biosphere Reserve of Mata Atlântica have been selected and capacitated in virtual workshops about the CBD theme and the Aichi Targets for 2020 as well as about the methodological strategy for the monitoring of such targets between 2011 and 2020 in the Mata Atlântica Biome. Therefore, it will be possible to collect information in a decentralized and participative fashion, and together with the work of the thematic consultants, it will be possible to monitor the achievement of the Aichi Targets in the Mata Atlântica Domain and to amplify the conservation actions and the sustainable use of natural resources. The Project will continually seek strategic partners in the business sector, the governmental (National and Subnational) sector and in the third sector as it will continually seek permanent integration with the Brazilian Policy and the Brazilian Strategic Plan for the achievement of the Aichi Targets. This year, during the Rio+20, the first volume of the series MATA ATLÂNTICA YEARBOOK – 2012 – “Panorama of the Aichi-CBD 2020 Targets in Mata Atlântica – Advancements, Opportunities and Challenges”, which has as its main focus points the analysis of the strategic objectives of the Aichi Targets on the current picture, the tendencies and the challenges for the achievement of the targets in the Brazilian Mata Atlântica.

With the expected definition of the “national targets on biodiversity” this year, as of 2013 the “Mata Atlântica Yearbook” will also include the evaluation, based on standardized indicators on national level; whenever possible, it will also include the monitoring of such targets in the same way in each of the 17 states of Mata Atlântica. This way, the generation and availability of the information produced in a decentralized and participative fashion should allow for the permanent monitoring of the targets and should stimulate the effective conservation and the sustainable use of Mata Atlântica.

This collective construction has only been possible in this first moment thanks to the collaboration of members and partners of the Mata Atlântica Biosphere Reserve, the fundamental sponsorship of VALE; the support of AVINA Founda-

tion and of the Project “Protection of the Mata Atlântica II”, which has the technical support of GIZ (“Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH” or “German Organization/Society for International Cooperation”) and financial support via KfW [N.T. Formerly KfW Bankengruppe (banking group), is a German government-owned development bank, based in Frankfurt], by means of the “Federal Ministry for the Environment, Nature Conservation and Nuclear Safety – BMU [N.T. From German: Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit], besides the important support of the Secretary of the Environment of the State of São Paulo.

October 2012

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The View of the Academia

The uncertainties inherent to the scientific process limit the decision making process related to the conservation, control, utilization and monitoring of biodiversity on three levels: the conceptual basis, the technological/methodological development and the institutional structure. The first refers to the scientific basis that helps in the definition of WHAT must be done; the second refers to HOW it will be done; the third refers to WHOM can do it and WHEN it can be done. In the academia, the amplification of the conceptual basis is frequently connected to the “basic science”, while the technological development is commonly connected to the “applied science”. In this context, the ancient debate between “basic science” and “applied science” can be limiting when one seeks the betterment of the decision making process related to the conservation, control, utilization and monitoring of biodiversity, therefore demanding integrated efforts for its scientific progress. Even though it may be more connected to the management than to the science, the institutional structure, because it also limits such decision making process related to the biodiversity, has been dealt with from a scientific perspective as a result of the bigger contact between so-called biological sciences, the exact sciences and the humanities, in an interdisciplinary approach.



In spite of the immense recent scientific progress, there are still several gaps in the conceptual basis related to the human perspective of biodiversity, expressed by the Convention on Biological Diversity. The biggest part of the scientific efforts for the comprehension of the standards of distribution and abundance of living beings still does not incorporate the evolutionary and ecological processes that determine such standards, in general overestimating the role of spatial heterogeneity (i.e., momentary) to the detriment of spatial-temporal heterogeneity (i.e., historical). In this context, the role of the relationship between human history and natural history must be prioritized as a necessary amplification of our conceptual basis about biodiversity.

The considerable development of recent molecular techniques has allowed a consistent advancement in our capacity to detect biological variation on the intra- and inter-specific levels. However, our estimates of the real abundance (e.g. populational density) still present, in most cases, low precision and undetermined accuracy. Considering that the evolutionary and ecological processes are directly connected to the biomass or the size of a population, estimates of the real abundance are required for the comprehension of these processes. Methodological/technological developments that allow for the betterment of such estimates, therefore, must be prioritized.

Last but not least, the necessary institutional structure for the decision making process related to the conservation, control, utilization and monitoring of biodiversity, taking into consideration the several correlated human dimensions, must also be prioritized by science and not only by the managing organs or the public policy organs. The academia can contribute with such development by means of an inter- and trans-disciplinary approach, via the convergence and interaction among the so-called biological sciences, the exact sciences and the humanities. One real example of the academic participation in this process has been the Project BIOTA from FAPESP - Foundation for the Support to Research of the State of São Paulo (<http://www.biota.org.br/>).

The View of the Civil Society

Examples of a Participative Approach

Dialogues about Biological Diversity: building the Brazilian strategy for 2020

In order to better respond to the demands of the Convention on Biological Diversity – CBD, of the United Nations (UN), and to achieve the Aichi Targets, named after the COP10 held in Nagoya, province of Aichi, Japan, the “Dialogues about Biological Diversity: building the Brazilian strategy for 2020” gathered several sectors of the Brazilian Society in participative meetings – including the presence of representatives of the State Secretaries of the Environment, as was the case of the State of São Paulo. The “Dialogues” involved five segments of society to promote the debate of the internationally agreed targets, and suggest ways to implement solutions adequate to the national realities. The result consisted of a body of documents generated during the twelve events conducted in Brasilia, between April 2011 and May 2012, with participants from all regions of the country. The meetings were organized for the following target audiences: private sector, different levels of the government, academia, organized civil society, local communities and indigenous populations. The meetings had the participation of more than 400 representatives from approximately 280 institutions. There was also a virtual public consultation conducted to offer the opportunity for the participation of society in general. The “Dialogues” became an example of participative public consultation, maybe the biggest ever conducted by a country for the construction of national targets in favor of the protection of biodiversity. Based on the results generated, there are already continuity plans so that the ideas do not simply stay “on the paper”, but are actually incorporated by the different sectors, guaranteeing the implementation of the agreed targets.

The origin of the “Dialogues” is in the Convention on Biological Diversity – CBD, which is a space for the construction of international agreements within the UN for “the conservation of biological diversity, the sustainable use of its components and the fair and equitable distribution of the benefits derived from the utilization of the genetic resources” (Convention on Biological Diversity – CBD, 1992). After ten international meetings, CBD has accumulated several conquests, but faces challenges in respect to the implementation of what would be necessary to achieve its basic objective, that is, the protection of the biodiversity worldwide. The targets for biodiversity approved by the CBD 2002, which should have been



achieved until 2010 have not been completely fulfilled, and one of the reasons for such situation was the transversal character of the theme, which makes the appropriation of the concepts by the different sectors of society difficult.

By the time of that agreement, Brazil committed to 51 national targets in 2006, which should have been reached by 2010, some of which are even more restrictive than those elicited by CBD. However, only two were fully reached: (1) the publication of lists and catalogues of the Brazilian species, and (2) the reduction of 25% in the number of points of heat in all biomes. Other four fulfilled 75% of the proposed target: (1) conservation of 30% of the Amazon biome and 10% of the other biomes; (2) more investments in studies and research for the sustainable use of the biodiversity; (3) increase in the number of patents generated from components of the biodiversity, and (4) reduction of 75% in the deforestation rate of the Amazon forest (Brazil, 2010). Among those, the Brazilian leadership in the creation of protected terrestrial areas should be emphasized, representing 74% of the total area created worldwide between 2003 and 2009 (Jenkins & Joppa, 2009).

Even with such advancements, Brazil is still behind in terms of what is necessary to achieve effective protection of the environment. With its enormous natural richness, the country still has the responsibility to protect its social-environmental heritage and find ways to achieve effective results.

By understanding the urgency to change the strategies adopted until that point, mainly those that aim at improving the understanding of the importance of the biodiversity by the different social segments, the Brazilian Ministry of the Environment (MMA), together with International Union for the Conservation of Nature (IUCN), the WWF-Brazil and the Institute for Ecologic Research (IPE), in cooperation with nineteen other institutions of all sectors of Brazilian society promoted the “Dialogues about Biological Diversity: building the Brazilian strategy for 2020”. The objective was to stimulate an ample discussion about the 20 targets of CBD’s Strategic Plan for the period 2011-2020, in order to favor a participative process and a collective construction which could bring results compatible with the core of the desired task.

Local Communities and Indigenous Populations

Each sector had an extended committee composed of a varied number of organizations to help prepare the list of participants and organize the details of the meetings. The following institutions contributed with the group of local communities and indigenous populations: the Inter-Tribal Committee; the Indigenous Institute for Intellectual Property (Inbrapi); the Amazon Work Group – “GTA”; the “Via Campesina” [N.T. <http://viacampesina.org/en/index.php/organisation-mainmenu-44> on August 25, 2013 stated that “La Via Campesina is the international movement which brings together millions of peasants, small and medium-size farmers, landless people, women farmers, indigenous people, migrants and agricultural workers from around the world”] and the “Articulação Pacari” [N.T. <http://www.pacari.org.br/quem-somos/> on August 25, 2013 stated that “The Articulação Pacari is a social-environmental net formed by community organizations that practice traditional medicine by means of the sustainable use of the natural resources of the Savanna Biome”]. The purpose has always been to contemplate the demands and improve the generated documents with the knowledge brought in by these social actors. This specific group owes its importance to the fact that it has been the one in closest contact with the national biodiversity and historically has protected it the most.

The suggestions elaborated integrate those contemplated by the other groups, which were already included in the original document and those that aim at decreasing the loss of biodiversity by controlling monocultures and the use of agrochemicals. Specifically regarding fishing and agriculture, the suggestions are to ban agrochemicals which are already banned in first world countries and to charge higher fees on transgenic seeds if they are not completely banned.

The suggestions include the creation of popular universities and technical courses, the legal recognition of the work of midwives and of the traditional knowledge in several areas, guaranteeing the intellectual property of the products of the biodiversity by the indigenous populations and local communities. This includes the ample array of phytotherapy products that the traditional populations know well. In this aspect, the creation of a sui generis Legal Milestone was proposed in order to recognize that the Local Communities are the proprietors of their heritage, cultural identity, knowledge systems, traditional cultural expressions, and innovations and practices, therein included the oral traditions, genetic and human resources, seeds, medicaments, knowledge of the properties



of the fauna and the flora, literature, drawings, graphic works, symbols, body paintings, traditional sports and games and visual and interpretation arts - all in compliance with UNESCO's Convention for the Safeguarding of the Intangible Cultural Heritage and articles 8j, 10c and 15 of CBD.

All such suggestions, and many more, shall be supported by several means, including financial ones.

The "Dialogues" followed a public participative line as a way to bring to the discussion the different social segments to discuss the importance of the conservation of biodiversity. Chapter 28 of Agenda 21 highlights that most problems and solutions depend on more effective processes of education and social mobilization for the joint construction of strategies that lead to sustainable development. One of its principles states that the "best way to treat environmental issues is by means of the participation of all interested citizens" (Sato e Santos, 1997:28).

This was the premise used by the "Dialogues"; without the comprehension of society about the importance of the conservation of the natural heritage, the probability that what is still left to be protected will continue to be lost is high. Considering that most of the targets agreed upon, on both the national and the international level, to protect the biodiversity have not been reached, Brazil has innovated in this approach and intends to continue the process so that it may celebrate more concrete and cheerful results in 2020.

The authors thank the Ministry of the Environment of Brazil, the Department for Environment, Food and Rural Affairs (Defra-UK) and the National Project of Private-Public Integrated Actions for Biodiversity ("Probio II") for their support and all other participants of the events and of the public consultation, who enriched the information generated and helped give direction to what is important to implement from now on.

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Action Plan of the State of São Paulo

The Action Plan of the State of São Paulo 2020 for the implementation of the Convention on Biological Diversity / CBD, specially the Aichi Targets, corresponds to a strategy that gathers partners, actions, projects and products for the conservation and sustainable use of the biodiversity in the State of São Paulo.

This plan started to be elaborated in February 2011 and subsidized the creation of the São Paulo Committee on Biodiversity by the Governor of the State by means of Decree number 57.402 dated October 6, 2011.

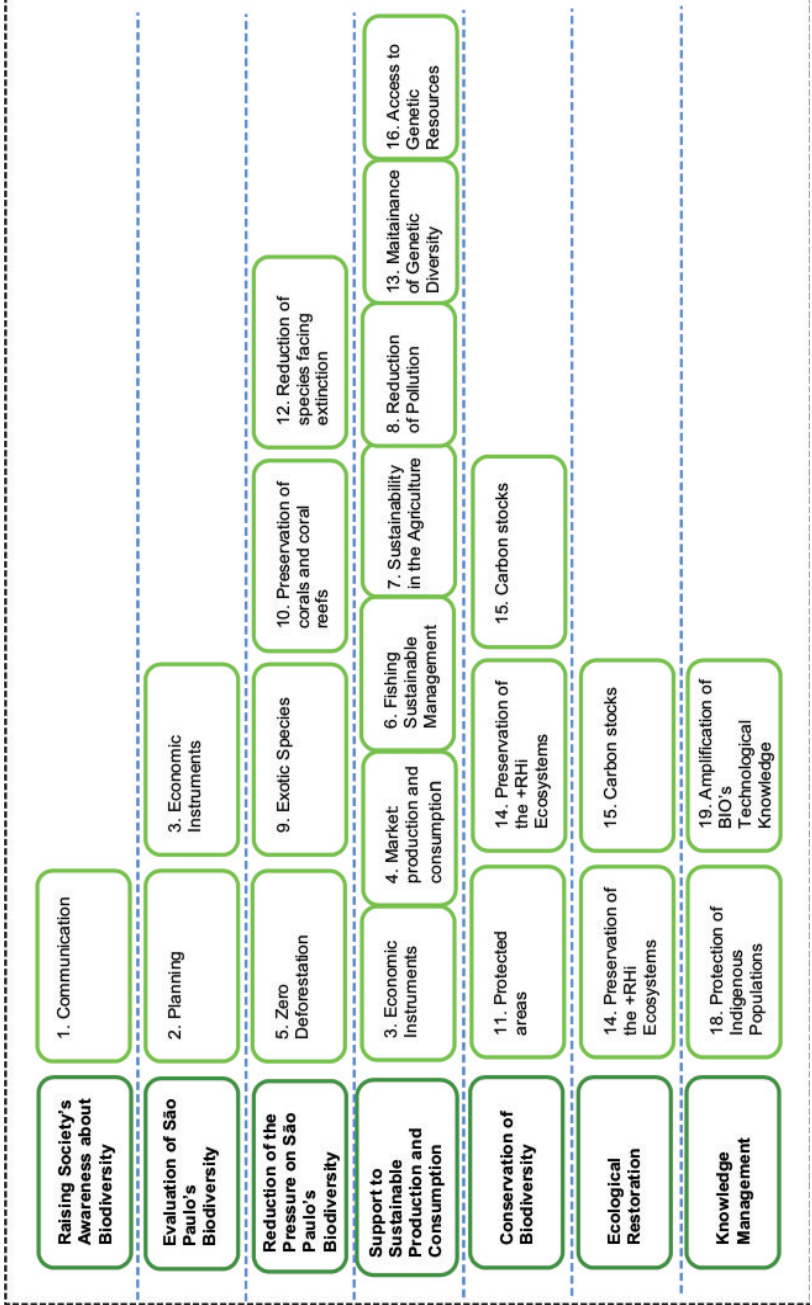
The plan started to be idealized in the Secretary of the Environment, the current Coordinator and Executive Secretary of the São Paulo Committee on Biodiversity (CPB), and its development started by explaining to the internal collaborators of SMA what CBD and the Aichi Targets are.

Having established this minimal level, especially regarding the Aichi Targets, it was possible to identify the body of actions currently being carried out by the institutions connected to the State Secretary of the Environment – responsible for this theme – which contribute to the achievement of such targets.

After this systematization, the necessary actions to fully assist this strategic plan from CBD in the State of São Paulo were identified. At the level of the São Paulo Committee on Biodiversity, four general meetings with the seventeen members and guests were conducted in the beginning of 2012, besides other meetings and specific technical conversations with some sectors involved in this process; on such occasions, it was possible to present the Action Plan of the State of São Paulo and collect outside contributions for the Secretary of the Environment, which have been incorporated to the present version.

Therefore, the five strategic objectives and the twenty targets of the international plan have been crossed with the actions already being carried out and foreseen to be carried out in the State of São Paulo. The summary is shown in the following image, in which the first column (dark green) groups the actions verified in the State of São Paulo which aim at fulfilling the actions foreseen in the other columns of the image (light green); the image corresponds to a summary of the twenty Aichi Targets, although Target number 20, regarding the necessary resources, is relocated in all the actions foreseen in the state.

São Paulo View of the Aichi Targets



In order to facilitate the management of the Plan, the several dozens of actions, projects and products identified and foreseen for the initial phase of the work have been grouped in seven actions which compose the São Paulo Action Plan.

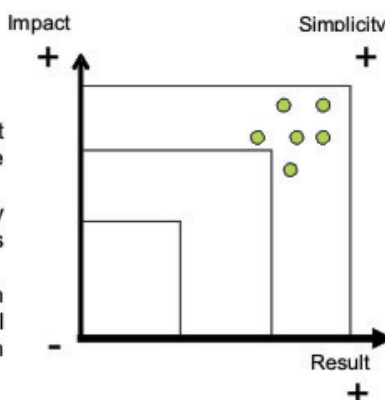
In order to do so, the following criteria regarding the actions, projects and products have been used; they have been applied in an integrated fashion as suggested in the picture below:

- Impact – actions, projects and products with great positive impact regarding the strategic objectives of the Aichi Targets were prioritized.
- Results - actions, projects and products that may generate measurable results between 2011 and 2020 were prioritized.
- Simplicity - actions, projects and products that can be easily executed, especially at low costs, with small teams and reduced complexity in terms of bureaucracy were prioritized.

Methodological Analysis

• Criteria for the Selection of Projects / Actions:

- Impact: actions/projects with great positive impact regarding the strategic objectives.
- Result: actions/projects that may generate measurable results between 2011 and 2020.
- Simplicity: actions/projects that can be easily executed (low costs, small teams and reduced complexity in terms of bureaucracy).





Therefore, the São Paulo Action Plan was built with seven actions, each one related to a project totaling twenty-nine products apt to fulfill the twenty Aichi Targets in the State of São Paulo

Structure of the Plan



The following actions integrate the São Paulo Action Plan:

- Raising Society's Awareness about Biodiversity
- Evaluation of São Paulo's Biodiversity
- Reduction of the Pressure on São Paulo's Biodiversity
- Support to Sustainable Production and Consumption
- Conservation of Biodiversity
- Ecological Restoration
- Knowledge Management
- Gestão do conhecimento.

The projects are structured departing from their own objectives as they make the actions viable and from the products that compose them. Each project is presented in this plan by means of a specific term of reference – created after a consultation to the parties involved in each theme and the respective coordinators. The reference terms are open to ongoing updating in light of the duration of the Strategic Plan and the contributions that the process has continually received. The twenty-nine products that compose the São Paulo Action Plan are presented under the seven projects that make up this plan.

I – Project: Communication plan for Biodiversity, with five products presented hereinafter.

II – Project: Instruments for the evaluation of São Paulo’s Biodiversity, with four products presented hereinafter.

III – Project: Strategy for the reduction of the pressure on São Paulo’s biodiversity, with four products presented hereinafter.

IV – Project: Program for Sustainable Production and Consumption, with three products presented hereinafter.

V – Project: Instruments for the Conservation of Biodiversity, with seven products presented hereinafter.

VI – Project: Program for Forest Reminiscent, with four products presented hereinafter.

VII – Project: Knowledge Management for São Paulo’s biodiversity, with two products presented hereinafter.



Involving the Participating Institutions

To optimize the contributions of the parties involved in each action, project and product of this plan, two ways have been identified for partners' actions:

- As the responsible institution.
- As the collaborating institution.

For each project and each product of this Action Plan, the groups of institutions consulted and involved were identified, with focal points in each indication and with supporting internal groups in each institution.

This plan has been elaborated by means of a participative process, firstly at the level of the Secretary of the Environment aiming at prompt application and amplification towards the other members of the São Paulo Committee on Biodiversity.

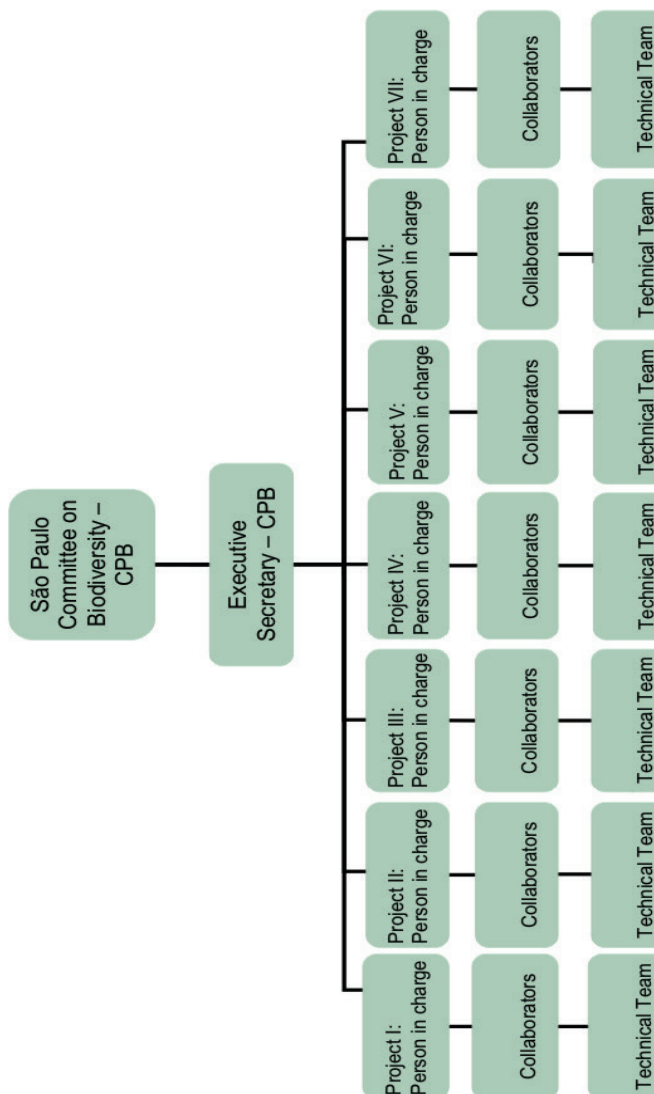
Hence, the appendix presents the partner institutions – Component SMA / Secretary of the Environment of the State of São Paulo in the format of a list subject to an ongoing process of updates. Such partners are responsible for the present projects and products of the Plan, always followed up by the Administration Coordination (CA) of SMA. The other members of the São Paulo Committee on Biodiversity have been invited to integrate the projects and products they are most aligned with.

The management process of the participating institutions, open to accommodate all the contributions foreseen by the São Paulo Committee on Biodiversity, follows a system whose structure can be summarized as having the Executive Secretary supporting the coordination of the São Paulo Committee on Biodiversity in the direct relationship with the members of the Committee as well as with the Project Coordinators (and their collaborators), and eventually the Product Coordinators (and their collaborators).

Therefore, the Project Coordinators (and their collaborators) are responsible for the direct relationship with the Product Coordinators who are responsible for the work with the collaborators of each product.

Management Structure of the São Paulo Action Plan

In order to guarantee the resources for the execution of the São Paulo Action Plan, with the objective to implement the Aichi Targets in the State, there has been an option for an integrated work in the budgetary planning in the Secretary of the Environment of the State of São Paulo, which can be amplified to all members of the São Paulo Committee on Biodiversity in their respective instances:





Long Term Budgetary Planning

In the government, the instrument used for the budgetary planning is the “PPA” – Multi-Annual Plan. The Plan current in place is the PPA 2012-2015, which already takes into consideration the needs to assist the Aichi Targets 2011-2020.

For the next period, PPA 2016-2019, it will be possible to increase the number of institutions that use these targets from CBD in their planning for the period – within the context of the members of CPB. It will also be possible to amplify the understanding about the necessary resources to the execution of the necessary actions to fulfill the Aichi Targets in the State.

The non-governmental partners, members and guests of the São Paulo Committee on Biodiversity, because of their work regarding the conservation of biodiversity, are also welcome to join efforts towards the fulfillment of this massive task before the Convention on Biological Diversity (CBD). This way, having CPB as a privileged space to do so, it will be possible to integrate in detail all the investments made in favor of biodiversity in the State of São Paulo.

Details of the budgetary planning year on year

In the governmental sphere, the details of the budget foreseen for each period of the PPA (four years) are specified in the annual plans. In the sphere of the Secretary of the Environment of the State, pursuant to the requirement by the Coordinator of the São Paulo Committee on Biodiversity, there has been a detailed follow-up of the planning of the actions foreseen for 2013 and 2014 regarding this Action Plan. As a result, two complementary approaches have been identified in treating this matter:

- Precise planning, in each institution, of the actions exclusively targeted for this Action Plan, in the current period.
- Global planning, in each institution, of the ordinary actions that fulfill this Action Plan, in the current period.

Therefore, different positive responses have been obtained by the institutions con-

nected to the Secretary of the Environment of the State. In some cases, the positive response superseded the necessary destination of resources for the next period, culminating in internal procedures that allow the preparation for the future detailing of this budgetary planning, integrating it to the Aichi Target.

In summary, at this point, the Secretary of the Environment of the State alone, in integrated actions with the Secretary for Public Safety of the State of São Paulo by means of the support to the actions of the Environmental Military Police, has made more than R\$24,000,000 (twenty-four million reais) available in resources in the body of the global planning presented above and in accordance with the Budget Bill 2013 aimed at the fulfillment of the Aichi Targets. Approximately 70% of this amount has been destined to environmental policing – part of Project III of the São Paulo Action Plan (Strategy for the Reduction of the Pressure on São Paulo's Biodiversity).

In 2014, still considering only the part of the Secretariat for the Environment, the projected value for this action plan in “cost reference value” exceeds R\$ 100.000.000,00 (one hundred million reais).

Presentation of the Reference terms per action and respective projects

Each project of the Action Plan has a specific and standardized reference term, created through a process conducted by its Coordinator. Therefore, the management of this plan is optimized by its Coordinator, with the support of the Executive Secretary.

Considering the detailing of each product, a better and bigger involvement of other partners – especially those who are members of the São Paulo Committee on Biodiversity – and with the development of the projects in this long term process, the reference terms should be continually improved. Such terms will be made permanently available, in an updated fashion, at the Biodiversity Portal of SMA, to support CPB. A summary of the reference terms initially suggested for each project is presented below, they shall serve as a basis for the future work of the work teams connected to this Action Plan.



Action I - Raising Society's Awareness about Biodiversity

Project: Communication Plan for Biodiversity

- **Product 1 :** Biodiversity Portal
- **Product 2:** Campaigns for Biodiversity
- **Product 3:** National and International Events for Biodiversity
- **Product 4:** Capacitation Cycles about Biodiversity
- **Product 5:** Publications of “SEAQUA” (State System of Management of Environmental Quality, Protection, Control and Development of the Environment and Adequate Use of Natural Resources)

Objective: to create a direct communication channel between the State government and society to consolidate a net of knowledge and information easily accessible. To raise the population's awareness about the importance of biodiversity and to motivate the realization of actions and projects to preserve the biodiversity, in order to live in harmony with it.

Justification: In order to fulfill target 1 (until 2020 the latest, people must be aware of the biodiversity values and of what they can do to preserve it and to use it in a sustainable manner) it is necessary to realize several actions regarding the communication of biodiversity. It is also an opportunity to create internal communication channels and to foment the exchange among the organs of the environmental system.

Indicator: number of people aware of biodiversity.

Action II - Evaluation of São Paulo's Biodiversity

Project: Instruments for the evaluation of São Paulo's Biodiversity

Product 1: TEEB (Methodology “The economics of ecosystems and biodiversity) – State of São Paulo;

Product 2: Panel of Indicators for Biodiversity;

Product 3: Economic Ecological Zonings;

Product 4: Monitoring for the implementation of “PEMC” (State Policy for Climate Change)

Objective: to monitor the implementation of the Aichi Targets to measure the achievement of the intermediary and final deadlines: 2015 and 2020, by means of indicators, planning instruments and quantitative, qualitative and economic analyses.

Justification: Aichi Targets 2 and 3 deal with the integration of biodiversity with public policies and planning instruments, and establish the valuation of biodiversity in economic, qualitative and quantitative terms, as a priority.

Indicator: number of governmental and civil society actions / projects related to the promotion of biodiversity, generating qualitative and quantitative increments of biodiversity by means of the evaluated instruments, between 2011 and 2020.

Action III - Reduction of the Pressure on São Paulo’s biodiversity

Project: Strategy for the Reduction of the Pressure on São Paulo’s Biodiversity.

Product 1: Project for Zero Deforestation;

Product 2: Project for Monitoring;

Product 3: Project to Fight Forest Fires;

Product 4: São Paulo Strategy about Invading Exotic Species.

Objective: to articulate the productive sectors to integrate them in the agenda for the conservation of biodiversity and improve the monitoring strategy so that the actions of command and control support the actions of foment and incentive.



Justification: Among the Aichi Targets, four subsidize this action: Target 5, which states that until 2020, the rate of loss of all natural habitats be reduced to less than half and that degradation and fragmentation be significantly reduced; Target 9, which states that until 2020 the main invading exotic species be controlled or eradicated; Target 10, which states that until 2015, anthropogenic pressures on coral reefs, including climate change, be minimized, and Target 12, which states that until 2020, the extinction of endangered species be halted, and the situation of those species undergoing deeper decline must be improved.

The PPA 2012-2015, in the Program of Conservation of Biodiversity, in action 2 “Foment to Sustainability in Agricultural and Industrial Farming of Livestock and Forest Activities” suggests that 50% of the farming areas of the state be managed / exploited in compliance with the protocols signed with the different sectors.

Indicator: Areas of Agricultural and Industrial Farming of Livestock and Forest Activities meeting sustainability criteria.

Action IV – Support to Sustainable Production and Consumption

Project: Program for Sustainable Production and Consumption.

Product 1: Project Green Economy;

Product 2: Sectorial Sustainability;

Product 3: Bio-prospection.

Objetivo: Objective: to foment the development of markets related to biodiversity inserting good practices of sustainability and creating new jobs. To increase, in a sustainable manner, the offer of products and services produced in the State of São Paulo for the market and society. To create mechanisms for the voluntary regulation of markets, in order to induce the market to make the transition into Green Economy. Consequently, this new way of production may bring benefits to the environmental health of the population as well as help the conservation of the natural asset of the state.

Justification: Among the Aichi Targets, six are directly related to the market: 3, 4, 6, 7, 8 and 13. The targets deal with the sustainable use of biodiversity for economic purposes, mainly those connected to the natural asset at risk and also fundamental to the maintenance of the ecosystems and to human survival, such as agriculture, aquaculture, fishing, natural assets for the production of cosmetics and medicaments. Besides increasing the useful life of our ecosystems, there is reduction of pollution and the utilization of economic instruments for this purpose.

Indicator: Green GDP, or equivalent.

Action V – Conservation of Biodiversity

Project: Instruments for the Conservation of Biodiversity

Product 1: System of Units of Conservation – “SEUC”;

Product 2: Creation of Legal Reserves (RL) and Areas of Permanent Protection (APP);

Product 3: Program for the Payment of Environmental Services;

Product 4: ex-situ Conservation of Biodiversity;

Product 5: Monitoring Biodiversity;

Product 6: Removal of Species from the Red Lists;

Product 7: Program about Traditional Populations.

Objective: Considering the Aichi Targets, specially Strategic Objective C - To improve the situation (status) of biodiversity, protecting ecosystems, species and genetic diversity; involving Target 11 entirely, that is, until 2020, at least 17% of the terrestrial areas and continental waters, and 10% of marine and coastal areas, especially areas of particular importance for biodiversity and eco-systemic services, will have been preserved by means of systems of protect areas – managed in an equitable and efficient manner, ecologically representative and satisfactorily integrated – and by other special measures of conservation, and integrated to more ample terrestrial



and marine landscapes; and partially involving Target 14, which says that until 2020, the ecosystems that supply essential services, including services related to water, and that contribute to health, feeding and well-being will have been restored and protected, taking into consideration the needs of women, indigenous populations and local communities, and those of the poor and vulnerable, and Target 15, which says that until 2020, the resilience of ecosystems and the contribution of biodiversity for carbon stocks will have been amplified by means of actions of conservation and restoration, including the restoration of at least 15% of degraded ecosystems, hence contributing to the mitigation of and the adaptation to climate change and fight desertification, Action V is suggested, that is, Conservation of Biodiversity to improve biodiversity quantitatively and qualitatively by means of protection systems, policies, incentives and monitoring. The creation of the São Paulo System of Units of Conservation – “SEUC” aims at adapting the groups and categories of the “SNUC” – National System of Units of Conservation – to the environmental, social and economic context of São Paulo. Besides the SEUC, Action V aims at the implementation of environmental policies by means of: incentives to the creation of legal reserves and the protection to areas of permanent conservation; the consolidation of the Program of Payment for Environmental Services; the establishment of actions to remove species from red lists and for the protection and increase of the collections ex-situ of biodiversity. In order to assess the effectiveness of the actions, a monitoring system will be established.

Justification: Among the Aichi Targets, three subsidize this action, and the respective Project: in a structural manner, Target 11 entirely, which establishes objectively the territorial dimension to be protected – in qualitatively processes defined by Target 11 itself and parts of Target 14 and 15. PPA 2012-2016 foresees several very precise instruments for this Action V – Conservation of Biodiversity.

Indicator: vegetated areas effectively preserved (using ha), preferably as integral protection, measured every three years, in relation to the percentage of eh biome, ecosystem or physiognomy that they represent (% of the existing total in 2011 and % of the domain). In a complementary manner, suggested examples are: area (in ha) of implemented germplasm bank; number of new species with progenic tests conducted; and area (in ha) of installed orchards and clonal banks for selected species.

Action VI – Ecological Restoration

Project: Program for Forest Reminiscent

Product 1: Ecological Restoration – Legal Reserve and Ancillary Forest;

Product 2: Implementation of “SARA” – Support System to Restoration of Areas + TCRA (“Term of Commitment for Environmental Recuperation);

Product 3: UC (unit of conservation) for Sustainable Use for the Creation of RL (legal reserve);

Product 4: Program of Seeds and Saplings.

Objective: to foment ecological restoration in ancillary areas and other relevant areas for the conservation of biodiversity and the natural resources, contributing to the mitigation of and the adaptation to climate change.

Justification: Among the Aichi Targets, two subsidize this action: Target 14, which says that until 2020, the ecosystems that supply essential services will have been restored, and Target 15, which says that until 2020, 15% of degraded ecosystems will have been recovered, contributing to the mitigation of and the adaptation to climate change.

PPA 2012-2015, in the Program for Conservation of Biodiversity, in action 2 “ecological restoration – legal reserve and ancillary forest”, sets as a target the restoration of 300,000 ha until 2015, at 75,000 ha per year.

Indicator: area restored/year.

Action VII – Knowledge management

Project: Knowledge management for São Paulo’s Biodiversity.

Product 1: State Program of Research on Biodiversity;

Product 2: Technological Innovation.



Objective: to implement Aichi Targets 18 and 19, guaranteeing ample dissemination and amplification of knowledge about São Paulo's biodiversity, ensuring complete fulfillment of the rights of the populations regarding their traditional knowledge.

Justification: among the Aichi Targets, two subsidize this action and its project in an integral manner. In a structural manner, Targets 18 and 19 establish objectively the importance of knowledge for the conservation of biodiversity and its sustainable use, whether this knowledge is scientific, technological, empiric or tradition. PPA 2012-2015 foresees several very precise investments for Action VII.

Indicator: Adaptation of the indicators (based on the traditional ones used in C, T and I) that can demonstrate perceptible advancements until 2020 for the main beneficiaries and users from São Paulo of the scientific and technological production for the conservation and sustainable use of biodiversity – for example the scientific production associated to the theme).

Construction of the Panel of Indicators for the Implementation of the Aichi Targets in the State of São Paulo

The theme of biological diversity has historically integrated the publications of SMA that deal with the environmental quality of the State of São Paulo. The Report on Environmental Quality (RQA), which is an instrument foreseen in both the national and the state policy on the environment and is published every two years, aims at assisting the process of raising public awareness about the environmental issue, presenting a compilation of data and information of varied caliber.

Among the chapters that compose the RQA, the one on biodiversity deserves to be highlighted, since it presents the state situation by means of different aspects such as native vegetal coverage, areas of ancillary forest that compose the database kept by SMA, the authorizations for the suppression of vegetation issued in connection to the

process of environmental licensing, the number of species threatened by extinction as well as the quantity, location and quality of management of the Units of Conservation (UC) managed by the Foundation for Forest Conservation and Production of the State of São Paulo (Forest Foundation). In the future there is an intention to analyze the quality of the management of the UC that compose the structure of the other units of SMA – The Forest Institute, the Botany Institute and the Private Reserves of Natural Heritage (RPPN) recognized by the Forest Foundation as well as the calculation of the extension of the Federal and Municipal UC and of other protected areas.

Another publication prepared by SMA in 2009, 2010 and 2011 and that as of 2013 will be incorporated as a chapter of RQA is the Environmental Quality Panel (PQA). Unlike the RQA, whose content is presented in more detail, the PQA is a body of 21 basic environmental indicators, adding tendencies, expectations and targets for each indicator to the analyzes of the current situation. Regarding the biological diversity, four indicators compose this panel, namely: proportion of remaining area with native vegetation, proportion of total area of ancillary forest already registered in relation to the total available for recuperation, proportion of fauna species threatened by extinction in relation to the total species known in the State and management rate of the units of conservation of the state.





For the construction of the Panel of Indicators for Biodiversity, the knowledge and the information accumulated by SMA in its 27 years of existence and which can be found in its publications will be allied with some indicators of more specificity gathered in groups correlated to the strategic objectives defined by COP10 and COP11 of the Convention on Biological Diversity (CBD). Having in mind the seven projects established in the São Paulo Action Plan, the indicators to follow up on such projects and on the evolution of their respective products will be added to this panel.

The Panel of Indicators for Biodiversity in the State of São Paulo, in the context of this Action Plan, is being built and will be continually updated in order to promptly allow society to check and follow up on São Paulo's progress regarding the Aichi Targets. This Panel is integrated to "PainelBio", which is coordinated by the Ministry of the Environment, regarding the National Plan for the Aichi Targets. In order to do so, it is fundamental to engage the members of the São Paulo Committee on Biodiversity, whether they are from the government, the private sector, the academia or the civil society, in its constant revision and feedback.

Final Considerations

This Action Plan built by the several sectors and organisms that compose the State Secretary of the Environment, has received the collaboration of many people. In fact, it corresponds to a new effort for the introjection of the necessary protection of biodiversity in all the areas where this Secretary acts. In some of such areas, the plan has met immediate resonance and is in full operation. In others, it is still a novelty and demands conversations and adaptations. It is in these latter sectors that the Action Plan meets its biggest challenges and may really produce the new, as correctly require the Aichi Targets.

The next challenge, and the broader one, is to get other sectors of the government and of society to discuss the Aichi Targets as well as what is proposed herein, for the necessary introjection of such objectives in all segments of society. After this discussion, we hope to formulate the Action Plan for the Aichi Targets for the whole State of São Paulo.

Besides that, it is absolutely desirable that this work be developed in close sync and in perfect collaboration with similar initiatives in other States and especially with the works in this same sense that are being conducted on the federal level. The task is complex, but the results will undoubtedly be of far reach, in special because we are dealing with the most bio-diverse country on the planet. Let's get down to work!



References and websites suggested

BIODIVERSIDADE no Estado de São Paulo: Check lists. Biota Neotropica. São Paulo, v. 11, n. 1a, 2011. Número Especial. Disponível em: <<http://www.biotaneotropica.org.br/v11n1a/pt/>>. Acesso em: 4 set 2012.

BRASIL. 4º Relatório Nacional para a Convenção sobre Diversidade Biológica. Série Áreas Protegidas do Brasil n. 7. Brasília, DF: Secretaria de Biodiversidade e Florestas, Ministério do Meio Ambiente. 2010.

CDB. Panorama da Biodiversidade Global 3. Montreal, Canadá: Secretariado da CDB. 2010.

CONSERVAÇÃO INTERNACIONAL/Brasil, 2005. Megadiversidade: Desafios e oportunidades para a conservação da biodiversidade no Brasil. Belo Horizonte: v. 1, n.1, jul 2005. Edição Especial.

JENKINS, C. N.; JOPPA, L. Expansion of the global protected terrestrial area system. *Biological Conservation*, v. 142, issue 10, p. 2166-2174. 2009.

RODRIGUES, R.R; BONONI, V.L.R. (orgs) 2008. Diretrizes para conservação e restauração da biodiversidade no Estado de São Paulo. São Paulo: Instituto de Botânica. 248p.

SÃO PAULO (Estado) 2007. Secretaria do Meio Ambiente. Nos caminhos da biodiversidade paulista. São Paulo: SMA 2007. 268p.

SÃO PAULO (Estado) 2011. Secretaria do Meio Ambiente. Biodiversidade no Estado de São Paulo. 2ª edição. São Paulo: SMA 2011. 48p.

SÃO PAULO (Estado) 2011. Secretaria do Meio Ambiente/ Coordenadoria de Planejamento Ambiental. Meio Ambiente Paulista: Relatório da Qualidade Ambiental 2011. São Paulo: SMA/CPLA, 2011. 256p.

SATO, Michèle; SANTOS, José Eduardo dos. Sinopsis de la agenda 21. Mexico: Centro de Educación y Capacitación para el Desarrollo Sustentable e Programa de las Naciones Unidas para el Desarrollo - PNUD. 1997.

UICN, WWF-BRASIL e IPÊ. Biodiversidade Brasileira: análise de situação e oportunidades, documento-base. Brasília, DF: UICN, WWF-BRASIL e IPÊ, 2011.

WEIGAND JÚNIOR, Ronaldo; SILVA, Danielle Calandino da; SILVA, Daniela de Oliveira. Metas de Aichi: Situação atual no Brasil. Brasília, DF: UICN, WWF-Brasil e IPÊ, 2011.

www.cbd.int

www.conservation.org.br/publicacoes

www.conservation.org.br/publicacoes/files/HotspotsRevisitados.pdf



Appendix– Summarized version

Distribution of SMA Institutions in Projects and Products of the Action Plan 2012 of São Paulo.

SÃO PAULO COMMITTEE ON BIODIVERSITY - (CPB)

Communication Support (ACOM/SMA)

International Support (AINT / SMA)

Management Support (AG / SMA)

Juridical Support (CJ-SMA)

Coordination of Biodiversity and Natural Resources (CBRN / SMA)

Coordination of Environmental Planning (CPLA / SMA)

Coordination of Environmental Education (CEA / SMA)

Coordination of Environmental Monitoring (CFA / SMA)

Coordination of Urban Parks (CPU / SMA)

Administration Coordination (CA / SMA)

Forest Institute (IF / SMA)

Botany Institute (IBt / SMA)

Geology Institute (IG / SMA)

Foundation for Forest Conservation and Production of the State of São Paulo (FF / SMA).

Environmental Sanitation Technology Company (CETESB / SMA)

Foundation of the Zoo Park of São Paulo (FPZSP / SMA)

State Council of the Environment (CONSEMA)

SMA Representative / Managing Committee of the State Policy for Climate Change (PEMC)

Secretary for Public Safety of the State of São Paulo / Environmental Military Police (SSP)

Mata Atlântica Biosphere Reserve (RBMA)

I - Project: Communication Plan for Biodiversity

Responsible Institution: ACOM

Product 1: Biodiversity Portal

Responsible Institution: ACOM

Collaborating Institutions: CBRN, CPLA, CEA, IF, FF, IBt, CETESB, FPZSP, RBMA, CFA, CPU

Product 2: Campaigns for Biodiversity

Responsible Institution: ACOM

Collaborating Institutions: CBRN, CEA, IF, FF, IBt, CETESB, FPZSP, RBMA, CFA, CPU

Product 3: National and International Events for Biodiversity

Responsible Institution: ACOM / AINT

Collaborating Institutions: APE, CBRN, CEA, IF, FF, IBt, CETESB, FPZSP, RBMA, CPU

Product 4: Capacitation Cycles about Biodiversity

Responsible Institution: CEA

Collaborating Institutions: CBRN, CEA, IF, FF, IBt, CETESB, FPZSP, RBMA, CFA, IPE

Product 5: Publications of SEAQUA

Responsible Institution: ACOM

Collaborating Institutions: IF, CBRN, CPLA, CEA, FF, IBt, CETESB, FPZSP, RBMA, CPU, CFA.

II - Project: Instruments for the Evaluation of São Paulo's Biodiversity

Responsible Institution: CPLA

Collaborating Institution: CBRN

**Product 1:** “TEEB” São Paulo;

Responsible Institution: CBRN

Collaborating Institution: CEA, IF, FF, IBt, CETESB, FPZSP, RBMA, IPE

Product 2: Panel of Indicators for Biodiversity;

Responsible Institution: CPLA

Collaborating Institution: CBRN, CEA, IF, FF, IBt, CETESB, FPZSP, RBMA, CFA, IPE

Product 3: Economic Ecological Zonings;

Responsible Institution: CPLA

Collaborating Institution: IF, IG, CETESB, RBMA, CBRN, FF, CFA, IBt

Product 4: Monitoring for the Implementation of “PEMC”

Responsible Institution: Representative / PEMC’s Managing Committee

Collaborating Institution: CBRN, IG, CPLA, CETESB, IF, FF, IBt, , FPZSP, RBMA, CFA

III - Project: Strategy for the Reduction of the Pressure on São Paulo’s biodiversity.

Responsible Institution: CFA

Collaborating Institutions: CBRN, CETESB, SSP

Product 1: Project for Zero Deforestation;

Responsible Institution: CETESB

Collaborating Institutions: SSP, CBRN, IF, IBt, CFA

Product 2: Project for Monitoring;

Responsible Institution: CFA

Collaborating Institutions: SSP, CETESB, CBRN, FF,CPU, IF, IPE

Product 3: Project to Fight Forest Fires;

Responsible Institution: CBRN

Collaborating Institutions: SSP, CETESB, FF, IF, IBt, CEA, CFA, CPU

Product 4: São Paulo Strategy on Invading Exotic Species

Responsible Institution: CBRN

Collaborating Institutions: FF, FPZSP, IF, IBt, CETESB, CFA

IV – Project: Program for Sustainable Production and Consumption

Responsible Institution: CPLA

Collaborating Institutions: CBRN, IF, FF, IBt, RBMA, CEA

Product 1: Project Green Economy;

Responsible Institution: CPLA

Collaborating Institutions: CBRN, CETESB, IF

Product 2: Sectorial Sustainability;

Responsible Institution: CETESB

Collaborating Institutions: CBRN, CPLA, IF, FF, IBt, RBMA, CFA

Product 3: Bio-prospection.

Responsible Institution: IBt

Collaborating Institutions: CBRN, IF, RBMA, FF, FPZSP, CFA

V - Project: Instruments for the Conservation of Biodiversity;

Responsible Institution: FF

Collaborating Institutions: IF, IBt, CPLA, CETESB, CBRN, FPZSP

Product 1: Product 1: System of Units of Conservation – “SEUC”

Responsible Institution: FF

Collaborating Institutions: IF, IBt, IG, CPLA, CBRN, SSP, CPU, CFA, IPE

Product 2: Creation of Legal Reserves (RL) and Areas of Permanent Protection (APP)



Responsible Institution: CBRN

Collaborating Institutions: IF, CETESB, IG, SSP, CFA, IPE

Product 3: Program for the Payment of Environmental Services;

Responsible Institution: CBRN

Collaborating Institutions: IF, CEA, RBMA, FF, CPLA, CETESB, IPE

Product 4: ex-situ Conservation of Biodiversity;

Responsible Institution: IF

Collaborating Institutions: FF, IBt and FPZSP

Product 5: Monitoring Biodiversity;

Responsible Institution: IF

Collaborating Institutions: CPLA, CBRN, IG, IBt, CETESB, SSP, FF, RBMA, CFA, IPE

Product 6: Removal of Species from the Red Lists;

Responsible Institution: CBRN

Collaborating Institutions: FPZSP, IF, FF, SSP, IBt, CFA, IPE

Product 7: Program about Traditional Populations.

Responsible Institution: FF

Collaborating Institutions: IBt, IF, CBRN, CFA

VI - Project: Program for Forest Reminiscent

Responsible Institution: CBRN

Collaborating Institutions: CETESB, IF, IBt

Product 1: Ecological Restoration – Legal Reserve and Ancillary Forest;

Responsible Institution: CBRN

Collaborating Institutions: CETESB, FF, IF, SSP, IBt, CFA, IPE

Product 2: Implementation of “SARA” – Support System to Restoration of Areas + TCRA

Responsible Institution: CBRN

Collaborating Institutions: CETESB, SSP, IF, CFA, IPE

Product 3: UC (unit of conservation) of Sustainable Use for the creation of RL

Responsible Institution: CBRN

Collaborating Institutions: FF, IF, CJ, CONSEMA, CETESB, IBt, CFA, IPE

Product 4: Program of Seeds and Saplings.

Responsible Institution: IF

Collaborating Institutions: FF, IBt, CBRN, CEA, CFA, IPE

VII - Project: Knowledge Management for São Paulo's Biodiversity.

Responsible Institution: IBt

Collaborating Institutions: IF, FF, IG, FPZSP, CBRN, ACOM, CEA, RBMA

Product 1: State Program of Research on Biodiversity;

Responsible Institution: IBt

Collaborating Institutions: IF, RBMA, IG, FPZSP, CBRN

Product 2: Technological Innovation.

Responsible Institution: IBt

