ENVIRONMENTAL MANAGEMENT-
SUCCESS CASES OF BRAZILIAN STATE CAPITALS

Konrad Adenauer Stiftung

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PRESENTATION

Over the next years the world will witness great events and achievements which will take place in Rio de Janeiro. This opportunity must be seized to construct the future, and that involves sustainability. The history of Rio is intimately connected with the environment. The city consolidated international awareness of environmental protection, when the Rio 1992 gathered major political leaders of the world to discuss sustainable development. The recent climatic phenomena the planet is undergoing reinforce the importance of preserving nature as a condition of our evolution and summon us to rethink the sustainable model to be adopted. This year, with the Rio+20, Rio de Janeiro has once again the opportunity to invite the world to debate environment-related issues of great importance for the future direction of our world.

With this extremely favorable scenario for the city, the Rio de Janeiro City Hall, through its Department of Environment, promoted in May the MEETING OF SECRETARIES OF ENVIRONMENT OF BRAZILIAN CAPITALS, in order to exchange successful experiences and generate discussions which enable us to consolidate good governance practices in the environmental areas of the Brazilian capitals.

The Meeting, which was fully supported and encouraged by the mayor of Rio de Janeiro Eduardo Paes, counted on the massive presence of 22 secretaries of environment of the 27 Brazilian capitals. For two days, they debated propositions and solutions for the main environmental problems faced by our big cities. Several cases of successful actions in different areas were presented, such as reforestation, waste management, urban mobility, among others. It resulted on the elaboration by the secretaries of the LETTER RIO FOR SUSTAINABILITY, which will be presented during the C-40 meeting, the main forum for debates on cities within the Rio+20.

We hope that initiatives like these are replicated so that the Brazilian society is provoked towards awareness and mobilization in order to form a critical mass capable of achieving viable and agile solutions to conciliate growth with the preservation of our environment.

CARLOS ALBERTO MUNIZ
Rio de Janeiro's Secretary of Environment

PRESENTATION

Think global, act local. This simple phrase is more than just a good slogan. It describes the fundamental principle of subsidiarity – taking action on a level as near as possible to the citizens, considering a broad context. This broad context includes environmental, economic and social effects of the actions taken. The principle of subsidiarity is the core idea behind federal state systems. It is also the idea behind the Local Agenda 21.

The concept of the Local Agenda 21 was an outcome of the 1992 earth summit in Rio de Janeiro. The idea was to formulate goals for solutions of the environmental and social problems at a global level but to implement these solutions locally. Each local entity should know best what specific problems it is facing and how they can be solved, bearing the global context in mind, knowing that many environmental and social problems do not stop at country borders. Now, 20 years later, the world is looking at Rio again, heading towards the UN summit Rio +20, analysing the development of the past decades and searching for new concepts that can guarantee a more sustainable future. Again, the local level will play an important role within these concepts. Especially the future role of cities will be a crucial issue. With the increasing number of inhabitants in almost all parts of the world, they are facing enormous challenges but have at the same time the potential to be an important part of the solution for nowaday´s environmental and social problems.

In this publication, Brazilian state capitals are describing cases of successful environmental projects in their municipalities, and hence, showing possibilities to organize a more sustainable and healthy way for cities to function. To exchange those ideas and to find possibilities to co-operate in areas where it makes sense, representatives of the departments of environment of these capitals met for a first national reunion in Rio de Janeiro on May 15th to 18th, 2012. Various representatives of the total 27 Brazilian state capitals signed a Charta to be handed over to the C40, group of the 40 biggest cities in the world, during the Rio +20 summit, to underline their will to improve inter-municipal co-operation and to keep working on sustainable and coherent policies.

The Konrad Adenauer Foundation was honoured and happy to accompany and support the preparatory meetings in the different regions of Brazil and to be part of the national reunion. With that, the Konrad Adenauer Foundation is fostering its work in two key areas: decentralization and strengthening of the municipal level as well as working for a more sustainable way of life to protect the creation and the chance to a good quality of life for future generations.

I want to thank all persons and partners that took part in this important process, especially the secretaries for environment of the different state capitals. I also want to thank the city of Rio de Janeiro and its secretary for environment and sustainability for the fruitful co-operation and preparation of the national dialogue which should be seen as a new point of departure for a more efficient work to shape a more sustainable and socially just Brazil.

DR. THOMAS S. KNIRSCH
Head of the Konrad Adenauer Foundation in Brazil

INTRODUCTION

Nowadays, it is an undisputed fact that human activity is the driving force behind global environmental degradation. In the present global economic crisis, economic solutions have to address environmental issues like global warming, otherwise these solutions will not be sustainable, and the crisis might reemerge with even greater force in the long run.

The city of Rio de Janeiro has been at the forefront on the issue of climatic change. Its policies in that area are noteworthy and include targets to reduce emissions of greenhouse gases until 2020. It is also the first city in the southern hemisphere that introduced a system to measure and observes these.

As part of these efforts, and due to the fact that it is hosting the UN Conference Rio+20, the city government organized a meeting of the secretaries of environment of Brazil's capital cities. The meeting, which was held last May, offered the opportunity to show and discuss concepts of sustainability. At the meeting, 18 success stories of these capital cities where presented, which are also featured in this publication. The municipalities tackled questions like waste management, reforestation, fight against climate change, urban mobility, management of rivers and lakes and environmental education.

The Konrad Adenauer Foundation had the chance to support the local meetings that took place before the main event in Rio. The foundation's contribution is part of its partnership with the Rio de Janeiro Department of Environment, established formally in 2011. The preparatory meetings where held to give the municipal secretaries a say in the organization of the main event and to give them the chance to propose topics to be discussed. The meetings also gave the secretaries the opportunity to exchange experiences on a regional level. Many of the participants pointed out how important it was that secretaries from different cities work together. Even though each secretary faces a slightly different situation, oftentimes the challenges are nonetheless similar. Some of them have managed to reach important goals, for instance an increase of the usually low funding for their offices. Others have worked together with other branches of their municipal administration, which has led to more coherent environmental policies. The exchange of ideas between municipal secretaries can result in important learning experiences and is therefore beneficial for society as a whole.

The event in Rio de Janeiro resulted in the "Letter Rio for Sustainability", a document with agreements and proposals. It was revised, approved and signed by various capital cities, and will be brought to the attention of key players, for instance the C-40. In the future, the CB-27, comprised of the 26 state capitals and the Federal District, will work together to put the agreements into practice. The network now established will serve as a resource for the secretaries of environment in their daily work.

We would like to stress the crucial participation of the representatives of the environmental offices. Their dedication, professionalism and public spirit has made the outcome of the event as well as this publication possible. This book, as one legacy of the meeting, aims to disseminate good environmental practices and raise environmental awareness, for society remains the most important partner in green issues. These components are a fundamental necessity considering the challenges we face in creating a better world for humanity.

On behalf of the organization committee we thank all persons involved in making these first steps of this new process a success.

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BELÉM:
SEEING GREEN: FOR A MORE SUSTAINABLE BELÉM

City: Belém
Mayor: Duciomar Costa
Secretary of Environment:
Camilla Penna de Miranda Figueiredo
GDP per capita (2009): R$11.496,24
Area: 1.059,402 km^2
Population (2011): 1.402.056

1. INTRODUCTION

In today's world the urban green areas, beside the unquestionable function of environmental preservation, have a fundamental role in accommodating the population in leisure, health, quality of life and integration activities.

Image 1

Belém, capital of the State of Pará, is known as the "City of Mango Trees" and 66% of its territory is comprised of islands. Its green areas include 388 locations among squares, parks, retreats and flower patches. Its peculiar setting of urban landscaping consists of mango trees, many of which are centenarian and symbolize a time of wealth and prosperity during the rubber boom in the twentieth century. They can be seen in broad squares and boulevards, which translate to this day, to locals and visitors alike, into a singular example of urban quality of life.

2. JUSTIFICATION AND POPULAR PARTICIPATION

The Federal Constitution of 1998, chapter 6, article 25, highlights that: "All have the right to an ecologically balanced environment, a property which belongs to the people and is essential to a healthy quality of life, and both the public authorities and the community have the duty to defend it for present and future generations".

Based on this assumption, Belém's Environmental Department (SEMMA, in Portuguese), according to the goals set by the Public Authorities, created the Seeing Green: For a More Sustainable Belém[1] Program as an instrument of planning and implementation of the preservation and urban biodiversity policy for the city. Its objectives are to increase biodiversity, conservation of green areas and also regulation of the urban master plan.

The implementation of a sustainable urban project such as the "Seeing Green" needs to have as foundation the partnership between users and public administration. The consequence of sustainability projects which have the population as active participants is to decrease the depredation, theft and improve the upkeeping of green areas.

Thus, the set of actions of the "Seeing Green" project applies the concept of prevention and conservation, with focus on Environmental Education. The maintenance is helped by gardening courses and the election of "green sponsors", increasing the life span of green sites.

The following are part of the program:

- **Tree of Life Project and Fair Play Crew:** In partnership with Pará's power plants (CELPA), the Municipal Department of Education (SEMEC) and the State of Pará's Ministério Público[2] (MPE), it develops Environmental Education actions in the public schools of Belém, using playful methods, encouraging teachers and students to value the importance of the environment.

- **Green Sponsors Program:** searches for partners to join forces and cooperate, in order to construct, revitalize, landscape, preserve and maintain public green sites and areas in the city of Belém.

  In 2011, the program was expanded into subcategories to reach the community in a more direct way. The participation can take place through neighborhood associations, organized and lawfully constituted, election of square "mayors", gardening courses and organized task forces.

- **Development of the Afforestation Plan in the city of Belém:** To strengthen the sustainable development policy in Belém, it is necessary to chart a new course based on these fundamental guidelines: to put into practice the Afforestation Plan, to invest in environmental preservation areas, to intensify the environmental education actions, to create more green areas and preserve the existing ones, to raise awareness and social participation in environmental causes, and, lastly, to implement an integrated environmental policy.

  The legislation 8.909/2012 adopts provisions concerning the Municipal Afforestation Plan of Belém (PMAB) is a concrete example of the result of integrating the executive power, teaching institutions, the organized civil society and the legislative power. The 2012 Technical Manual of Afforestation is also a product of this work. The plan also foresees the update of qualitative and quantitative inventory on Belém's afforestation and the subsequent decrease of irregular planting, such as that of "*Ficus benjamina*" which comprises 42% of Belém's trees according to the latest data from 2004, and, the increase in their removal supported by the municipal legislation no. 8.596/2007.

1 "Ver-o-verde: por uma Belém mais sustentável".

2 Brazilian body of independent public prosecutors.

BOA VISTA: ON THE TRACKS OF CONSERVATION – ECOLOGICAL PARK BOSQUE DOS PAPAGAIOS

City: Boa Vista
Mayor: Iradilson Sampaio de Souza
Secretary of Environment:
Dilma Lindalva Pereira da Costa
GDP per capita (2009): R$15.325,90
Area: 5.687,022 km^2
Population (2011): 290.741

The Ecological Park Bosque dos Papagaios (Parrot Grove) is a green conservation area within an urban context, where visitors can interact with nature and learn a little more about our biodiversity. Its main objective is to raise awareness to the importance of the environment and how to use it in a sustainable way.

On the Tracks of Conservation – Ecological Park Bosque dos Papagaios / Boa Vista – RR

It has a total area of 12 hectares rich in biodiversity, with many preserved species of the native fauna and flora, which provide shelter, safety and food to the animals, especially the parrots after which the park was named.

It is important to highlight that, before the project implementation, the area was utilized for dumping and burning waste, as well as dead animals. With the implementation of the Green Boa Vista practice, which aims to restore degraded areas and to plant native seedlings, today it is considered to have the highest-valued square foot of Boa Vista.

Planting in degraded area of the Ecological Park Bosque dos Papagaios / Boa Vista – RR

Planting and Restoration of Degraded Area in the Ecological Park Bosque dos Papagaios / Boa Vista – RR

It is the main pedagogical tool for promotion of Environmental Education by the Boa Vista City Hall in Roraima, where the Department of Natural Resources Management and Indigenous Matters develops daily actions to disseminate environmental practices among children in public or private schools, university students, teachers, company employees and the community in general.

The most important achievement of the program "On the Tracks of Conservation – Ecological Park Bosque dos Papagaios" is the opportunity of having an ideal space for the development of conservation actions and ensuring an informal, quality environmental education to the community of Boa Vista.

Along with schools, the Bosque dos Papagaios carries out differentiated activities focused on environmental education and the commitment every citizen should make to keep our city clean, as well as to respect the fauna and flora and also to the correct disposal of solid waste.

First the students have access to the Green Room with the dissemination of knowledge and publications from all of Brazil and are stimulated to research and criticality. Moreover, the children attend lectures given by environmental educators and watch educational films and videos about local problems, in an action called Green Screen.

Then the children take part in the Ecological Tracks, always accompanied by environmental educators who act as mediators in value construction. With each step, the guides teach the children about the main species of trees and birds found on the way. Here, the taxidermy animals are an important educational tool, because the children are taught about the maltreatment and the traffic of animals.

Interpretative Trails – Ecological Park Bosque dos Papagaios / Boa Vista – RR

At the end of their hike, the students are surprised with a very special present. They receive a booklet, "A Visit to the Bosque dos Papagaios", as well as other pedagogical material, such as the jigsaw puzzle that illustrates the regional fauna.

Publishing of the Child's Primer: A Visit to the Bosque dos Papagaios */ Boa Vista – RR*

What sets this practice apart from other initiatives is that students are treated as the central element in the teaching and learning process, by assessing their previous knowledge and guiding them in discovering new concepts. The environmental educator's role is to mediate and look for a methodology that facilitates the construction of knowledge according to their age group.

It should be noted that the interaction of theory and practice, as well as the use of games, results in significant learning through play by the students.

Playfulness: Theater play about environment for children / Boa Vista – RR

According to the actions developed, there is a great number of people who visit the park and participate in these activities. The quantitative results are measured when we observe that, since the creation of the Ecological Park Bosque dos Papagaios in July 2009 and after the implementation of the project "On the Tracks of Conservation", 22,666 people, 66 teaching institutions (schools and universities) and 32 public and private institutions have been sensitized by the environmental practices developed there.

It is worth noting that an important action performed by this project is the creation of educational material and the publication of books, children's primers, brochures, booklets for children, teens and adults with financing from the Municipal Fund for Environment and the fines whcih are converted into pedagogical resources.

The innovation for 2012 is the launching of a Wildlife Keeper which will provide a safe environment and proper feeding for specimens originating from animal traffic or that have endured maltreatment and are not able to survive in their natural habitat. Besides that, we will launch a worm farm in the park which will promote sustainable development, since the technique will be taught to groups responsible for multiplying them to other farmers.

This practice is a reference to other institutions for its commitment to the environment and for recognizing global similarities while effectively interacting with local specificities, through the motto: *Think globally, act locally*. Moreover, its pedagogical proposal is based on four pillars of education: *learning to learn, learning to be, learning to know and learning to do*.

The keys to sustainable progress are participation, organization, education and fortification of people, the contact with the community and answering its questions, and bringing awareness to the reality faced by the environment.

With all that was stated, it is evident how important this practice is for the inhabitants of Boa Vista and their quality of life, and for the conservation of its natural resources.

When we discuss environmental conservation and sustainable use of natural resources, we can reach not only the city of Boa Vista, as this is a global concern, and the actions taken by this practice cross borders, benefitting the entire planet.

Today we can see the changes that make a difference through this practice and the "twinkle in the eye" of the population, proud to be able to participate in this initiative.

MANAUS: URBAN AFFORESTATION PROGRAM "GREENER MANAUS"

City: Manaus
Mayor: Amazonino Mendes
Secretary of Environment:
Marcelo José de Lima Dutra
GDP per capita (2009): R$23.286,06
Area: 11.401,077 km^2
Population (2011): 1.832.423

CONTEXTUALIZATION

From the second half of the 17th century on, Manaus started seeing a series of more significant changes in its townscape. The high tax revenues due to the rubber boom enabled several construction works designed to embellish and modernize the city to make it a part of the more developed cities. The urban landscape received trees such as marron, mango and royal palm.

With the disordered growth originating from the implementation of the free-trade zone in 1967, the city began showing many environmental problems, such as the loss of tree mass over the entire urban area of the city, which resulted in an incredible paradox of a tree deficit in a city located in the heart of the biggest tropical rainforest in the planet.

The municipal authorities started to take action to mitigate the problems caused by this growth only in 2001. Through the City Law no. 605/2001 (Environmental Code of the city), the first legal provisions regarding city forestry were introduced. Also from the same period came the regulation of the subject through a collegial body with participatory representation, the Environment and Sustainability City Council – COMDEMA, with approved Resolution 090/2006 regulating the cutting and pruning of trees. This advancement, however, could not improve the condition of environmental imbalance in the urban area. The vision proposed by the "Greener Manaus" Program was that the reversal of the situation would depend not only of individual actions, but of an integrated set of actions in the legal, scientific and administrative fields.

The strategy sought by the City Hall of Manaus was to broadly increase environmental management in the sector, first through institutional strengthening, which led to ordering all of the afforestation actions in the city with the launching of the Master Plan for Urban Landscaping – PDAU. Those were the guidelines to the reforestation: since the planning to the continuation of the process. They included several innovative initiatives, from the training of a technical crew to the action plan for the planting. It also included a technical-scientific foundation of its actions, by means of mapping the heat islands in the urban area in order to identify the priority sections for the afforestation, as well as contracting the Management Plan for Urban Landscaping by geographical area. Finally, it also looked for alternative management tools, such as the conclusion of a vesting term for use of public space for the planting and maintenance of the urban landscaping, and for the cooperation with other city departments in order to perform comprehensive actions to restore degraded areas and environmental education. Such combined mechanisms aim to increase the effectiveness of the public administrator's actions and bring forward the desired environmental quality.

Below is a brief selection of the projects in the "Greener Manaus" Program.

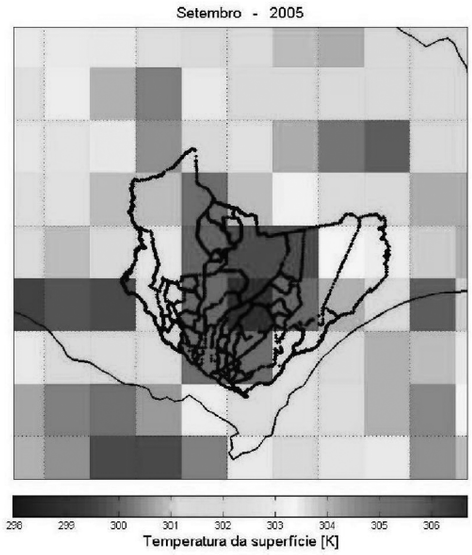
■ **Manaus' Master Plan for Urban Landscaping**.

Investment: no cost for municipal treasury.
Beneficiaries: the entire urban population of Manaus.

The Master Plan for Urban Landscaping of Manaus was the result of an extensive work which brought together members of the forestation-theme chamber of the Environment and Sustainability City Council (CONDEMA). It comprised members of government and society representing several institutions involved with the subject, such as: bodies of the City Hall of Manaus, universities, research institutes and society organizations. The construction process also included an open consultation during the 2011 Environment Week in the city and the release of a link, on the city hall website, which contained the draft of the plan and an electronic address for submitting contributions. Approved as a Resolution of the Environment City Council, the Department of Environment and Sustainability will now forward it to the City Hall of Manaus so that it can, as an additional plan, be integrated into the Master Plan of the City Of Manaus and take on force of law.

Among the highlights of the Master Plan for Urban Landscaping is the inclusion of a chapter entirely dedicated to environmental education in urban landscaping, the establishment of the Management Plan for Urban Landscaping by geographical area and the rules related to the production, planting, pruning, cutting and transplanting of trees.

■ **Mapping of Heat Islands in the Urban Area of Manaus**
(Project SEMMAS/UEA with support from the Municipal Fund for Development and Environment).



Investment: R$ 123,500.00 (one hundred twenty-three thousand and five hundred reais).
Beneficiary: City Hall of Manaus.

The phenomenon called "Urban Heat Island (UHI)" is the increase in temperature of the surface and the air over an urban area in relation to the neighboring rural or suburban areas. This phenomenon, typical of urban regions, should be taken into consideration when determining actions and priorities in order to curb its exacerbation as well as minimize its effects. In this context, the project proposes the realization of an observational study and numerical modeling to identify, measure and diagnose the phenomenon of heat islands in the urban area of the city.

The project is being developed on two work fronts:

1. Observational Study which aims to identify and measure the "heat islands" in the city of Manaus using remote information of surface temperature estimated by environmental satellite (TERRA and ACQUA):

2. Numerical Modeling which aims to identify and measure the "heat islands" in the urban area of Manaus using high spatial resolution numerical modeling (from the BRAMS regional atmospheric model) and land use maps.

■ **Planting Changes! Project**
(SEMMAS/SEDUC/SEMULSP Project)

Investment: R$ 30,000.00 (thirty thousand reais).
Beneficiaries: 38,628 people (population of the Monte das Oliveiras and Santa Etelvina neighborhoods).

Planting Changes! is a forestation project for the restoration of degraded areas and riverbanks in the city of Manaus. The purpose of the project is to perform transforming actions on the cityscape in critical spaces, with active participation of the population in the planting, in order to promote its awareness and involvement in the conservation of public property.

In 2010 there was a massive planting of 27,000 (twenty-seven thousand) specimen on the banks of the Passarinho Creek, a re-urbanized watercourse which was still deprived of vegetation. In view of the magnitude of the work, it was necessary a logistical preparation of opening pits and transferring the seedlings which involved workers of all sectors of the SEMMAS (Environment) and SEMULSP (Public Cleaning) and, with the support from the city's Department of Education, 1,290 students also participated in the planting.

■ **Vesting Term for Use of Public Space**
(SEMMAS/PRIVATE SECTOR Project).

Investment: no cost for municipal treasury.
The concessionaire is obliged to annually deposit R$ 22,514.00 (twenty-two thousand five hundred and fourteen reais) on behalf of the Municipal Fund for Development and Environment.
Beneficiaries: the urban population of the city.

The afforestation of the city causes the management of this public property to be quite complex, because we are dealing with living creatures that have a life cycle with its own different care for each phase. The tool of the vesting term for public space, where the concession holder takes over the implementation and maintenance of the landscape for a period of time and receives in return the authorization to exploit advertising space, provides a solution in which both private and public interests are met simultaneously.

The City Hall of Manaus, through Competitive Bidding no. 003/2010-CML/PMM, granted the selected company the planting and maintenance of 10,000 (ten thousand) new trees for a period of 5 years, and the operation of the advertising panels conjugated to the structures protecting the trees. The concessionaire is also obligated to provide the cleaning and maintenance services of the public property, including the rebuilding of the pavement when necessary. Since the beginning of the new system, 1,186 trees have already been planted.

■ **Seed Bank of the City**
(SEMMAS/UFAM Project with support from the Municipal fund for Development and Environment).

Investment: R$ 241,476.19 (two hundred forty-one thousand, four hundred and seventy-six reais).
Beneficiary: City Hall of Manaus.

The objective of the Seed Bank Project is to support the production chain of the urban landscaping in the city of Manaus through ensuring the supply of propagative material, according to the current legislation, to meet the demands of the SEMMAS, support studies on the biogeography and phenology

of the species of interest to SEMMAS, support the training of collectors in the areas of occurrence, development of studies on the production and technology of the seed species of interest, promotion of storage ex situ and in situ and analysis of the lots of propagative material.

PORTO VELHO:
PROJECT URBAN FIRES, EXTINGUISH THIS IDEA

City: Porto Velho
Mayor: Roberto Eduardo Sobrinho
Secretary of Environment:
José Carlos Monteiro Gadelha
GDP per capita (2009): R$17.260,03
Area: 34.096,429 km^2
Population (2011): 435.732

CONTEXTUALIZATION

Over the last decades, the existence of what is called "Arc of Deforestation" or "Arc of Fire" has been recognized, due to the increasing deforestation in the Amazon. It is geographically located to the south of the Brazilian Amazon where, among others, the state of Rondônia is. In that political context, the Brazilian and local governments began focusing and coordinating their actions to reverse the situation which ranked cities and states by the amount of deforestation, especially by use of fire.

The capital of Rondônia, Porto Velho, has remained in this bitter top spot because of its territorial extent. It follows the regional trend of forest extinction to make way for agribusiness, especially logging and cattle breeding. The deforestation, directly and proportionately linked with gaseous emission in the atmosphere, is identified as the primary villain for the local and regional population during the dry season. In this period, the air quality is comparable to that of industrialized parts of China.

There are countless government attempts to curb the deforestation and consequently the number of outbreaks of fires. According to data generated by the National Institute for Space Research – INPE there has been a sharp decline in the number of Amazon fires since 2004; the constant monitoring of the forest and particularly the protected areas have pushed those numbers down.

In Rondônia, as part of the efforts in this task force, the State Committee for Fighting Forest Fires was created. It comprises dozens of institutions that work conjointly to deter forest fires, operationalize actions in fire fighting, and identify and punish those responsible.

In 2011, the Porto Velho City Hall broke new ground by proposing and creating a municipal committee, equally structured by several institutions, to work in the prevention of urban fires, considering that the impact on the urban community affected the human health and the aggravation of land and air traffic due to the excess smoke accumulated in the city during critical periods. The campaign "Urban Fires, Extinguish This Idea" was structured on three axes: mobilization, environmental education, and supervision.

OBJECTIVE

The main goal of the campaign is to contribute to a substantial decrease in air pollutant emissions derived from burning material; it also aims to improve air quality in the city, which is proven to be responsible for the onset of respiratory problems, particularly during the dry season (between June and September).

However, the main legacy of this work may be to stimulate reflection and raise the urban population's awareness to a behavioral change regarding the use of fire. A cultural transformation of this scope should mean a gradual improvement in the quality of life.

METHODOLOGY

The city of Porto Velho's Fighting Fires program, especially the campaign "Urban Fires, Extinguish this idea", has sought to strategically operate in conjunction with government agencies responsible for environmental policies, the civil society, the private sector, schools, media outlets and the community in general to organize the capabilities of each partner according to the campaign's structural axes described ahead.

The activities developed in 2001 in the **Mobilization Axis** focused on the publicity of damage to the environment and health caused by the excessive 'smoke'; inserts on radio and TV alerted the community of the prohibitory legislation and alternative suggestions to the use of fire in the urban daily life, and how the population can file a complaint through the Environmental Protection toll-free number (0800-647-1320).

In the **Awareness Axis**, environmental education was intensified in schools (through workshops and lectures), in the partner institutions – which welcome the team to disseminate information on how to promote a healthy environment among workers, in a way that they become multipliers, and in the "a day without fire" activities, where set points are established in neighborhoods that have received many fire complaints through the 0800 number. They are Pit Stops, usually in intersections with heavy traffic, where drivers and pedestrians are approached and campaign literature and stickers are given out.

On that same day, others teams comprised of educators and partners (such as military and air force soldiers and firemen) visit each household in a previously determined region or neighborhood to individually approach residents and distribute campaign material.

As to the **Supervision Axis**, the system formed in the Department of Environmental Monitoring (DFIS) is responsible for receiving complaints about fires and other environmental violations through the toll-free number (0800.647.1320). In addition, the DFIS performs the systematization of the complaints according to location, number of violation notices and file notifications generated, registration of infractors and production of reports. Based on the data compiled, it is possible to better manage the campaign's emergency actions.

The monitoring is performed daily, and on business days it is joined by 18 environment inspectors who, upon finding infractions, issue fines and demand the immediate restoration of the degraded area. On weekends and holidays this work is done by teams on duty, which stand by from 9 to 5 expecting to arrive at the site of infraction and prevent the unauthorized fire or its spread.

The synergy between the actions of each axis and its partners enables an achievement based on a **macro approach**, promotion of the campaign aiming to educate the population about the damages caused by the fires and that this practice is a crime, and a **micro approach**, which attempts mainly to prevent the fires and consequently reduce gas emissions in the atmosphere through the physical presence of the environmental education agent or the monitoring agent. When this is not possible, the operating of penalty measures ensures the action doesn't happen again.

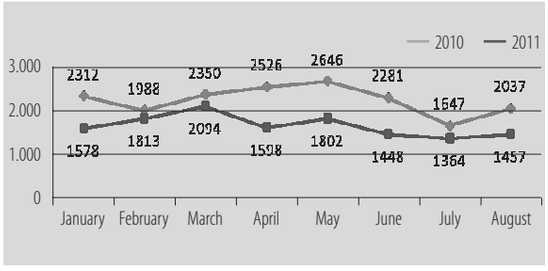
RESULTS

As a result of the program, two indicators have been defined:

- Decrease in hospital attendance due to respiratory problems;
- Increase in the number of fire complaints through the phone number 800-647-1320

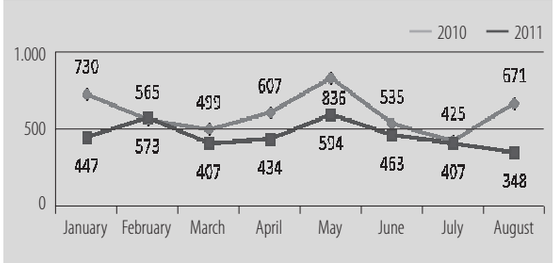
Based on these indicators, the following graphs were elaborated:

Gráfico 01. Nebulizations performed on children aged 0-5 in the Municipal Health Units of Porto Velho – RO



Source: DAB/Municipal Health Department

Gráfico 02. Treatment of children with repiratory problems in the Cosme e Damião Children's Hospital

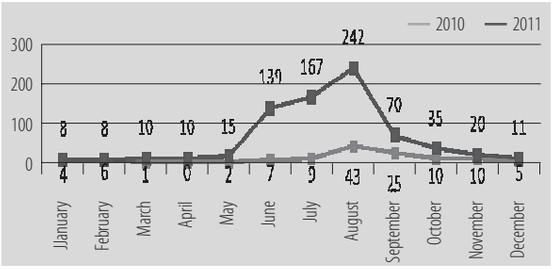


Source: SAME/ Cosme e Damião Children's Hospital

In 2011, it is possible to notice a substantial decrease compared to the previous year. It is safe to affirm that the Campaign for Prevention of Urban Fires carried out by Municipal Environmental Department – SEMA had its share in contributing to this number through the several awareness actions pertaining to the damages caused by smoke.

Another important indicator was the population's involvement with the Campaign for Fighting Urban Fires, by measuring the number of complaints received in 2010 (before the campaign) and 2011 with the campaign starting in June, as shown by the graph:

Gráfico 03. Fire complaints in the city of Porto Velho – RO



Source: DEFIS/ Municipal Environmental Department

According to this information, we can notice a substantial increase in the number of complaints related to fires in Porto Velho from 2010 to the following year, particularly in the months after June, which demonstrates the impact of the campaign and the satisfactory acceptance by the population of the information made available by the department.

It should be stressed that in the months when there is a decrease, it is considered to be a result of the occurrence of rain, common in that time of the year.

Comparing annually, it is possible to affirm that according to the number of nebulizations performed on children aged 0 to 5 in the Health Units of Porto Velho, there was a decrease of **4,633** cases between January and August of 2010 and 2011.

Regarding the number of treatments of children with respiratory problems in the Cosme e Damião Children's Hospital, there was a decrease of **1,195** cases.

In relation to the number of complaints about urban fires to the Municipal Environmental Department, there was an increase of **519** complaints compared to the previous year.

RIO BRANCO: CITIZENSHIP FROM WASTE

City: Rio Branco
Mayor: Raimundo Angelim
Secretary of Environment: Silvia Helena Costa Brilhante
GDP per capita (2009): R$8.627,22
Area: 8.835,675 km^2
Population (2011): 342.298

1. INTRODUCTION

In most parts of the planet, garbage is just dumped in irregular places, contaminating the environment. When the amount becomes too large, and the measures to contain it are insufficient, garbage becomes a big problem that cannot be left unhandled.

The Modernization Project of the Public Management of Urban Solid Waste in the city of Rio Branco, in the State of Acre, began in 2005 with the need to close down the previous site for solid waste disposal, which had reached its capacity and was a dumpsite (picture 1) causing great environmental impact.

Picture 1; Rio Branco's Waste Disposal Site in 2005, notice the trucks on top of the waste mass.

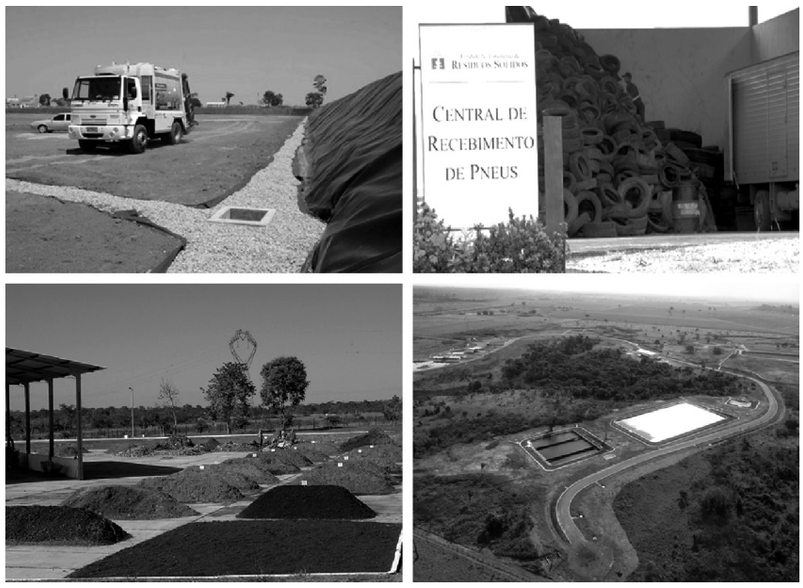
The mayor's office adopted the following measures in order to solve these problems: it proposed, in 2006, the adoption of mitigation measures in the current dumpsite to transform it into a controlled landfill; and the construction of the **Unit for Treatment and Disposal of Solid Waste** (henceforward UTRE), which would definitively solve the question of the final destination of solid waste.

2. EXECUTION STRATEGY

The UTRE of Rio Branco was built for the following objectives: treating and giving adequate destination to the solid waste; restructuring the Urban Cleaning System, seeking to improve the separation, collection and stowage of solid waste; making the urban cleaning system compatible with the other existing plans and sectorial programs; recycling organic and inorganic residues; producing organic compost to strengthen family farming; implementing public selective waste collection; and strengthening and organizing the Reusable and Recyclable Materials Collector's Cooperative of Acre (CATAR).

The project to build the UTRE was executed with resources from the Fundo de Garantia por Tempo de Serviço (FGTS)[1], by means of credit transaction (R$ 9,618,300.00).

The UTRE is more than a landfill (picture 2), beyond following the category standards, it is one of the most modern waste sites in the country, because it consists of the following units: a sanitary landfill with an estimated lifespan of 20 years; triage of recyclables unit, operated by the collector's cooperative that receives, at no cost, all the resulting material from the public selective waste collection; a Compost Central,



Picture 2. From the top, clockwise: final disposition cell; tires ecosite; sewage pools; and Compost Units, the UTRE was launched in October 2009.

where the fertilizer produced is donated to rural workers; Tire Collection Central – Ecosite where tires are stored and then collected by RECICLANIP (Brazilian industry in the area of post-consumption responsibility); Recycling of Construction Waste Unit; Health Services Waste Treatment Unit and Grounding Ditches for Dead Animals and Septic Waste; Grinding of Recyclables Unit.

The UTRE is by definition a construction that integrates economic, social, environmental and institutional aspects. The venture's sustainability is demonstrated by the responsible way the financial resources were used, but also by its social aspect, for it promoted social inclusion of people with low levels of education in the labor market, contributing to the strengthening of a solidary economy which is a way to produce, use and distribute wealth based on the value of human beings instead of capital.

Currently Rio Branco produces, on average, 210 tons of waste per day, 0.6 kg/inhabitant/day. The selective waste collection done by the Municipality as well as by collectors or entrepreneurs promotes the decrease of land, water and air contamination, which prevents diseases and makes the building of new landfills unnecessary. The residue from hospitals, laboratories, pharmacies, health centers, etc. go through a treatment process, avoiding environmental contamination; and selective waste collection became a municipal policy as from 2010.

Through the building of the UTRE it was possible to establish a partnership between the Acre State government, the Rio Branco City Hall and a private company to build a recycling plant for plastic residue, which generated 150 direct jobs and increased the income of trash collectors, since it buys all the product collected by them.

The UTRE is managed by the city's Urban Services Department with support from the Environmental Department, the Department of Agriculture and Forestry and the Municipal Coordination Office of Labor and Solidary Economy. Besides municipal bodies, the presence of CATAR in the institutional arrangement of the UTRE guarantees a partnership between society and public companies, which is important for social control of the enterprise (picture 3).

Picture 3. Collectors sorting solid residues, in 2010.

Another partnership worth highlighting is the one made between CATAR and PLASACRE (first private company in the state of Acre to invest in recycling), for promoting social commitment in the company and the cooperative has easier access to the collected materials.

3. PROVEN RESULTS

By being effectively implemented, the Unit for Treatment and Disposal of Solid Waste has reached its initial goals and also got other important results: it enabled the interaction with the community of Rio Branco by promoting visits and lectures in the Unit; strengthened community organizations through the establishment of partnerships with neighborhood associations for selective waste collection; strengthened the city's Environmental Education Program which aims at raising awareness, changing attitudes, values and behavior in relation to the adequate destination of solid residues, by promoting concrete activities; prevented environmental impact; decreased the exploitation of natural resources; decreased and prevented risks to public health; saved expenses on public cleaning, by improving the System; reduced the production of solid residue.

One can also highlight the social inclusion: the population with the lowest level of education had opportunities to organize in cooperatives, besides contributing to the city's cleanliness and the environment. The population that provides the recyclable material for collectors is also exercising citizenship.

In 2010, CATAR was considered the best collector's cooperative in the Northern region of Brazil, receiving the CEMPRE (Business Commitment to Recycling) award. The UTRE received in 2011 the first place in the Eco-City award, granted by the Brazilian Association of Special Waste and Public Cleaning Companies (Abrelpe) and was top 20 on Best Practices in Local Management, awarded by CAIXA Econômica Federal.

Another important factor is early planning, the Rio Branco City Hall anticipated the national legislation (nº 12.305/2010) which was only launched on August 2010. So, it is important to highlight that this experience is, therefore, not undertaken by law enforcement, but by the current administration's commitment to the environment, because the whole process was initiated in 2006, many years before there were legal requirements. Rio Branco's Municipal Plan of Integrated Management of Solid Waste is also on its final phase of elaboration.

1 Set of resources raised from the private sector and administered by Caixa Ecônomica Federal. These resources are used to aid workers in case of illness, unemployment, etc. They can also be used as investments in habitation, sanitation and infrastructure.

BELO HORIZONTE: THE ENCHANTING CAPITAL

City: Belo Horizonte
Mayor: Marcio Lacerda
Secretary of Environment: Vasco de Oliveira Araújo
GDP per capita (2009): R$18.182,70
Área: 331,400 km^2
Population (2011): 2.385.639

The capital of Minas Gerais is today a metropolis prepared for the challenges of the 21st century. A list of initiatives in key areas of public administration; urbanization, traffic, social and environmental policies, health, and education have been defining the city. With financial stability and administrative austerity, Belo Horizonte distinguishes itself due to its active popular participation and shared way of governing, in which the city is a partner in all projects. This model, recognized in national and international arenas, enables the municipality to take yet another step further in its development to incorporate into administrative management long-term planning, in which objective goals, mechanisms for implementation, monitoring processes and the guarantee of results are all widely disseminated. Belo Horizonte has a population of 2.4 million inhabitants in its 331 km^2 area, which represents 12.5% of the total population and 15% of the state´s economically active population (PEA), accounting for 25% of formal employment and comprising 15% of the gross state product (GSP). It is among the nine municipalities that contribute most to the national GDP. More than two thirds of its GSP is generated from trade, services and activities related to public administration.

BUILDING A SUSTAINABLE CITY

The City of Belo Horizonte, concerned with establishing local policies on mitigation and adaptation, began its *Effects of Climate Change Municipal Policy* with the Municipal Committee on Climate Change and Eco-Efficiency institution (CMMCE) through Municipal Decree No. 12,362 of 3rd May, 2006.

CMMCE is an advisory board, with the objective of supporting implementation of the City of Belo Horizonte´s municipal policies regarding climate change, working in the articulation of public policy and private initiatives to reduce greenhouse gases in the atmosphere and to raise general awareness regarding the environment in society. It comprises representatives from: municipal and state governments, Municipal Council Chamber, civil society, nongovernmental organizations, the business sector, and academia, ensuring legitimacy of the population´s participation in various decisions related to the pursuit of environmental sustainability in the municipality.

BH is the Brazilian capital with the best air quality. Source: Portal BH

Project for Energetic Efficiency of Traffic Lights of BH. Source: portal BH

Since its implementation, the Committee has opened more space for different social actors, recording their contributions and discussing them in *Work Groups*, whose themes are: sanitation, renewable energy, sustainable mobility and sustainable buildings

Thus, as a result of voluntary collaboration of these *Work Groups* several public policy initiatives have emerged in the area of sustainability, which include:

- municipal publication of *Guidelines on Climate Change and Eco-Efficiency* (2008);
- preparation and publication of *The First Municipal Inventory of Greenhouse Gas Emissions and Greenhouse Effect* (2009, reference period: 2000-2007);
- publication of manual Sustainable Building Policies – PoliCS, in partnership with ICLEI – Local Governments for Sustainability (2010);
- inclusion of the 20% target for reduction of greenhouse gases in the Strategic Planning of Belo Horizonte for year 2030;
- enactment May 2011, Law No. 10.175/11 establishing the "Municipal Policy Mitigating the Effects of Climate Change";
- engagement of *Plan for Reducing Emissions of Greenhouse Gases* (PREGEE) and updating the Municipal Inventory of Emissions of Greenhouse Gases – (2012). The object of PREGEE is urban and environmental planning oriented, offering proposals for the reduction and mitigation of greenhouse gases – a set of initiatives to adapt the environment to climatic changes by fostering improvements in infrastructure in order to improve quality of life for Belo Horizonte´s citizens. Various issues related to transportation, energy, green building, land use, health, education for sustainable development, and economic and financial mechanisms are addressed;
- participation in the drafting of the Tool for Rapid Assessment of City Energy (TRACE), funded by the World Bank (2012). This is a tool to perform a quick sectorial analysis of energy use in a city, prioritizing sectors with significant potential for energy savings, and identifying interventions in energy efficiency (EE) appropriate for the local level. TRACE includes an assessment of the energy efficiency in six municipal sectors – transport, street lighting, buildings, energy and heating, solid waste, and water and wastewater;
- establishment of the *Environmental Sustainability Certification* — the *"Sustainable BH"* seal.

The Environmental Sustainability Certification Program reflects a public policy initiative of the Municipality of Belo Horizonte, and is evidence of recognition, awarded to public and private enterprises, residential and commercial condominiums and/or industries which adopt measures to contribute to the reduction of water consumption, energy, direct emissions of greenhouse gases and the reduction/recycling of solid wastes.

Joining the program is done on a voluntary and consensual basis and its implementation is the responsibility of the Municipal Secretary of the Environment, with support from the Municipal Executive Committee to the FIFA World Cup 2014 and the Municipal Committee on Climate Change and Eco-Efficiency. The certified enterprises will receive the seal in Gold, Silver or Bronze, according to scope of project and results achieved by the measures adopted and management efficiency. A *Certificate of Good Environmental Practices* will also be awarded for those enterprises that adopt sustainability measures,

but do not reach the minimum levels established for certification in each thematic area. The legal basis of certification is the Normative Resolution No. 66/2009 of the Municipal Council for the Environment (COMAM) which established measures for sustainability and combatting climate change.

The overall objective of the program is to reduce emissions of greenhouse gases in the municipality in order to achieve the goals established in the Strategic Planning for PBH 2030, of 20% reduction of emissions. The program also aims to stimulate a policy for sustainable construction in the city.

The adherence of enterprises to the certification program will contribute significantly to improving environmental conditions in the city; especially with regard to the well-being of society, the sustainability of natural resources, and air quality.

A new way of managing the urban environment will be established with this program — proactive and innovative – by encouraging the implementation of sustainable environmental projects and introducing definitive sustainable construction to Belo Horizonte. In this way, Belo Horizonte is getting ready to meet the greenhouse gas emission reduction targets; contributing effectively to the national policies of tackling climate change with the development of a low carbon economy.

Further information may be obtained from the site: www.cesa.pbh.gov.br.

CURITIBA:
PRIVATE RESERVES OF MUNICIPAL NATURAL HERITAGE

City: Curitiba
Mayor: Luciano Ducci
Secretary of Environment:
Marilza do Carmo Oliveira Dias
GDP per capita (2009): R$24.720,21
Area: 435,274 km^2
Population (2011): 1.764.540

Curitiba is the capital of the state of Paraná, in the Southern Region of Brazil. It was founded in 1693 and occupies a total 432.17 km^2 in the latitude 25o25'40"S and longitude 49o16'23"W. It is the hub city of the metropolitan area, composed of 29 municipalities which, together, occupy an area of approximately 16 thousand km^2, with 3.223.836 inhabitants, of which about two million live in the capital. The city represents an annual income per capita of 24.720,00 (IBGE, 2009).

Curitiba has consolidated a tradition of development in harmony with the environment, a commitment reaffirmed in recent years in many international forums where local authorities meet to debate biodiversity, climate change and sustainability, as well as in a set of current public policies.

The Curitiba region was originally covered by Araucaria Rainforest (Mixed Forest), an ecosystem associated to the Atlantic Rainforest biome. The Araucaria Forest was greatly degraded by manmade occupation, only 1% of its original coverage remains in the state of Paraná.

Approximately 20% of the city's area is covered by forest fragments, part of which is protected by the Municipal System of Conservation Units, distributed amongst 21 Municipal Parks, 16 woods, one botanical garden and one ecological station, but for the most part belonging to private owners. Thus, society´s participation is the key to preserving these areas, which are so important for maintaining a good quality of life for citizens. The real estate in these wood areas is registered in the Green Areas Special Sector, a zoning with specific legislation which limits the use of these properties, aiming at preserving as much green area as possible. The properties with large scale forest coverage or araucaria (*Araucaria angustifolia*) can benefit from tax[1] reductions, a way to promote owners of green areas to help in preservation efforts.

Besides the legislation for licensing and inspection, the Curitiba Municipality was highly innovative when creating the Private Reserves of Municipal Natural Heritage – RPPNM, a Conservation Unit of Sustainable Use that allows the owner to continue living in his property, keeping the green area while allowing environmental education activities and scientific research to take place, and also making possible the transfer of construction potential to other properties without environmental restrictions.

It is the best way to allow the preservation of green areas in the municipality, in a partnership between the municipal public authorities and society, that doesn't weight on public funds, keeping owners in their areas in a relationship of mutual benefit, where everybody wins.

Since the promulgation of the legislation, in 2006, 5 (five) Private Reserves of Municipal Natural Heritage were created, showing that society adhered to the project and to the intent of preserving nature. Currently, 28 processes are under analysis to verify the possibility of creating new Private Reserves of Municipal Natural Heritage.

Through an agreement with the NGO Sociedade de Pesquisa em Vida Selvagem e Educação Ambiental (SPVS), many visits were made to the owners of 1000 selected areas, which measure over 5000 m^2. Properties with important forest fragments receive visits from professionals specialized in nature conservation in order to receive technical guidance, environmental education, information about invasive exotic species and dissemination of information about the possibility of creating Private Reserves of Municipal Natural Heritage (RPPNMs). The objective of these visits was getting to know areas, describing the quality of the forest fragments, in order to build a database about the areas and their conditions, which would allow future planning in relation to the actions to be taken, and orienting the owners, in order to improve the environmental quality of the areas, and show that there is another option to conserve the area – with a possible economic benefit.

The legislation that created the Private Reserves of Municipal Natural Heritage was modified on December 2011, bringing about even more benefits to owners, motivating a greater number of people interested in creating Private Reserves of Municipal Natural Heritage. The creation of these reserves has rigid criteria, for even though it is a voluntary request from the owner of the area, the creation of a Conservation Unit is made in perpetuity, and requires follow-up care to maintain the area, according to the principles that guide its creation.

One of the contemplated actions in this initiative is periodical meetings with owners in order to disseminate information on how to handle these areas, as well as providing necessary clarification and guidance to transform these reserves. One of the consequences related to this initiative was that people who owned these properties with forest fragments united to create an association, the Green Areas Protectors Association of Curitiba and Metropolitan Area[2] (APAVE), with the support of many entities, including Curitiba's Municipal Department of Environment. The Association meets biweekly to discuss suggestions on how to improve the maintenance of forest fragments in the region, exchanging experiences about the maintenance of their areas.

This work is a great partnership between society and the mayor's office, reconciling urban development and environmental conservation, bringing about better quality of life for the city's inhabitants, maintaining the connectivity between Curitiba's Conservation Units and the ones around them, allowing the conservation of biodiversity in the municipality, and serving as a transition, rest and feeding area for migratory species.

This is another way to plan the urban environment for the propagation of new strategies in building sustainable societies. By focusing currently 85% of the population in their territories, it is necessary for cities to work well, so that the planet is viable. Cities that renew themselves and function as a living body. Privileged spaces for the realization of desirable changes.

1 Imposto sobre a propriedade predial e territorial urbana, or IPTU, is a brazilian tax that levies on urban property.

2 Associação dos Protetores de Áreas Verdes de Curitiba e Região Metropolitana, in the original.

PORTO ALEGRE: SOCIAL–ENVIRONMENTAL INTEGRATION PROJECT (SEIP)

City: Porto Alegre
Mayor: Jose Fortunati
Secretary of Environment: Luiz Fernando Zachia
GDP per capita (2009): R$26.312,45
Area: 496,684 km^2
Population (2011): 1.413.094

Porto Alegre is preparing to face one of its greatest challenges: the treatment of wastewater. For decades the city has grappled with a precarious wastewater treatment system. Today, the State´s capital comprises 1.4 million habitants. Yet only 27% of the wastewater is treated, ranking it as one of the country´s worst.

Following years of research and detailed studies of the social and environmental impact, engineers, sociologists and environmentalists formulated the Integrated Socio-Environmental Project (SEIP). This project involves environmental management, sanitation, resettlement and redevelopment in areas of flood risk.

Sanitation is one of the highlights of SEIP. A comprehensive pumping system stretching 17km starting in the central region will be implemented to treat the wastewater. The result will see and increase from 27% to 80% to the capacity of wastewater treatment in Porto Alegre. It is a great step towards improving the quality of life.

The project consists of several initiatives, including resettlements, sanitation, construction of embankments and dikes, drainage, re-urbanization and environmental management encompassing the entire stretch from the mouth of the Cavalhada Creek, through Avenida Icaraí and Arroyo Passo Fundo, including the construction at Avenida Do Parque, until Avenida de Cavalhada.

ISEP is the biggest sanitary public works in the history of Porto Alegre with 800,000 people benefiting directly. A total of R$ 586.7 million is being invested with funding of R$ 203.4 million from Inter-American Development Bank (IDB), R$ 316.2 from Caixa Econômica Federal offset by R$ 67.1 million coming from the Prefecture.

The implementation of ISEP will dramatically improve the bathing water quality of Lake Guaíba by 2028. There will be a reduction of over 99% of fecal coliform disposed in the extension of the lake. The water supply system will also be improved due to the reduced load of organic pollutants and density of coliforms in the collected water.

The project is 80% complete. Work began in December 2007 by Restinga´s Sanitary Sewage System (SSS) and should be concluded by the end of 2012 with the completion of the Sewage Treatment Plant (WWTP) in Serraria and all newly-built sewage systems entering into activity.

SANITATION

The flow in the basin of the Arroyo Deluge continues to be served by the Baronesa Gravatai pumping station and connects to the Ponta da Cadeia pump station, at which point a stand pipe has been employed. From Ponta da Cadeia the flow follows southwards along Avenida Edvaldo Pereira Paiva to Avenida Beira Rio. The pipeline continues along Avenida Diário de Notícias and arrives at the Cristal pump station, located near the mouth of Cavalhada Creek. The flow of sewage from the Cavalhada Creek Basin goes to the C2 pump station, where pre-treatment is carried out. This station is also equipped with stand pipe. After receiving the flux from Cavalhada Creek, the pipeline becomes submerged at Lake Guaíba, and follows southward. Advanced technology is required for mounting and assembly of pipeline to lake bed. The pipe emerges from the shore of Lake Guaíba to reach the modern plant located in the Serraria neighborhood. At this station the sewage is completely treated by means of a physico-chemical process. There is a pumping station located at the outlet of the treatment plant which then pumps the treated water, now free from contamination, back into the lake.

OTHER BENEFITS

Equally as important as the works on the restructuring of pump stations and treatment of sewage are the improvements for the population that are being implemented in tandem.

Life is changing for those who live precariously in areas of risk with approximately 1.500 families that live in the vicinity of Arroio Creek being resettled to other locations, either within the same region, or to other locations of their choosing. The housing will be built to DEMHAB standards, with solid structure and long durability. In addition to traditional housing, the city is offering a new alternative: A Housing Bonus to the value of R$ 40,000 which allows families to choose a property of their preference in desired location. It is a democratic alternative that accelerates the resettlement process..

The program realizes an old dream of the *Porto-Alegrenses,* recuperating the balneability of various Lake Guaiban beaches and protecting streams and springs.

The Project is coordinated by the Municipal Secretariat of Management and Strategic Planning (SMGAE) and **Component 1** – Improvement in the water quality of Lake Guaíba – is being carried out by the Municipal Department of Water and Sewage (DMAE), in collaboration with Municipal Environment (WBW), the Municipal Housing Department (DEMHAB), the Department of Storm Sewers (DEP), the Municipal Secretariat for Public Works and Transportation (SMOV), the Municipal Secretariat for Policy Coordination and Local Governance (SMCPGL), the Department of City Planning (SPM), the Municipal Secretariat of Production, Industry and Commerce (SMIC), the Municipal Secretariat of Finance (SMF) and the Attorney General of the Municipality.

RIO DE JANEIRO: PROGRAM "RIO, BICYCLE CAPITAL"

City: Rio de Janeiro
Mayor: Eduardo da Costa Paes
Secretary of Environment: Carlos Alberto Muniz
GDP per capita (2009): R$28.405,95
Area: 1.200,279 km^2
Population (2011): 6.355.949

According to the Municipal Policy on Climate Change and Sustainable Development, the planning of the sector of transport and urban mobility must also incorporate measures for mitigation of GHG emissions, in accord with the goals established for this reduction.

As shown in the March 2011 inventory, the road transport system is responsible for almost 40% of GHG emissions. Thus, in addition to establishing a partnership with the state government, which seeks the redevelopment of urban rail transport, local government, with the conclusion of the Government Strategic Plan for 2009-2012 has aligned the goals of the transport sector with those of the Environment Agency and established the implementation of public transportation by bus will be operated by BRS (Bus Rapid Service) and BRT (Bus Rapid Transit).

This system will operate with frequent buses, automatic ticketing and will include the installation of bicycle parking facilities at the stations. Furthermore, within the buses will be space for transporting bicycles. Considering its high mobility, it will help in reducing CO2 emissions, contributing to the goal of achieving a reduction in the emissions of greenhouse effect gases.

The federal government, aware of the problems arising from poor traffic conditions in Brazilian cities, has established a new approach to solutions that involve *circulation*, whose main focus is on the movement of people and not just on vehicles by establishing the concept of sustainable urban mobility, aimed to stimulate the democratic access to urban space prioritizing public and non-motorized forms of transport, at the same time being socially inclusive and comprehensive. Through the Ministry of Cities the federal government, established the Program "Bicycle Brazil."

For its part, the government of the State of Rio de Janeiro implemented the program "Rio, Bicycle State" developing several actions to encourage, promote and prepare the *Master Plan for Non-Motorized Transportation*, which will be the first in the country.

The Municipality of Rio de Janeiro, in line with the other spheres of government and acknowledging the importance of this public policy, included among the goals in its *Strategic Plan for 2009-2012* the conservation and expansion of its municipal cycle path system, integrating it with other modes of transportation and the implementation of bicycle parking and rental facilities in various parts of the city. For this purpose the city set a goal to double its cycle path network, constructing another 150 km of bicycle paths, to reach a target of 300 km, in addition to implementing bicycle parking and support for cyclists through the program **"Rio, Bicycle Capital"**, estimated to cost approximately 68 million dollars

Photo: J. P. Engelbrecht

The City of Rio de Janeiro, from the late 80s, has gradually been implementing cycle paths and lanes, taking the lead in Brazil in the number of kilometres of paths/lanes implemented and second in all of South America.

If initially the focus of the establishment of cycle paths was leisure-oriented, today's actions are aimed primarily to promote the use of bicycles as a mode of transport for medium and short distances and nurture the mass transport system.

In this way, from 2009, the cycle paths now have implemented this feature. As an example, the *Path Integrator* of the city´s West, with 21.5 kilometers in length, which went to support the rail system and complement the existing cycle path system of the region – linking the districts of Santa Cruz and Campo Grande. Already in Jacarepaguá, new cycle paths and lanes implemented are aimed to support the Bus rapid transit service (BRT) that will circulate the *TransCarioca*.

Photo: J. P. Engelbrecht

The other routes implemented or in the execution phase follow the same concept and have been defined with the participation of the Working Group – GT Bike Lanes (Decree No. 30.629/2009), where many municipal agencies as well as organized civil society organizations are represented with the purpose of coordinating studies and proposing standards and measures to encourage the use of bicycles as an alternative non-polluting means of transportation.

As a result, since 2009 about 120 km of new bike paths, bike lanes and lanes of shared transit have been created and until March 2012 the network totals 270 km.

Over the past 20 years we have seen the increase in popularity of cycling in the city, and today about 4% means of transport for short and medium distance – about a million trips per day – are made on bicycles, whose number of users already exceed those of trains and ferries. According to the Pereira Passos Institute (IPP), 2.7% of the city´s population uses the bicycle for transportation.

Integral to the cycle path system, bicycle parking is critical in the process of increasing the use of bicycles and encouraging use of this mode of transport. Thus, the Municipal Secretary of Environment allows for the implementation of bike racks, placing them within the scope of the works they carry out and installing them in public spaces along areas of greatest demand and is encouraging private initiatives whereby companies or individuals, on their own initiative, may install these devices provided they obey the rules and obtain the necessary permission from public authorities via the email address ciclovia@pcrj.rj.gov.br

In this sense, through specific legislation, the city has simplified procedures for obtaining permission to install bike racks in public places and created two basic models of easy implementation and maintenance.

The city also maintains a regular program of environmental education that develops educational campaigns to encourage, clarify and encourage bicycle use.

Photo: Eliane Carvalho

In addition to activities related to the program "Rio, Bicycle Capital ", the Municipal Secretary of Environment, with a view to Olympic Games in 2016, aims at elaborating a specific plan for the bike path system in order to support the mobility system between and within the Olympic zones taking into considering the array of projects for the Olympics.

The city also aims to address the bike rental system that in the first phase already deployed 60 stations with 600 bikes for hire in the South Zone and is planning a second phase with the establishment of over 240 stations and 3,000 bicycles, broadening the area of coverage to other areas of the city, such as the city´s Centre, Tijuca, North Zone, Barra and Jacarepaguá.

Another goal is to give continuity to the implementation to the designated cycle routes/paths or "30 km zones," in partnership with the Municipal Department of Transportation and Traffic Engineering Company (CETRio). In public spaces thus identified the slowdown will be accompanied by additional measures such as introducing "speed tables" and other specific traffic calming devices and signals, making traffic safer for both cyclists and pedestrians.

SÃO PAULO: TRANSPORTATION AND AIR QUALITY

City: São Paulo
Mayor: Gilberto Kassab
Secretary of Environment:
Eduardo Jorge Martins Alves Sobrinho
GDP per capita (2009): R$35.271,93
Area: 1.523,278 km^2
Population (2011): 11.316.149

The Inventory for emissions of Greenhouse Gas of the city of São Paulo from 2005 shows that 75% of the emissions originate from energy use, and of these, 90% comes from the use of fossil fuels[1]. The inventory has guided the actions of São Paulo's city hall to minimize and mitigate emissions in various sectors since then.[2]

In São Paulo, vehicle emissions are the largest source of greenhouse gases emissions, and also the largest source of pollution, with effects on the health of the city's population.

According to research by Professor Dr. Paulo Hilario Nascimento Saldiva from USP Medical School[3], in São Paulo air pollution costs, considering the admissions in the National Health System (SUS), from R$ 180 to R$ 200 million per year. If we multiply this value by three (R$ 600 million), we have the number collected by SUS plus the number of its associated networks. If we add to this sum early mortality, which accounts for the loss of the value of productive years, this cost exceeds R$ 2.5 billion.

In 2009 the Municipal Law of Climate Change was established (Law no. 14,933), This law is responsible for indicating strategic guidelines for the various sectors of the city, leading the city hall to make environmental issues a line of conduct of their actions in several areas.

This Law establishes as main objectives: for the transportation sector to prioritize the use of public transportation; prioritizing the use of new energy sources, prioritizing renewable fuels and clean energy; implementing measures to gain energy efficiency and expand the intermodal integration. The quality of vehicles is also important, especially for fleet renewal incentives in public transportation and inspection of vehicles' technical conditions on the streets. The Environmental Vehicle Inspection Program which is mandatory for the entire fleet licensed in the city of São Paulo, also contributes to the objectives of this law.

The Environmental Vehicle Inspection Program was initiated in 2008 by the diesel fleet – the most polluting – and extended to the entire fleet licensed since 2010. Regarding the effects on health, according to data from USP Medical School, with a 7.0% reduction in emissions (considering the impact caused by the vehicles fueled by diesel which were inspected), the estimated annual reduction is of 252 deaths, 298 hospitalizations and R$ 5,193,210.00 in expenditures on health systems (public and private).

It is estimated that, with the inspection, about 1 million vehicles that use the Otto cycle engines were removed from the streets. The calculation of the impact of this reduction in Otto fleet is currently being calculated in the study of the Medical School of USP.

FLEET	INSPECTED IN 2010		INSPECTED IN 2011	
Automobiles	2.662.482	(68,32%)	2.718.859	(69,77%)
Motorcycles	266.205	(46,91%)	268.188	(47,26%)
Diesel	55.018	(61,75%)	59. 761	(67,07%)
Buses	20.961	(67,46%)	19. 942	(64,18%)
Trucks	58.816	(49,09%)	53.279	(44,47%)
TOTAL	3.063.482		3.120.029	

The Ecofrota Program, implemented by the Department of Transportation of the Municipality of São Paulo, is currently working on tests for renewable fuels and technologies to promote the substitution of diesel in the public transportation fleet. The Municipal Law of Climate Change establishes that fuel sources will be exchanged from diesel to fossil fuel in this entire fleet by the year of 2018.

The city fleet consists of about 15,000 buses. Of this total, 2,676 vehicles are testing these new technologies and fuels (16% of the fleet). The Department of Transportation is expanding its fleet of trolley buses and evaluating the use of hybrid electric vehicles, dual fuel (ethanol and diesel), electric vehicles (battery) and hydrogen cell fuel vehicles. The renewable fuels that are in use are biodiesel at 20%, ethanol and sugarcane diesel.

The reduction of emissions is already measurable:

	2011	2012
Emissions Reduction (%)	6,3	9,5
CO_2 (%)	6,7	9,2
CO_2 (tons/month)	7.835	10.735

t is possible to follow this process in the City Hall website, via the Department of Transport's website. The reduction of emissions can be followed in the so-called "emissômetro", which indicates the rate of pollution reduction achieved with the renewal of the bus fleet system for public transportation in São Paulo. These numbers, which change every second, represent the total environmental gains that are achieved by reducing the emission of pollutants in the atmosphere since 2006. [4]

YEAR	REDUCTION OF POLLULANTS
2006	420 tons
2007	1.109 tons
2008	1.801 tons
2009	2.793 tons
2010	3.280 tons

These initiatives that are aligned today were considered in the drawing-up of the so called "Plano de Controle da Poluição Veicular" (PCPV)[5] from April 2011(which caters to what was established by CONAMA Resolution 418/09) and has been showing efficiency in regard to the reduction of emissions of greenhouse gases and pollution, impacting human health.

1 A new Inventory for emissions of Greenhouse Gas in the city of São Paulo is being elaborated. The summary of the 2005 inventory can be accessed at: http://www.prefeitura.sp.gov.br/cidade/secretarias/upload/sintesedoinventario_1250796710.pdf

2 To know more about the actions of São Paulo's city hall go to: http://www.prefeitura.sp.gov.br/cidade/secretarias/meio_ambiente/publicacoes_svma/index.php?p=11872

3 "Health and Environment: The Challenge of the metropolis." Organization Saldiva and Evangelina Paul M. A. Pacheco Araujo Vormitag. ExLibris Integrated Communications – São Paulo, 2010.

4 http://www.sptrans.com.br/sptrans_acao/emissometro.aspx

5 The PCPV of the city of São Paulo can be found in: http://www.prefeitura.sp.gov.br/cidade/secretarias/upload/chamadas/pcpv_integra_1300978779.pdf

VITÓRIA: EDUCATION FOR SUSTAINABILITY

City: Vitória
Mayor: João Carlos Coser
Secretary of Environment: Sueli Passoni Tonini
GDP per capita (2009): R$61.790,59
Area: 98,506 km^2
Population (2011): 330.526
Coordenadora do Programa Vitória Sustentável: Maria Luiza Grillo
Coordenadora do Projeto Mangueando na Educação: Juliana Conde

1. SUSTAINABLE VITÓRIA

Presentation: Sustainable Vitória Program is under the responsibility of the Executive Committee of the PMV, formed by Executive Secretaries of all departments and monitored by the Environment Committee, composed of Municipal Secretaries.

Its guideline is to raise awareness of public servers, managers or not, to environmental issues and to employees who are part of the institution encouraging changes in their daily habits regarding waste of consumables (paper, cups etc.) electric energy and water as well as encouraging participation in the correct disposal of residues and the use of sustainable procurements in the PMV contributing in this manner to an improvement in the quality of life in the work environment.

It is a voluntary action that requires individual and collective engagement. It starts from the personal and professional commitment and willingness to incorporate the concepts advocated here regarding the changing of habits and dissemination of the program.

Objective: To incorporate sustainability principles in daily activities undertaken by managers, civil servants and collaborators in order to save resources and reduce institutional costs through rational use of public goods and appropriate waste management.

Expected results: Signing of a declaration of compliance for the Environmental Agenda in Public Administration (MMA), effective for 05 years, starting on May 20, 2011; perform 1 (one) event to launch the Program with a space for the signing of the term, conduct 12 launches of the Program in Departments of the PMV, officially create 1 (one) Management Committee of the Program, develop 1 (one) public relations plan to promote the program; Utilize only images of PMV workers to promote the program; answer 100% of the requests for presentations to other agencies and sectors outside the PMV, reduce by 70% the consumption of disposable cups (200ml) in the PMV; Distribute permanent and personalized mugs to 100% of the employees, implement, initiate and monitor the a recyclable garbage disposal system to 100% of the headquarters buildings of Secretaries of PMV, create participation of 40% of the employees of the PMV in educational actions about recyclable garbage disposal systems, reduce by 40% the consumption of A4 paper, use 100% recycled paper prints for the PMV, create 1(one) unit called: "Manager of Municipal Energy Efficiency", reduce spending by 25% on water; reduce spending on electricity by 20%; Include sustainability criteria in 100% of notices of procurement and contracting services for the PMV.

Photo one: Campaign photo of the Program

Photo 2: A group of environmental educators in the field

2. PROJECT FOR EDUCATION IN MANGROVE AREAS: "MANGROVING" IN EDUCATION

Presentation: The Municipality of Vitória, ES has around 11km^2 of mangrove areas distributed in the Municipal Ecological Station of Lameirão Island, Municipal Natural Park Dom Luis Gonzaga and other remnants. These areas are of great importance for maintaining the quality of life of the population. Their importance lies on their scenic beauty, natural resources, which provide living conditions for many families and the strong cultural influence in the State. Given this scenario, SEMMAM developed the project "Mangroving in Education" through a menu of ongoing activities and procedures. The project is based on legislation that provides subsidies for the government to act in favor of the preservation of this ecosystem.

Objective: Increase the level of awareness of the population regarding the importance of preserving the mangrove ecosystem, taking into account their ecological, social, scenic and cultural activities through socio-environmental, playful and educational activities that involve schools and communities from the Municipality of Vitória.

Steps and implementation period: Beginning of 2007 until the present date.

Participation of the population: Students of all levels of education, teachers, organized groups, patrons and owners of bars and restaurants, institutions involved directly or indirectly to the subject; crab collectors, potters, seafood / crab cutters; "casqueiros"; fishermen, among others.

Photo 3. Puppet theater "Mangrove friends".

Photo 4. Delivery of the letter written by students of the Jacyntha Ferreira Municipal Center for Children's Education to be presented at the Rio+20. Presence of the Secretary of Environment Sueli Tonini.

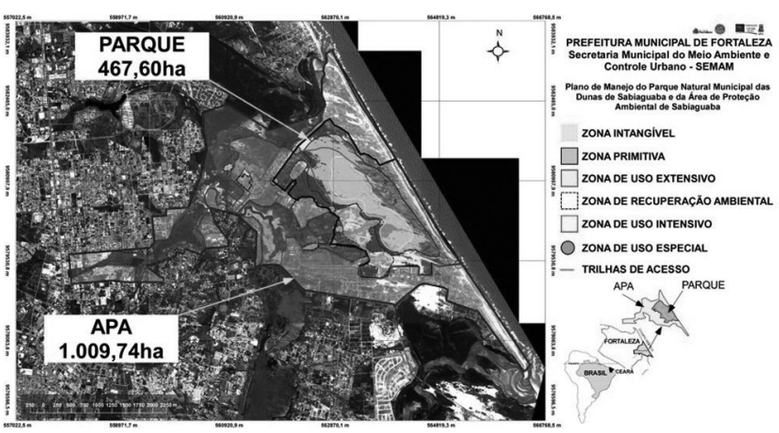
FORTALEZA: SABIAGUABA DUNES MUNICIPAL PARK AND ENVIRONMENTAL PROTECTION AREA: ENVIRONMENTAL SERVICES AND URBAN PLANNING

City: Fortaleza
Mayor: Luizianne de Oliveira Lins
Secretary of Environment: Adalberto Alencar
GDP per capita (2009): R$12.687,50
Area: 314,927 km^2
Population (2011): 2.476.589

The Sabiaguaba Dunes Municipal Park and the Sabiaguaba Environmental Protection Area represent Conservation Units defined under the Conservation Units National System (SNUC, act nº9985 of July 18th 2000), instituted by decree and signed by the mayor of Fortaleza, Ms. Luizianne Lins. Such Conservation Units (CUs) constitute an exuberant set of environmental units and preserved urban areas conserved by specific public policies integrated to the city, enhancing socio-environmental services of ecosystems and, from an equity perspective, having great popular participation and social function of the property.

Located between the estuaries of rivers Cocó and Pacoti, they protect the splendor of the most complex environmental system in the city's coast. They are associated with a group of lagoons, with the diversity of plants and animals in the mangrove, with the continuous flow of fresh underground water which helps physical and biochemical reactions of both estuaries, with both the fixed and the moving dunes and the sandy beach stretch and rocks; they represent a strategic source of spring water and act as regulators of the accumulation of sediments on the beaches, avoiding the settlement of continuous erosive processes.

Its environmental components ameliorate the city climate with the winds channeled through the river valleys and dampened by the coastal lagoons and estuaries, directed towards the city of Fortaleza and therefore contributing to the continuity of a pleasant ocean breeze. It is a diversity of natural and social components interconnected by the flows of matter and energy – hydrosphere, lithosphere, atmosphere,



biosphere and society – as a synthesis of worldviews connected with the evolution of complex environmental systems and filled with socio-environmental functions characterized by traditional communities.

Biodiversity is directly related to the quality of ecosystems that still resist to real estate speculation. This magnificent complex of coastal landscapes is full of archeological records that prove the existence of a pre-historical society that inhabited the coast of Ceará.

Protecting such rich complexes by creating conservation units was a demand made by society, which was worried about the voracity with which permanent preservation areas were being appropriated by the construction industry and the historical ineffectiveness of public policies regarding conservation, preservation and recuperation of urban ecosystems. Therefore, social movements, entities of society, environmentalists and many public management institutions had a direct participation in the process of creating both the Park and the Environmental Protection Area of the Sabiaguaba Dunes. When included in the Participative Master Plan of Fortaleza, they were consecrated as areas of important socio-environmental interest to the city. These evident manifestations demonstrated the need to reverse a socially unequal appropriation process of access to environmental protection.

With their management plan, drafted and approved in the Environmental Council of Fortaleza, the many civil society entities, community representations and governmental agencies involved with the environmental, social and cultural discussions, participated thoroughly and are currently represented in the Management Committee. The plan was developed by a team of technicians who for years have been developing research activities on the scope of preservation units and structured in such a way as to consolidate diagnosis-synthesis (with interdisciplinary reports divided by sectors) to subsidize the management and inspection procedures by the management body represented by SEMAM (Secretaria Municipal do Meio Ambiente e Controle Urbano de Fortaleza[6]).

The methodology developed to formulate the management plan ensured extensive participation of the society in each stage (planning seminars, fieldwork, monitoring proposals and recovery of degraded areas and Public Use Plan), to effectively guide the implementation of achievement strategies of the management plans drafted.

The integration of the research team with the local community and technicians from the many institutions allowed for deeper technical and scientific learning, as well as the necessary connections between traditional knowledge and community know-how, in order to detail the actions in each of the defined zones and, thus, reach elevated levels of socio-environmental sustainability, preservation, recuperation and conservation of natural and urban systems.

The complexity of the set of preserved ecosystems helped to define services and environmental functions for the local communities and the city of Fortaleza. Therefore, the CUs represent ecological,

Participatory Workshops	Coordination	Date	Address
Launch of CUs activities	Research and technical team of SEMAM and CEPEMA	05/06/2010	APA Tents and Youth Camp
Methodology and sectorial actions	Research and technical team of SEMAM and CEPEMA	16/10/2010 at 8:30 a.m.	Rua Miriú, 500 – Sabiaguaba
Youth	Luciana Campos, Paulo Campos, Jeovah Meireles and SEMAM technicians	19/10/2010 at 2:30 p.m.	Rua Miriú, 500 – Sabiaguaba
Institutional	Jeovah Meireles, SEMAM and CEPEMA	21/10/2010 and 17/11/2010	Departament of Geography of UFC and Hotel
Horticulturists	Edson Vicente da Silva and SEMAM technicians	26/10/2010 at 2:30 pm	Sabiaguaba Hortas
Commerce and services	Josael Lima, Henrique Frota, Eustógio Dantas and SEMAM technicians	28/10/2010 at 2:30 pm	Rua Miriú, 500 – Sabiaguaba

geoenvironmental, socioeconomical, archeological, social and cultural structures to consolidate a city in its path to sustainability.

These were oriented in a way to comply with the recommendations of the "Projeto Orla de Fortaleza"[7] and to constitute the Ecological District of Sabiaguaba. As a result, the city of Fortaleza, through the CUs of Sabiaguaba, is included in a regional and transnational context to elaborate environmental indicators, with the objective of accomplishing what has been called the Green Factor (Gf)

The Gf represents a sequence of weighted indexes developed according to environmental standards guided by the environmental functions and services of each component of the CUs. The objective is to consolidate (and broaden) the actions and measures proposed by the management plan. The diversity of scenarios in which it is possible to apply the existing normative instruments expands with the institution of the Gf. However, it is an element which induces environmental synthesis for licensing, taking into account environmental aspects in different areas of influence in the projected and existing actions in the Sabiaguaba Environmental Protection Area.

The Sabiaguaba Park and Environmental Protection Area, included in the Agenda 21 of Fortaleza, in the "Projeto Orla" and in the Master Plan, represent a legitimate instrument of societal ownership, consolidating a fundamental stage to guide a new culture of sustainability. Thus, definitely, the coastal landscape will not be treated as another place for the commodification of its ecosystems, but one to effect an instrument of social and environmental justice that will act on the collective management and contribute to a city that is truly sustainable.

RECIFE:
PROJECT OF REVITALIZATION AND/OR IMPLEMENTATION OF GREEN AREAS

City: Recife
Mayor: João da Costa Bezerra Filho
Secretary of Environment:
Marcelo Augusto Rodrigues da Silva
GDP per capita (2009): R$15.903,18
Area: 218,498 km^2
Population (2011): 1.546.516
Project Coordinator: Sérgio Lira – Licensing manager
Team: Environmental Development Analysts of GLA/SEMAM

1. INTRODUCTION

Recife is a city of great importance in the political, historical and cultural scenarios of Brazil. It is 218.498 km^2 (87.17 sq mi) in size and home to 1,537,704 people, with a per capita income of R$ 894.00 (Census, IBGE 2010).

Building a new model of sustainability and harmony between the natural environment, the modernization of the infrastructure and real estate expansion is a challenge that requires feasible legal instruments which allow for the involvement of the entire population in reaching a better quality of life.

As a result of this increasing development, there is a need to elaborate a legal tool to instrumentalize the process of restoring and perpetuating the vegetation in the city. This tool should cater both to the demands of the private sector, mostly for real estate expansion, as well as to the demands of society for the conservation and preservation of the environment.

In this perspective, The Municipal Code of Environment (CMMA) defined the Sectors of Environmental Sustainability, located in Permanent Preservation Areas, regions of special interest for the maintenance of the city's environmental quality. To control and compensate the urban expansion process in these areas, the "**Project of Revitalization and/or Implementation of Green Areas (PRAV)"** was conceived. Its objective is to provide environmental compensation and compatibility between urban expansion and the restoration of natural areas and the planting of native forest species.

In this summary, the stages of execution of PRAV will be presented, as well as the environmental benefits and the expected results from the use of this tool. With this, we will demonstrate the technical viability of this tool for environmental management adopted by the city of Recife, combining urban development and environmental sustainability.

2. STAGES FOR EXECUTION OF PRAV

PRAV is required when an enterpriser formally requests a license to intervene in a Permanent Preservation Area within the Sector of Environmental Sustainability of the city.

The procedures for the approval and execution of PRAV are divided in three stages:

1) Area approval – a collective decision of the place where the revitalization project will be implemented, made between the interested party and the Department of Environment.

The definition of the area to be revitalized varies according to the size of the intervention by the development. Chart 1 refers to the area size each enterpriser must recuperate.

Chart 1. Area size to be revitalized

TOTAL CONSTRUCTED AREA	AREA TO BE REVITALIZED
Up to 70 m^2 (753.47 sq ft)	Same area of construction
From 70 m^2 (753.47 sq ft) to 200 m^2 (2,152.78 sq ft)	Double the constructed area
Over 200 m^2 (2,152.78 sq ft)	Double the land side

In order to calculate the area to be revitalized, it is necessary to consider:

- **Soil in natural state** – the calculation must be made with the polygonal area which defines the patch to be revitalized;

- **Impermeable soil** (paved, covered, etc.) – the calculation must be made with the amount of vegetation to be planted, according to the size of forestation.

- The omitted cases are settled by the technicians in charge of the process;

2) Project approval – after the area has been approved, the applicant must present their project to SEMAM to be analyzed by the technicians. The construction permit will only be issued by the urban licensing office after the approval of the PRAV.

3) Attest the enforcement of PRAV – After the project is approved, the applicant must execute the PRAV as presented, rigorously respecting the determined schedule, which must include a maintenance program of at least one year. The occupancy permit will only be issued by the urban licensing office after this certificate by SEMAM.

3. PRIORITY AREAS FOR LOCATION AND EXECUTION OF THE PRAVS

1) Margins of water bodies and streams;

2) Public green areas in natural environment zones (ZAN), Municipal Conservation Units or Parks;

3) Urban trees in public walkways, squares or retreats.

4. SUPPORT TOOLS FOR THE EXECUTION OF PRAVS

- **Afforestation Plan for the City of Recife:** Through the Planning and Planting Project, likely areas for the implementation of PRAVs were gathered. The program determines the potential for planting in priority afforestation areas, as well as the forest species recommended in each situation and the technical procedures to be adopted, from the collecting of seeds to the maintenance of the seedling after the definitive planting.

- **Poles of Environmental Education Experience (PEAVs):** spaces devoted to raising awareness and promoting the participation of the population in the process of planning the execution of the projects, especially those to be done in squares, parks and public areas.

5. EXPECTED RESULTS

- Reduction of environmental liabilities caused by real estate expansion in the Sector of Environmental Sustainability through the restoration of degraded areas, reduction of tree deficit, recovery of Permanent Preservation Areas, revitalization of squares and parks and creation of new green areas;

- Benefits to the population's quality of life, embellishment of the city, shade, reduction of temperature, increase in soil permeability, prevention against floods and the appearance of urban heat islands.

Moreover, as an immediate effect, it is possible to estimate a contribution of 78.86 hectares of green areas in the city of Recife resulting from 78 PRAV processes in progress at the Department of Environment.

6. FINAL CONSIDERATIONS

Based on the accumulated experience up to this moment, it is already possible to consider the PRAV as a viable tool for environmental management. Its results are translated into the improvement of the environmental quality of the city and life of the population. To this effect, it is worth noting that one of the main positive aspects of this tool lies in converting private resources into common benefits. This fact can even be used as a marketing strategy by the participating companies.

SÃO LUÍS:
URBAN BLITZ: INTEGRATED SURVEILLANCE MODEL

City: São Luis
Mayor: João Castelo Ribeiro Gonçalves
Secretary of Environment:
Afonso Henriques de Jesus Lopes
GDP per capita (2009): R$15.381,99
Area: 834,780 km^2
Population (2011): 1.027.429

SUMMARY

The Urban Blitz acts in the capital with the intent to supervise and reorganize urban planning, as well as integrate and improve supervision and inspection capacities by municipal administration. It works side by side with other administrative sectors to make sure every municipal law is in order when it comes to powers the actors involved may have.

HISTORY AND AGENCY

Created in January 2011, through the Statute #38873, Urban Blitz, an administrative organ connected to the Municipal Secretariat of Urbanism and Habitation (SEMURH), is in motion since April of the same year and has as its main function promoting the integration and improvement of supervision and inspection capacities by the Municipal Administration sectors of São Luis, with the intent of providing the population with better conditions to fulfill their rights as citizens.

Its work is based on the following laws: #1790, May 12th 1968 – relative to the Municipal Posture Code; #033, May 11th 1976 – relative to the Works Code; #4590, 11 January 2006 – Law of Walls and Sidewalks; as well as #4653, August 21st 2006 – relative to the Great Generators of Solid Residue.

The Urban Blitz Works side by side with other municipal secretariats, such as: Environmental Municipal Secretariat, Works and Public Services Municipal Secretariat, Citizenship and Safety Municipal Secretariat, Financial Municipal Secretariat, Transportation Municipal Secretariat, and Health Surveillance Municipal Secretariat, as well as other organs in different political spheres (Public Ministry, Federal Police, Civil Police, Military Police, Fire Department) whenever needed.

The Urban Blitz supervises and inspects all public and private works in the city, as well as the diligence in obeying the municipal law relative to the involved organs

The supervision activities are developed daily by a multidisciplinary team formed by urban inspection professionals, engineers, and environmental inspection professionals, aided by 36 specialized transport units equipped with monitoring and communication systems.

The main activities developed by the supervision agents, monitored and coordinated by the Posture and work inspection superintendence are:

- Seizure of large and medium-sized animals;
- Works inspections;
- Informal commerce inspections;
- Seizure of unauthorized street signs;
- Clearing of streets, sidewalks and passages;
- Supervision and seizure of wastelands;
- Inspection of events, making sure that all laws regarding licensing, authorization, location, installation and duration are being enforced;
- Response to complaints;
- Response to demands coming from the Public Ministry, etc.

Daily inspections happen in two shifts and are divided in 16 sectors to optimize the agents' job. Besides the external inspections for which the agents are responsible, the organ also provides a free call center (0800) system to intensify productivity and respond promptly to the population's needs. With this system in place, the citizens can help uncover irregularities, contributing to the establishment of order in public areas and better conditions to the work developed by the city's administration. In just its first year since inception, the organ has already received over two thousand helpful calls from citizens.

Recently, Urban Blitz started to seize empty and abandoned lots of land which were being used as wastelands and hiding places for criminals. The action, which is still ongoing, intends to enforce law 4590/06. According to law, every landlord in São Luís, whether the land is constructed or an empty lot is under the obligation to put up walls and sidewalks. Since the beginning of the project, over 100 land lots have received signs warning about the seizing process and almost 500 are about to receive the same treatment. Many landlords have already contacted the organ to make their situation regular.

It's important to remember that the partnership and the investment of the variety of involved organs in the upcoming projects will certainly result in the reorganization of public space, benefitting the community, which is the reason of the existence of the State apparatus.

TERESINA: THE LAGOAS DO NORTE PROGRAM

City: Teresina
Mayor: Elmano Férrer de Almeida
Secretary of Environment:
Deocleciano Guedes Ferreira
GDP per capita (2009): R$10.841,20
Area: 1.391,974 km^2
Population (2011): 822.363

PRESENTATION

The Lagoas Do Norte Program, or Northern Lagoons Project (PLN in Portuguese) represents a combination of integrated, intersectoral initiatives, that are currently being carried out by the Teresina Municipal Prefecture (TMP) with financial support from the World Bank in partnership with the Federal Government (PAC). PLN´s primary objective is to promote the improvement in quality of life for the 100,000 (mostly poor) inhabitants of 13 suburbs in the northern part of the city of Teresina. The focus of the program´s initiatives is predominantly on environmental, urban, social and economic areas.

The Program is indicated in a series of records, showing its insertion in the current Municipal Government´s policies, based on the *Local Agenda 21 for Teresina* blueprint, a planning instrument that follows the recommendations from the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992.

The Northern Lagoon Region is a region of spectacular natural beauty, with nine lagoons, several pockets of diverse vegetation, natural canals, as well as being the location of the confluence of the Parnaíba and Poty rivers – forming a bucolic refuge of rare beauty. The region also stands out for being the "birthplace of the city," i.e. the site of its foundation, where to this day traditions are maintained and cultural events related to this important event can be seen.

However, over the years, reflecting the disorderly occupation, the region has begun to show serious social and environmental problems. In the rainy season, rainfall and overflowing from the Parnaíba and Poti river-beds make the ponds/lagoons and low areas prone to flooding, causing grave consequences for residents. Furthermore, there is continuous pollution of the lagoons and surrounding areas due to disorderly occupation and the consequent garbage and sewage that is discarded by its population. The result is that this area is unfit for human habitation, as well as causing serious environmental degradation, widespread poverty, crime and low self-esteem for its population. It is noteworthy that the region is only 6 km from the city center.

Due to space restraints in the this paper, we will highlight in a summarized form just some of the topics of the program´s scope with emphasis on the interventions related to environmental, social and urban planning problems, which are of greatest interest at this event. More detailed information may be requested via e-mail to ugplagoas@gmail.com.

RESOURCES

The program consists of R$100 million in investments, of which R$70, million is financed by the World Bank and R$30 million constitutes counterpart funding from the Prefecture and Federal Government through means of PAC (Federal Government Program for Accelerated Growth).

IMPLEMENTATION PERIOD

The period for implementation of program is five years, comprising period between October 2008 and June 2013. After some initial delays arising from the implementation process and development of technical studies, works only effectively began April 2010.

OPERATION

For operational purposes, the PLN is structured into three components as follows:

1) Urban and Environmental Development of Northern Lagoon Region, with funding amounting to U.S. $ 82 million,

2) Social Development, with $ 10 million and

3) Modernization of Municipal Management, with $ 8 million. The area covered by the program (1,400 ha) is divided into four phases. To date, 50% of planned works of first phase have been completed.

The Urban Development and Environmental Component is the central focus of the program, through which interventions are being performed contributing directly to solving environmental and urban problems mentioned, including:

- **In the environmental area:** implementation of critical interventions of micro and macro drainage; actions to restore the environmental aspects of the region's natural lagoons, networks of canals and the Parnaíba and Poti river banks, including the dyke; monitoring of water quality, revegetation control and the protection of wildlife.

- **In the urban area**: construction of a linear park (North Lagoons Park), including interventions with landscape rehabilitation and construction of green areas, theaters and public spaces for recreation and sports; interventions to improve the road system, including traffic flow, access and safety improvements in bicycle traffic, construction of cycle paths and cycle lanes and the resettlement of families in flood risk areas, complemented with housing improvement works.

- **In the area of sanitation**: Deployment of collection systems, transportation and sewage treatment to meet 100% of households (6,000) and interventions to optimize and expand the water supply system, expected to cover 100% of the population.

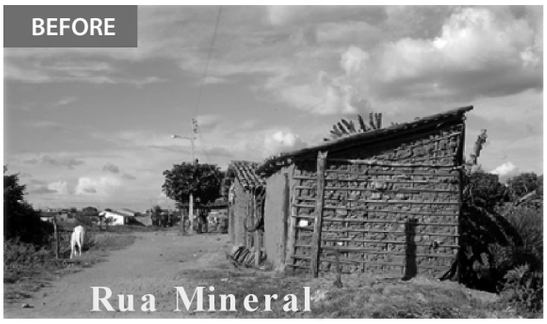
In the context of **Component 2** actions of mobilization and organization are being carried out together with environmental education, works on sanitation and development of areas for the realization of sports and cultural events in order to stimulate the public oversight of park and sustainability of public facilities installed.

Finally, as part of **Component 3**, actions are being implemented to modernize the Municipal Administration, including studies and strategic projects in the areas of sanitation, drainage and solid waste, among others.

MANAGEMENT

The program is being run by a Project Management Unit (PMU) and a Social Project Unit (UPS), both linked to the Municipal Planning PMT. Both units have interdisciplinary technical teams and UPS plays a crucial role in the areas of social communication, counseling, mobilization of community organizations and ongoing education and orientation for beneficiaries. Much of the acceptance and community involvement in the program can be attributed to the remarkable work carried out by the team of social workers, which has been embedded in the scope of the program, thus enabling accessible, direct and permanent contact with the beneficiaries.

Below are a few fotos to illustrate the PLN interventions.



CAMPO GRANDE:
CLEAN STREAM, LIVE CITY: SUPERFICIAL WATERS QUALITY MONITORING PROGRAM

City: Campo Grande
Mayor: Nelson Trad Filho
Secretary of Environment:
Marcos Antônio Moura Cristaldo
GDP per capita (2009): R$15.422,30
Area: 8.092,966 km^2
Population (2011): 796.252

Campo Grande had its urban development historically marked by the occupation of the streams margins, as a function of the abundance of water. With the rural migration, the municipality has seen in the past decades an intense population growth, of which 98% of the municipality's population is nowadays in urban areas, further forcing pressure on water resources, making these more susceptible to pollution by the inadequate deposition of sewerage and other types of residue.

The inadequate infrastructure associated with the lack of awareness of the inhabitants is both a real problem and a potential one: the scarcity of water not only in quantity, but principally – in quality.

The municipality of Campo Grande is a ridge, whose streams feed two important river basins in the country. Most of Campo Grande's territory sits within the Paraná River basin and its territory also stretches northwest to a small part of the Paraguai River basin.

In Campo Grande, the 33 streams and the Anhanduí River have their water quality checked regularly through the implementation of a monitoring network, which constitutes the program "Corrego Limpo, Cidade Viva" (Clean Stream, Live City). Implemented on March 2009 and executed by the Municipal Department of Environment and Urban Development[1], in partnership with the company "Águas Guariroba" and the Catholic University Dom Bosco, this project has as its objective to manage the quality of the urban streams in the municipality of Campo Grande.

The city has eleven micro watersheds.

Launching of the program in 2009.

Table 1. Category and IQA Levels

Category	Level
Very Good	79 < IQA ≤ 100
Good	51 < IQA ≤ 79
Regular	36 < IQA ≤ 51
Poor	19 < IQA ≤ 36
Very Poor	IQA ≤ 19

To establish the monitoring network, the sites of analysis were strategically chosen, choosing places where there are enterprises located and illegal sewer lines that eject wastewaters in the streams. On these sites, water samples are collected quarterly to be analyzed in laboratories.

The results obtained go through an mathematical calculation and are thereby transformed into an index, the Water Quality Index[2], which is interpreted comparing the result to a number scale and, according to the value, indicates if the water is: terrible, bad, regular, good or great.

The Water Quality Index intends to summarize and unite the information about water quality in a way that is practical, efficient and useful. This index aggregates some specific parameters and sorts the water quality, enabling easy interpretation.

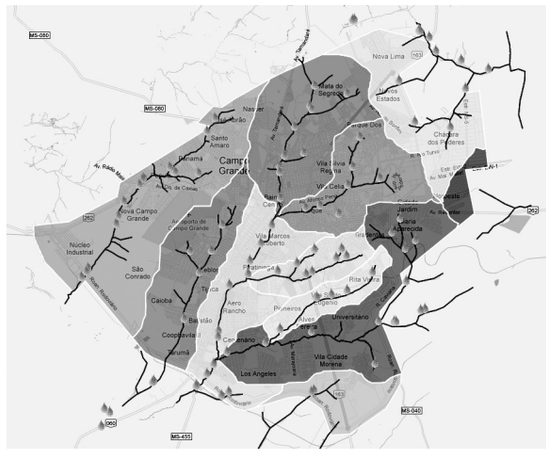
An index which is being successfully used by many institutions was developed in 1970 by the National Sanitation Foundation, in the United States of America, which was adapted by CETESB (Environmental Sanitation Technology Company), known as IQA_{CETESB}. This index incorporates nine parameters considered relevant to evaluating water quality, having as the main determinant the use of these waters for public supply. These parameters are: dissolved oxygen (DO), biochemical demand of oxygen ($BDO_{5, 20}$), fecal coliforms, pH (Potential Hydrogen), total nitrogen, total phosphorus, temperature, turbidity and total solids.

One way to have an integrated vision of water quality in river basins is having a monitoring network. That is, a set of sampling stations strategically placed in the area of a river basin with the objective of representing the existing conditions and the trends in water quality.

Interactive placards near the streams.

By following the water quality of urban streams, the condition of management of water resources emerges, enabling the detection of which factors are contributing to the decrease of water quality and subsidizing surveillance and depolluting actions in the streams. Furthermore, it allows for the population to learn about the conditions of the city's surface waters. The results also guide the development of environmental education actions, in addition to driving the formulation of public policies.

The results are released on the program's website, on a map of water quality that, in an interactive way, provides information about all the monitored sites and their respective IQA value. It also has interactive placards fixed near the streams, with the objective of further publicizing the quality level in each sampling site. These data are compiled and interpreted annually leading to the publication of a water quality report.



Map of water quality on the website www.capital.ms.gov.br/semadur

As part of the results achieved since the beginning of the program, it is possible to assert that there was an increase on the rate of "good" results. On the average IQA calculated in the period, 72% of the sampling sites showed a tendency for improvement.

Many other actions were executed thanks to the data gathered by the program, reinforcing the importance of managing the environmental resources and promoting the environmental improvement of the city.

1 Secretaria Municipal de Meio Ambiente e Desenvolvimento Urbano, in the original Portuguese.

2 Índice de Qualidade da Água – IQA.

BRASÍLIA: PARK CITY

City: Brasília
Mayor: Agnelo Queiroz (Governador)
Secretary of Environment: Eduardo Brandão
GDP per capita (2009): R$50.438,46
Area: 5.787,784 km^2
Population (2011): 2.609.997

Inspired by the ideals of Lucio Costa, conceived by the Federal District's Department of Environment and Water Resources (SEMARH, in Portuguese) and implemented by the Institute of Environment and Water Resources of the Federal District[13] (IBRAM), the project "Brasília, Park City" aims at building and reviving 69 ecological parks and the 22 protected areas in a sustainable way with the support of public and private institutions.

The innovation in this program consists in the effective use of environmental and forest compensations in all parks of the federal district.

"Brasília, Park City" estimates that approximately R$ 300 million reals will be injected by entrepreneurs in conservation units in the Federal District.

These resources are applied directly by the entrepreneurs most of the time, by means of a license agreement accorded between the institutions, the companies and IBRAM, there being no possibility to transfer these pecuniary resources to the treasury, which makes the use of said resources both more efficient and speedier. Currently, the license agreement already signed with entrepreneurs adds up to about R$ 25 million reals.

The program is now in its development stage and is already showing satisfactory results. In 2011, only two months after launched, infrastructure work started being done in four parks, resulting in an investment of approximately R$ 9 million reals.

In 2012, other units are already being provided services. These units have license agreements signed by the entrepreneurs, amounting to R$ 16 million reals in investments.

COMPENSATORY MECHANISMS

The ventures which, during the process of licensing, are found to cause immitigable effects to the environment must sign a statement of commitment to environmental compensation, which means supporting the implementation and maintenance, as well as the land regularization of conservation units, research and management plans, and other actions.

On the subject of forest compensation, the legal device states that for each individual native tree suppressed from the Cerrado (savannah), the one who is responsible for the suppression is obliged to plant and maintain 30 (thirty) new saplings for the period of time of 2 (two) years. In case of suppression of exotic species of trees the number of saplings to be compensated decreases to 10 (ten).

According to the decree that regulates forest compensations, part of the obligation to plant saplings can be converted to donations of goods, equipment and services in benefit of the environment, until the amount is comparable to that of the plantation and maintenance of the saplings for 2 (two) years, including the costs incurred to its handling.

A part of the converted forest compensations has been designated for the development of parks, while the planting of saplings is showing itself to be a most valuable tool to recover degraded areas throughout the Federal District's territory.

About the environmental compensation, the creation of a specific methodology to calculate de compensation – by means of the publication of the guideline nº 076/2010 – was of fundamental importance for IBRAM to deal with both the regularization of the liabilities, which had not been charged since the CONAMA nº 371 of April 5th 2006, and the processes in their initial phase of licensing.

The method involved in calculating the compensations is what stimulates the use of "green technologies", as they are excluded from the amount of the Reference Value used to calculate the compensation. The investments must be in construction and equipment which is either installed or assembled with sustainable technologies, be it by means of energy solutions, hydraulic or waste, amongst other clean techniques which are not required or regulated by legislation.

There is also a factor that reduces compensations inside the formula related to actions developed by entrepreneurs, spontaneously or pro-actively, in favor of environmental preservation, such as, for example, participation as partner in IBRAM projects or even by registering legal reserves beyond what is required by law.

GOIÂNIA: AGENDA FOR REVERSE LOGISTICS

City: Goiania
Mayor: Paulo Garcia
Secretary of Environment: Mizair Lemes de Oliveira
GDP per capita (2009): R$16.682,49
Area: 732,801 km^2
Population (2011): 1.318.148

With the sanctioning of the National Policy on Solid Wastes, Law 12,305, which spent more than twenty years in the Federal Senate, a series of changes in strategy regarding the management of solid waste began to be devised by federal, state and municipal governments across the country.

In the city of Goiania, capital of the state of Goiás, with approximately 1,318,148 inhabitants (according to the 2011 census conducted by Brazilian Institute of Geography and Statistics – IBGE), the Municipal Environment Agency sought to swiftly adapt to the new law. In addition to updating the Terms of Reference for the drafting of Plans and Reports of Waste Management, the Agency has improved the criteria for environmental licensing of waste-generating activities, and initiated pioneering work in the development of public policies encouraging both popular and corporate participation.

The draft Agenda for Reverse Logistics, promoted by the Goiânia Municipal Environmental Agency, was created in October 2011 with the aim of promoting strategic reflection to create channels for the return of waste to the production sector, thus adding economic and environmental value, as well as providing for enterprises in the sector the opportunity to reflect a good corporate image.

It is understood that social and environmental sustainability is the economic common denominator between the public and private sectors. Hence, we seek to bring together entrepreneurs whose vision of competition for markets sees the importance of strengthening mechanisms to mitigate the environmental impacts caused by waste from their products by focusing efforts to address the problem and get satisfactory results through Terms of Cooperation.

Photo: ASCOM/AMMA. Reverse Logistics Meeting.

Design: ASCOM/AMMA.
Reverse Logistics Meeting Booklet

An important action was the agreement RECICLANIP reached between the Municipality of Goiânia and the tyre industry in 2009 following the creation by The National Environment Commission (CONAMA) of Resolution 416/2009 (to replace 258/99). Following meetings and a deal made between Municipal and industry, the tyre industry provided two voluntary tyre collection points and to develop the activity the Municipal Environmental Agency regulated through means of registering, monitoring and environmental licensing of companies that generate tyre debris.

The result of this public-private partnership was the removal of 4621.71 tonnes of tyres in 2009/2010 and 3934.34 tonnes in 2011 which were previously incinerated without any pollution control or disposed on public roads within the water resources and woodlands of the metropolitan area.

Hence, the Agenda of the Reverse Logistics has become a success story not only by promoting modern management of urban solid waste in the municipality, but also stimulating popular participation and that of private enterprises in the development and implementation of public policies in the capital, which promote the social commitment, because as noted by the philosopher Rousseau, citizens who participate in the development of its laws are more willing to abide by them

LETTER RIO FOR SUSTENTAINABILITY

PREAMBLE

The Group of Brazilian Capitals / CB-27 is comprised of 21 representatives of the capitals' Environmental Departments who assembled in Rio de Janeiro between May 15-18 2012 in order to discuss the sustainable development of the cities and the role of the local administrations in the global sustainability governance;

Considering the rapid depletion of the planet's natural resources;

Considering that the concentration of the population in the cities has created new and important challenges regarding sustainability in urban centers, which are simultaneously spaces of crisis, solutions and opportunities;

Highlighting the importance of local governments in managing the territory, in direct interaction with the communities and in the management of action and provision of critical services to achieve sustainability;

Considering the need to contain the territorial sprawl of urban centers, which affects the balance in ecosystems and increases the cost of providing essential public services;

Considering that the cities' shortcomings of infrastructure result in costly economic inefficiency, decreasing their competitiveness, besides impacting the environment and their populations' quality of life;

Considering that two-thirds of Brazil's Gross Domestic Product are generated in the cities and, as the driving force and stimulators of the economy, they will play a leading part in the transition to a green economy;

Remembering the commitments made by the Nations for the development of cities embodied in the "Declaration on Cities and Other Human Settlements in the New Millennium", approved by the United Nations General Assembly and the "Cities Without Slums" initiative, which aims to improve the quality of life of at least one hundred million people until 2020;

Endorsing the work performed by the United Nations Program for Human Settlements/UN-Habitat and its leadership in seeking more sustainable models of urban planning through close and harmonious collaboration with local authorities,

Reinforcing ties with the C-40 and counting on their increased support and technical cooperation with Brazilian cities, considering the growing responsibility of the cities in transitioning into a more sustainable world;

Saluting Brazil's participation in the "Friends of Sustainable Cities" group, comprised of 23 countries to discuss the cities' agenda in negotiations for Rio+20, and also encouraging the country to exercise its leadership of the group of Nations for the construction of a positive agenda for the cities;

Being aware that the United Nations Conference for Sustainable Development intends to be an "Implementation Conference" and that the local authorities have a responsibility of making voluntary and tangible commitments in this direction;

Stimulated by multiple success cases presented by Brazilian cities in: reduction of greenhouse gas emissions (GGE), solid waste, green areas, water resources, environmental education, among others which demonstrate the proactive role of the local governments and their commitment to building more sustainable communities, and

Highlighting the role of the cities in the process of adaptation to the climatic changes and emphasizing the need for development of this agenda;

DECLARES

It is necessary to advance the integration, on a local level, of the process of a sustainability governance, in an intersectoral way, through the creation and functioning, in a transversal way, of Sustainable Development Councils on different government levels, and through the establishment of a continuous relationship between the global and local spheres in the new institutional structure of the United Nations for global sustainability;

Considering the great scarcity of available resources, it is fundamental to have direct access to them for: strengthening the institutional and operational capacities of local governments, supporting personnel training for the elaboration and implementation of Local Action Plans and Projects, fostering scientific knowledge and technology transfer for sustainable development;

It is important to adopt new parameters for measuring development that can reach beyond the ones currently accepted to form the Gross Domestic Product, since this indicator is insufficient to take into account the social and environmental pillars which support sustainable development, in conjunction with the economic one. It is also pressing the creation of sustainability indexes and of a system of goals, and the production of sustainability reports;

COMMITS

1. To disseminate and support the adherence to programs of sustainable cities which offer tools for the society to indicate to its leaders the future it desires and to watch the performance of the cities in the quest for sustainability;

2. To make a voluntary commitment to organize a social, environmental and economic technology bank of sustainability in Brazilian cities, collecting in a virtual space the ongoing initiatives that demonstrate, in a specific, measurable and verifiable way, what local governments have done for sustainable development in order to increase visibility of the actions and allow their reproduction;

3. To double efforts so that environmental education is treated as a fundamental element in the construction of a sustainable society, incorporating knowledge to review attitudes and values;

4. To pursue, along with mass communicators, the establishment of a positive pact for sustainability;

5. To encourage green infrastructure projects that aim for a better integration of natural and constructed environment;

6. To formulate the technical studies required by the cities' planning initiatives, such as inventory of greenhouse gas emissions, vulnerability maps and inventory of urban biodiversity;

7. To promote biannual meetings, to be held in a capital previously appointed by the CB-27;

RECOMMENDS

To the United Nations and the domestic governments, on occasion of the United Nations Conference for Sustainable Development that:

1. It supports the inclusion, in the Conference's final document, of opportunity windows and implementation instruments for sustainable urbanization;

2. Once the Sustainability Objectives of the Millennium are determined, the Objective of Urban Sustainable Development be included among them;

3. It creates, under the United Nations, open virtual platforms to disseminate information on sustainability integrating international and national communication systems which support the local communication system;

4. It gives the United Nations System a structure of governance for Sustainable Development that balances the environmental pillar with its social and economic structures;

To the Brazilian government that:

1. It establishes a Federal Pact for sustainability that provides for the responsibilities of each federation as well as the necessary resources for its implementation, including the creation of financial funds aided by the taxation of non-sustainable products and services;

2. It encourages public financing that contemplate sustainability criteria in their developments.

Rio de Janeiro, May 17 2012.

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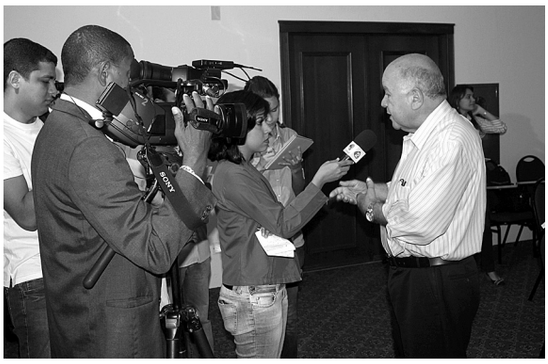
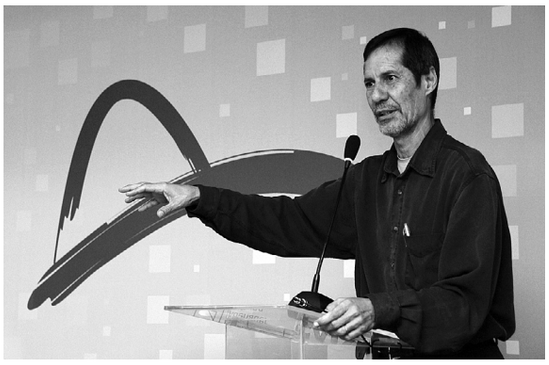
PHOTOS OF THE MEETING OF BRAZILIAN CAPITALS' SECRETARIES OF ENVIRONMENT

Preparatory Meetings



Meeting



This special issue of the Adenauer Books series is dedicated to the topic of sustainable development. The six chapters of this publication address issues such as the participation of Brazil in international discussions about the environment, climatic changes and green economy, the Amazon and inclusion, government procurement and sustainable development, global governance and also projects of the Rio de Janeiro City Hall in sustainability.