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**REPORT**  
2014

# Comparative Study on Metropolitan Governance

**metropolis** ● initiatives



**30**  
YEARS  
metropolis ●

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## PRESENTATION

The new world economic order is structured on a network of cities that in a competitive scenario share the same desire: to ensure good quality of life for its inhabitants, to have good functional performance and ability to attract new investments. The challenge has mobilized governments around the world in the search for solutions to their global metropolises. After all, these are complex places that while concentrate numerous opportunities also generate profound inequalities.

Three years ago, the São Paulo Company for Metropolitan Planning – Emplasa – started to coordinate the Metropolis Initiative on Metropolitan Governance, developing comparative researches and technical works with over 19 partners representing metropolitan regions of Brazil and the world.

As a result, now we present the Study of Metropolitan Governance, focusing on viable alternatives for metropolitan projects.

The material identifies the different international practices and brings the partners experiences and lessons learned related to governance and funding of metropolitan projects. The work is not restricted to a purely theoretical approach of the topic. The idea is to list the practical cases capable of being replicated, with the appropriate adaption, to other metropolitan regions.

Emplasa is a reference public company when it comes to metropolitan planning and has been signing their positioning at the state, national and international scene, getting to know new projects that can improve the already conducted practices and offer their expertise to other regions and countries.

With an active global insertion, Emplasa participated in several Metropolis events presenting our internal projects and the work from the Initiative on Metropolitan Governance. The company is constantly present in other important congresses of the international agenda, such as the World Urban Forum, organized by UN-Habitat, the Congress of United Cities and Local Governments (UCLG) and the Global Compact events.

The opportunity to lead this project since 2011 contributed significantly to the products elaborated by Emplasa. We are delighted to deliver our final study. With the support of the partners involved, Emplasa once again reinforces its role as a generating knowledge Company.



**Renato Viégas**  
**President**  
**São Paulo Company for Metropolitan Planning (Emplasa)**



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## Executive Summary

The paradox which is present in most metropolitan regions is a familiar subject to experts, due to the two faces these regions present. On one side, the metropolises are places of economic dynamism, once they concentrate population and economic activities which are generators of wealth, employment and productivity; and at once they gather urban functions with a high degree of diversity. The so-called “economies of agglomeration” are opportunities which are open to cities and regions, and they contribute to the interconnection of the metropolises with other urban agglomerations - not only within the country, but also in an international context, thus forming a global network of functional interdependencies between cities and metropolitan regions (SOJA, 2000).

On the other side, the intense urbanization process, the heterogeneity of the territorial space and the diversity of the economic status have been generating huge urban challenges such as the increasing pressure towards the provision of basic services, the need for new and improved infrastructures, and the concentration of the great social problems in the metropolitan regions - e.g., the lack of affordable housing, elevated poverty levels, and the environmental degradation.

Given the responsibility taken over by the metropolitan areas in the socioeconomic development of the countries, as well as the responsibility to keep the territory competitive, in a way to attract global companies and to ensure the quality of life of its inhabitants, it is essential that the metropolises, in order to survive, provide actions intended to overcome such challenges.

Challenges such as the urban mobility, basic sanitation, housing, life quality, among others, extend beyond the borders of the local governments, including different judicial and administrative divisions of the territory. These challenges, most of the times, must be faced by more than one city. In order for the interventions to be effective and to yield positive results for the population and for the companies, an action coordinated by several agents



is necessary - including a multisector view with different urbanization levels - to seek for solutions.

Facing that scenario, the project Metropolis Initiative “Comparative Study on Metropolitan Governance” mainly aims to compare and discuss the different strategies performed by cities for the establishment of inter/supra municipal arrangements in the metropolitan areas.

Nineteen metropolitan regions from seven countries took part in the project; and, in a joint effort, the different arrangements for the governance of each region were assessed with a focus on the mechanisms, processes and institutional agreements which support the decision making and the efficiency in the execution and management of complex problems, and efforts were made to understand how the different organizations function in practice. Besides that, the study was focused on the financing of actions for the common good; that is, the analysis of the different financing methods, and the search for the best practices in metropolitan coordination. In that sense, the study is based on the public and private relationships that comprise the preparation, execution and financing of projects. With that, it is intended to contribute to the increase in the knowledge of successful experiences in ways to finance metropolitan projects which may serve as lessons learned, taking into account the differences of each metropolis.

In three years of the study, diagnoses were improved and several financing instruments and mechanisms used by the partners to execute actions and projects were analyzed. Although it is known that there is no unique model which can be reproduced, the mistakes and successes of the reported experiences form a precious framework of lessons learned, which may support the metropolitan financing practices.

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# 01.

## THE METROPOLITAN GOVERNANCE

The accelerated expansion of the metropolitan regions is a phenomenon that is better seen in the 21st century. In 1990, less than 40% of all population lived in a city; however, from 2010 on, more than half of all people have been living in urban areas. In 2050, it is estimated that 7 in every 10 people will live in a city.<sup>1</sup>

To be metropolitan demands a strong protagonism, not only from the political and territorial standpoint, but, above all, from the economic one. In most countries, these regions constitute themselves as economic increase and innovation engines. They aggregate a predominant part of the gross domestic product of their countries, they attract qualified workforce, and, in a great deal of the cases, have an economic dynamics which is characterized by the concentration of economic functions said to be superior - the ones mainly related to research and innovation, to the financial sector, to commerce and to cultural activities.

On the other hand, the accelerated urban growth ends up highlighting discrepancies, increasing the lack of goods and basic services which are essential for the urban life and accelerating environmental degradations, hindering the urban mobility and bringing an expressive growth of precarious housing, due to the migration of people seeking better job opportunities in the metropolises.

In order to promote the balanced economic development, and, at the same time, to face the social and infrastructure needs - thus ensuring life quality to the metropolitan citizens - it is necessary to build a governance ability in these territories.

In this study, we use the extended concept of governance as a set of structures, institutional arrangements, and action systems which cover public politics means and instruments - involved in the management of the extended territorial space - mobilized by public and private entities and the civil society.<sup>2</sup>

<sup>1</sup> See United Nations - ONU (2014)

<sup>2</sup> See URANI (2006).



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**There is not a single model which may be replicated indiscriminately; that is, the governance pathways cannot be taken as universal**

The advancement of the metropolization process of a territory brings in itself the need to form a complex governance, because it ends up involving, in most cases, different government and demand levels, which requires a consensus among the parties, as well as the preparation of integrated public policies, transversal in character.

The fact is that the existing governance structures and financing mechanisms are almost always unsatisfactory, and they generate uncertainties and delay in decision-making, with implications in the reduction of competitiveness and in the ability to promote adequate spaces, considering the improvement in urban mobility and services to those spaces and their citizens.

In most countries, the local action is shown as fragmented and limited to face the planning, management, and the financing of continuous projects.<sup>3</sup> Most metropolitan regions do not have an established and recognized authority with political leadership and influence, capable of coordinating metropolitan schedules and providing financing for the actions.

The complexity of actions in the areas of housing, transportation, sanitation, and urban solid waste results in the local managers' difficulty to promote the advancement of public policies, once they cannot be enforced in isolation. An integrated view is needed to overcome the challenges in the metropolises, and to achieve balanced economic growth and territorial organization, and access to public services.

These tasks need a systematic metropolitan view and permanent and articulate actions.

The metropolitan institutional arrangements take different characteristics and structures in different locations, depending on the country's historical and political formation. In this focus, the urbanization rhythm and its impacts on the ways of political organization of the territory may hinder a joint action to solve the problems arising from that urbanization. The very ability of expenditure of the different government structures consists of a fact that limits the regional and the metropolitan action - particularly - to face the demands, considering the metropolitan territory socioeconomic heterogeneity under different aspects.

That way, there is not a single model which may be replicated indiscriminately; that is, the governance pathways cannot be

<sup>3</sup> See ROJAS (2008).

taken as universal - it is the other way around - they are strongly limited by the local specificities and interaction dynamics, from where the joint decision systems emerge (URANI, 2006).

Although it is impossible to find a metropolitan governance model that fits in all situations found in the metropolitan areas of different countries, the report of several experiences seen during the Metropolis Initiative has allowed the identification of the most relevant aspects to be observed in the construction of better metropolitan governance arrangements and in the financing of metropolitan projects.

In spite of that, we may enumerate some successful experiences in countries in the European Union, which have been implementing new financing strategies of urban development, as is the case in the constitution of structural funds, which seek to adjust the good development of the cities with the economic performance of the countries. In the United States, the federal financial incentives for the transportation area demand planning and metropolitan coordination.

In the case of Brazil, from 1988's Constitution and on, the state governments started to be responsible for creating the metropolitan regions. The only condition is that they are constituted as groupings of bordering cities. The same Constitution motivated a strengthening of the financial status of the cities in the sharing of taxes. In return, an increase of their competences has occurred, due to the decentralization process<sup>4</sup>. On the other hand, the federal government has performed erroneously in the creation of coordinated policies that should have increased the responsibility of the state governments as regional articulators. Instead, it increasingly started to keep in close contact with the cities, which made even more difficult to coordinate the financing of metropolitan actions.

The result has been an inability of the State Governments to articulate with their cities and regions, although the degree of that incapacity greatly varies, whether among States or among different sectors of the public authority.

This way, in Brazil, we may notice the states have been taking over the mission to articulate regionally, although the great and biggest challenge is the transition from direct executor of the actions to coordinator and articulator of regionalized actions among cities.

<sup>4</sup> A range of responsibilities of service and infrastructure provision has been transferred to the subnational governments, without there being the development of the institutional, tax, and financial ability. See REZENDE (2010)

In general, the cities' investment capacity is very low. This situation tends to be further aggravated due to the big tax discrepancies among governments in the same Metropolitan Region<sup>5</sup>. Such discrepancies, not rarely, result in the lack of coordination of the investments, increasing the possibility of conflicts when it comes to the implementation of metropolitan projects.

On the other hand, forced by the need of cooperation, new governance structures arise, as is the case of Rede 10 (Network 10), in the context of the metropolitan region of Belo Horizonte - RMBH (Região Metropolitana de Belo Horizonte, in Portuguese). The Network is a collaborative governance instance formed to channel efforts and share technical, political and financial resources among the several social and political actors and the institutional arrangements. It comprises ten cities in the RMBH conurbation: Belo Horizonte, Betim, Brumadinho, Contagem, Ibirité, Nova Lima, Ribeirão das Neves, Sabará, Santa Luzia and Vespasiano. Such cities make up for 90.2% of RMBH's population, and the arrangement has been formalized in a Protocol of Mutual Cooperation<sup>6</sup>. There are agreements signed, such as the acknowledgment of the interdependence among cities, the respect to the autonomy and existing diversities and the assurance of transparency in the actions shared.

In the European Union, it is important to highlight Barcelona's new Metropolitan Area (AMB), which was created in 2011, replacing the three metropolitan entities which had existed since 1987<sup>7</sup>. AMB is the accomplishment of a cooperation model among the administrations, which has been developed throughout the years. It is a step forward in promoting public and logic policies that make up the metropolitan competitiveness and the territory welfare.

Nonetheless, the metropolitan action is still subject to agreements and balances with another government and the social and economic entities, which seems to be inherent to the same metropolitan phenomenon. The region does not have exclusive competences. For that reason, necessarily, it has the participation of other public administrations upon determining its policies. The same way, in the logic of the metropolitan governance, AMB's performance is supported by social and economic entities in the territory, as an assurance of a good design of public policies and their proper implementation and assessment<sup>8</sup>.

The construction of an adequate institutional arrangement, whether it is formal or informal, could be strictly linked to

<sup>5</sup> On that subject, see "Finanças Públicas e Capacidade de Investimento da Macrometrópole Paulista". EMPLASA, 2011.

<sup>6</sup> The agreement was signed in 2009 and established the commitment among the participating cities to articulate local public policies aiming the improvement of regional results and the planning of actions within a metropolitan view.

<sup>7</sup> Before the approval of the Metropolitan Area Act, in the Community of Catalunya, there were three metropolitan organizations with difficulties to agree on common, non-conflicting metropolitan strategies. With the approval of the Act in 2010, AMB has taken over the competences exerted by the three metropolitan entities (*Mancomunitat de Municipis + IMPSOL, Entitat Metropolitana Del Transport + Transports Metropolitanans de Barcelona, and Entitat Metropolitana del Medi Ambient*).

<sup>8</sup> For a further detailed analysis, please refer to Pla D'Atuació Metropolitana, <http://www.amb.cat/web/guest/pam>



the financing models the metropolitan areas have for the development of the projects, once the feasibility of a coordinated action, capable of planning and managing projects for the common good, depends, among other elements, on the available financial instruments.

Therefore, identifying the existence of arrangements which allow the bigger coordination among the subnational entities and, consequently, the definition of a common agenda, may facilitate the financing of complex projects, whose execution may surmount the political mandate in most cases.

That is precisely the theme which the Metropolis Initiative on Metropolitan Governance intends to discuss; that is, identifying basic elements of institutional arrangements through which the metropolitan governance becomes effective and succeeds in financing actions involving more than one city.

It is known that there is no single solution or success formula that may be reproduced for all regions. Thus, the case study may be the right path to analyze the feasible solutions, and, from there, to develop recommendations from the best practices.

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# 02.

## PROFILE OF THE METROPOLISES AND METROPOLITAN REGIONS PARTNERS IN THE INITIATIVE

### Brazil

Brazil has 37 metropolitan regions formally created, besides three Development Integrated Regions (RIDES - Regiões Integradas de Desenvolvimento)<sup>9</sup>, which represent 482 cities, or 8.6% of the national total. The population is strongly concentrated in these regions, making up for 87.3 million in 2010, and representing 46% of the country's total. The MRs are very heterogeneous, both in terms of composition, classification, profile, and also diversity of criteria for the metropolitan creation and management, as we will see throughout this study. In Brazil, 13 metropolises and metropolitan regions have taken part.

### São Paulo State

#### São Paulo's Macrometropolis

São Paulo State has been going through a process of social development towards the countryside, and a production and population decentralization. These factors were highly concentrated in the Metropolitan Region of São Paulo (RMSP - Região Metropolitana de São Paulo). Currently the state is going through a spatial transformation which resulted in a new metropolization design - in other words, a new metropolization scale, with the shape of a great urban region called São Paulo's Macrometropolis (Macrometrópole Paulista). This territory comprises 5 metropolitan regions: São Paulo, Campinas, Baixada Santista, Vale do Paraíba and Litoral Norte, and Sorocaba, besides 2 urban agglomerations and 1 micro-region<sup>10</sup>. Compared to the whole state, the Macrometropolis concentrates 51% of the

<sup>9</sup>The RIDES are created through decrees and complementary legislations in the federal levels, unlike the MRs which are the states' attribution. They include cities of more than one state in the Federation. There are three RIDES in Brazil: The Federal District, created in 1998, and the ones of Teresina, Petrolina and Juazeiro, created in 2001. Due to this premise of geographical integration, the RIDES cover a broader concept than the Metropolitan Regions. However, this institutional arrangement does not always represent the actual social and economic dynamics of the region.

<sup>10</sup> Sorocaba's Metropolitan Region was created through Act 1/2014, in May, by São Paulo State Government, and it comprises 26 cities.

state's urbanized area. The population is 30.5 million inhabitants; making up for 73% of the state total, and it represents 27% of the Gross Domestic Product (GDP) of the country, and 82% of the state GDP. It is a functionally integrated territory, which covers 173 cities, and that, in spite of not having been formally created, is acknowledged in practice. In this study, the four metropolitan regions in São Paulo State will be represented, except for the Sorocaba one.

### **Metropolitan Region of São Paulo (RMSP)**

Housing the headquarters of the main national and international media and communication companies, and financial and industrial complexes, the RMSP has a sophisticated infrastructure in the telecommunications and information technology areas. With 39 cities, the region is where the wealth is most concentrated nationally, making up for 19% of Brazil's GDP, and 57% of São Paulo State. The population was 19.8 million inhabitants in 2010, making up for 47.7% of the state's population. In the last ten years, the population growth has been noted to be falling. It has a high population density (2,477 inhabitants per Km<sup>2</sup>), and an urbanization rate that is as high as 99%.

Partners: Empresa Paulista de Planejamento Metropolitano (EMPLASA) and Municipal Department of International and Federative Affairs

### **Metropolitan Region of Campinas (RMC - Região Metropolitana de Campinas)**

The RMC has been establishing itself as an important economic player in Brazil and in São Paulo State. It has been formally created by the State Complementary Act no. 870, from 06/19/2000, and it comprises 20 cities and a population of 2.8 million inhabitants. RMC presents the most expressive industrial concentration in São Paulo's countryside, characterizing itself as the house of modern sectors and industrial plants articulated in large and complex production chains, being inserted in a large production territory. The region's GDP represents 8% of the State, and the average income is high, compared to the country and to the rest of the state. The presence of scientific and technology centers and universities confirms the tendency towards being a technological center and an area for concentration of businesses in the field of information technology and telecommunications. It has a highly competitive infrastructure and logistics, including roads and an airport.



Partners: Empresa Paulista de Planejamento Metropolitano (EMPLASA) and Campinas' Metropolitan Agency (Agemcamp - Agência Metropolitana de Campinas)

**Metropolitan Region of Baixada Santista (RMBS - Região Metropolitana da Baixada Santista)**

The RMBS, which comprises nine cities, largely participates in the country's exporting commerce, because it hosts the most important port in the country. It has the smallest and most specialized industrial park among the four metropolitan regions in São Paulo. Its largest economic growth centers are Cubatão's Industrial Park and Santos' Port Complex, with 13 km of quays. It has a population of 1,6 million inhabitants, and the Gross Domestic Product corresponds to 3,8% of the state's total.

Partners: Empresa Paulista de Planejamento Metropolitano (EMPLASA) and Baixada Santista's Metropolitan Agency (Agem - Agência Metropolitana da Baixada Santista)

**Metropolitan Region of Vale do Paraíba and the North Coast (RMVALE/LN - Região Metropolitana do Vale do Paraíba e Litoral Norte)**

With 39 cities, RMVPLN concentrates innovative industrial companies and a large amount of the production from the scientific industrial plants in São Paulo, which are supported by the technological and research centers of the universities and research institutes based in the region. It is also a center for the exploration of petroleum and natural gas from Pré Sal (Brazil's Pre-Salt Layer), and it receives large federal investments for the development of infrastructure and the enlargement of São Sebastião's port.

Partner: Empresa Paulista de Planejamento Metropolitano (EMPLASA)

**Metropolitan Region of Rio de Janeiro (RMRJ - Região Metropolitana do Rio de Janeiro)**

The RMRJ, besides having an infrastructure of quality in the services' sector, is a center of constant tourist expansion. Comprising 19 cities, the region makes up for 71% of the State's GDP and is the second biggest financial center in Brazil, being the runner-up to São Paulo only.

Partner: Rio de Janeiro's Municipal Government - The Port Region Urban Development Company of Rio de Janeiro (CDURP) and the

Chief of Staff.

## **Minas Gerais State**

### **Metropolitan Region of Belo Horizonte (RMBH - Região Metropolitana de Belo Horizonte)**

The RMBH is an interesting case-study, having in mind its peculiar track record. The region currently comprises 34 cities and has historic roots which are common to other regions in the country, going back as far as the 1970's. The region's GDP makes up for 50% of Minas Gerais' GDP, and 15% of Brazil's, this being the 3rd most economically developed region, right below São Paulo and Rio de Janeiro. Most of its activities are concentrated in the industrial sector.

Partner: Metropolitan Region of Belo Horizonte's Development Agency (Agência de Desenvolvimento da Região Metropolitana de Belo Horizonte)

### **Cooperative Governance Network (Rede 10)**

Rede 10 is a cooperative governance network comprising 10 cities in the conurbation around Belo Horizonte. This network aims to promote a larger social and territorial uniformity through the sharing of technical resources and articulation for the resolution of problems which are common to those cities. At the conclusion of the study, the Network was disabled, with no time for further discussion.

Partner: Rede 10

### **Metropolitan Region of Vale do Aço (RMVA - Região Metropolitana do Vale do Aço)**

The RMVA, in Minas Gerais, is the home to 45 thousand inhabitants and comprises 26 cities. The development of its cities is due to the strong production of steel and other metallic minerals, transported from the Quadrilátero Ferrífero (the Iron Quadrangle) through Vitória-Minas railway, and through the Export Corridor. Another strong suit of the region is the development and implementation of large plants of intermediate goods, such as the steel plants Usiminas and Acesita, and the cellulose plant, Cenibra.

Partner: Represented by the Metropolitan Region of Belo Horizonte's Development Agency (RMBH)

## Goiás State

### **Metropolitan Region of Goiânia (RMG - Região Metropolitana de Goiânia)**

The RMG, with its eleven cities, is a leader in the agricultural, livestock and poultry raising activities. Managed by Goiás State's Development Office, the region makes up for 60% of the GDP and houses 35% of the state's population.

Partner: Metropolitan Region of Goiânia's Development State Office.

### **Metropolitan Region of Curitiba (RMC - Região Metropolitana de Campinas)**

Consisted of 29 cities, the Metropolitan Region of Curitiba, in Paraná State, has a great industrial center which is the headquarters of 12 of the most important companies in Brazil today. With high social indicators, the region has an employment rate lower than the national average. The MR area corresponds to 8% of the state territory and to 31% of its population.

Partners: Municipal Government of Curitiba - Public Administration Municipal Institute

## Rio Grande do Sul State

### **Metropolitan Region of Porto Alegre (RMPA - Região Metropolitana de Porto Alegre)**

With 33 cities, representing 37% of the population of Rio Grande do Sul State, the RMPA has an ever-growing, diversified economy. Its territory may be divided in three - each region represents a different economic vector. Whereas the south is recognized by its production of leather, fur, paper and cardboard, the north has a well-developed industrial park, in which petrochemistry, metallurgy and the production of foodstuffs are highlighted. The east and the west focus on rural activities.

Partner: Porto Alegre's Municipal Government and Canoas' Municipal Government

## Pará State

### **Metropolitan Region of Belém (RMB - Região Metropolitana de Belém)**

The RMB is within the five largest metropolitan regions in Brazil,



besides being the main entry point through the north of the country, and having the closest ports to the US and Europe. The region has a very developed industry in the food, naval, metallurgy, fishing, chemical and timber areas.

Partner: Pará's Economic, Social, and Environmental Development Institute (IDESP - Instituto de Desenvolvimento Econômico, Social e Ambiental do Pará)

### **Metropolitan Region of Brasília**

The strategy of development towards the countryside and the desire of national integration which transferred the federal capital to Brazil's Central Plains was determinant for the intense urbanization of the Central-West region. From the early 1970s, the formation process of the Metropolitan Area of Brasília was intensified, due to the consolidation of the federal capital to the region. Because of its institutional complexity and being a territory consisted of two federation states, the Metropolitan Region of Brasília does not exist formally. In this context, the Federal Government created, in 1998, through a complementary law, the Federal District and Surrounding Areas' Development Integrated Region (RIDE-DF - Região Integrada de Desenvolvimento do Distrito Federal e Entorno), comprised of 19 cities in Goiás State, 3 cities in Minas Gerais State, and the Federal District.

It extends through 57.169 km<sup>2</sup>, the Federal District making up for 10% of that total. The DF (Federal District, or Distrito Federal) houses 70% of RIDE's population and presents a GDP that is almost 15 times as much the GDP of its surroundings.

Partner: Federal District Government

## **South Africa**

### **Metropolitan Region of Gauteng**

The Metropolitan Region of Gauteng is the richest region in South Africa, comprising not only the largest city in the country, Johannesburg, but also its Constitutional Court. With 12.3 million inhabitants, the region is the country's most populated, although it only makes up for 1.5% of the national territory. Considered the smallest province in South Africa, Gauteng is within the 40 largest metropolitan regions in the world.

Partner: Gauteng Province Government

## Argentina

### **Metropolitan Area of Rosario (AMR- Área Metropolitana de Rosario)**

The AMR is located in Santa Fé province, Argentina, and comprises 23 cities and around 1,4 million inhabitants. Its metropolitan action is coordinated by a metropolitan agency in Rosario and by the Metropolitan Coordination Entity (Ente de Coordinación Metropolitana - ECOM). The region presents a wide variety of natural resources and a growing agricultural industry, especially with the support of the region's railroad and port network.

Partner: Municipal Government of Rosario - Metropolitan Unit for Strategic Planning and Management, Metropolitana

### **Metropolitan Area of Buenos Aires (AMBA - Área Metropolitana de Buenos Aires)**

Consisted of 40 cities and large urban conglomerates, the AMBA concentrates 13 million inhabitants, corresponding to 46% of the Argentinean population, and generates 52% of the GDP. Considered the second largest metropolitan region in South America, and the 16th in the world, AMBA is not institutionalized, and deals with its metropolitan affairs as per the sectorial needs.

Partner: Government of Buenos Aires Autonomous City

## Peru

### **Metropolitan Region of Lima and Callao (AMLC - Área Metropolitana de Lima y Callao)**

The Metropolitan Region of Lima and Callao, in Peru, is divided in two provinces (Lima and Callao) and in 49 districts. Not only does this region concentrate more than 28% of the national population, but also makes up for 45% of the national GDP, 56% of the industrial GDP and 60% of the national services. The most developed economy vectors are the port and airport sectors.

Partner: Peru's Urbanism and Planning Institute (Instituto de Urbanismo y Planificación del Perú - IUPP)

## **Mexico**

### **Metropolitan Zone of Valley of Mexico (ZMVM - Zona Metropolitana del Valle de Mexico)**

The Metropolitan Zone of Valley of Mexico comprises 59 cities, plus 16 divisions in Mexico's Federal District. With 19 million inhabitants, being classified as one of the most populated cities in the world, the region concentrates the highest quantity of economic activities in Mexico, besides making up for 1/3 of its GDP.

Partner: Government Office - Sub office of Metropolitan Coordination and Government Relations

## **China**

### **Pearl - River Delta Metropolitan Area**

The region known as The Greater Pearl-River Delta not only has a territory extension that is larger than some European countries such as Switzerland and Denmark, but also already represents 80% of Guangdong province's GDP, where it is located. The presence of Hong Kong makes the region an economic and financial power within China and it is intensified through the fast development of an industrial center.

Partner: International Research Institute of Guangzhou Social Sciences Academy

# 03.

## TRACK RECORD OF THE WORKING PROCESS

Aiming to spread the knowledge of the best practices in the governance area and in the alternatives of financial tools for metropolitan projects, the Initiative started its research activities in 2012.

After the submission project having been approved in the 10th Metropolis World Congress in Porto Alegre, Brazil, a first gathering was organized in São Paulo, in June 2012, with the presence of representatives of several Brazilian and international metropolitan regions. The meeting has provided the first exchange of experiences between the partners, who could present their development strategies and main issues in the metropolitan management. Throughout 2012 and 2013, nineteen partners took part in the Initiative, coming from seven countries and five continents.



Hoping to understand the development and institutionalization conditions of the metropolitan regions and, later on, to generate a process of comparison, observing their differences, after this first on-site gathering, the filling of charts and questionnaires was requested, which contained territorial, demographic and economic information, as well as levels of planning and financing aspects of projects in each partner region.



Still in 2012's first half, the coordination of the Initiative held its first international presentation in New Delhi, India. In the event of the Metropolis Network - organized by the Melbourne Initiative on Integrated Strategic Planning and Public-Private Partnerships - technicians from São Paulo discussed these themes with the United Nations program for Compact Cities from RMIT University, Melbourne and the National Institute of Urban Affairs of New Delhi (NIUA).

In September 2012, the Initiative's technical team was invited to the formation of the networking event "Metropolises at Work:

Governance, Finance, and the Execution of Public Policies” in the 6th World Urban Forum of the United Nations’ Human Settlements Program (ONU-Habitat) in Naples. At the time, São Paulo promoted the discussion regarding the focus of the study and included the presentation of Barcelona, Johannesburg and Mexico’s metropolitan governance experiences.

The next step in the Initiative focused on the identification of practical cases in relevant themes for the agenda of public functions of metropolitan interest. For two days, in April 2013, representatives from several metropolitan regions such as Buenos Aires, Rosario, Gauteng, Belém, Curitiba, Belo Horizonte, Brasília and Goiânia gathered in São Paulo to discuss the matter of the public-private partnerships in the financing of metropolitan actions and projects. Specialists from different regions shared their experiences in public projects that have some sort of private financing in the areas of transportation, health, solid waste management, social housing and urban renewal.

In this gathering, the partners chose the metropolitan area of Rosario for a case study, with the aim of understanding certain aspects of its voluntary arrangement and the public-private agreement that resulted in a large process of urban renewal in the city.

In July 2013, the new advancements in the study were reported in a session from the Initiative in the Metropolis Annual Meeting, in Johannesburg, South Africa. In the event projects and public-private partnerships both finished and in progress were also presented, in the areas of transportation, social housing and urban renewal of the respective locations - Gaunteng, São Paulo and Buenos Aires metropolitan regions.

Besides the execution of the sessions, the mission to South Africa has provided the contact from the planners of the Initiative with the metropolitan transportation project ‘Gautrain’, reported later on.

Acknowledging the focus on the study of financing alternatives for metropolitan projects, UCLG invited the Initiative’s technical coordination to organize, jointly with UN-Habitat and the German Agency for International Cooperation (GIZ), a session during the 4th World Congress of the United Cities and Local Governments (CGLU) in Rabat, Morocco, in October 2013. The preliminary results of the study and the experience of São Paulo



with the Public-Private Partnerships (PPPs) of transportation and sanitation were presented to the African cities: Line 4 of the subway and Taiaçupeba's Treatment Plant - besides technical aspects involving the preparation of projects and the subject of warranties. The specialists from UN Habitat and GIZ presented the challenges the emerging regions are facing in the provision of basic services to citizens, and a support methodology for the small Asian cities in the development of infrastructure financing plans.

At the final phase of the Study, the participants of the Initiative went on a technical trip to Rio de Janeiro, with the purpose of getting to know Porto Maravilha urban operation, a renewal program from Rio de Janeiro Municipal Government, which aims to requalify five million square meters of the city's port zone, with the cooperation from the private sector. After that, they visited Belo Horizonte's Metropolitan Development Agency, in Minas Gerais, where they focused on the policy for the management of solid urban waste with private support.

At last, in March 2014, a joint mission was promoted between technicians from the Initiative and partners from other metropolitan regions (Goiânia, São Paulo, Curitiba) to Argentina. During the course of the schedule, the urban renewal construction sites in Rosario and Buenos Aires were visited and the agenda for the metropolitan governance of the respective cities was discussed with local specialists.

All the workshops and work documents reported above served as fundamental instruments for the development of content in the current Study. The technical visits played the relevant role of providing the direct contact with the projects reported herein, as well as of getting the partners closer and providing an intense exchange of experiences.

In turn, the material requested from the partners (charts and questionnaires) served as fundamental tools for the construction of an overview of the political-institutional and socioeconomic aspects of the regions herein.

Thus, the technical team had enough resources to identify the different international practices in the areas of governance and financing of metropolitan projects which may serve as lessons learned, feasible to be reproduced with the necessary adaptations by other metropolitan regions.



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# 04.

## SOCIOECONOMIC DIAGNOSIS - SOME DISCUSSION POINTS

The demographical dynamic of the partner metropolises is based in most cases in the concentration and high density of population. Besides that, such dynamic, many times, is materialized in a conurbation among the cities and complementarity relationships between the hosting city and other cities in the influence area. That is what we have verified in the survey with the MRs, which present a high rate of urbanization, almost reaching 100% in some areas. The demographic densities are very elevated, with several examples of more than 1,000 inhabitants per km<sup>2</sup>. The Metropolitan Region with the highest habitation density is located in Peru - Callao, with almost 6,000 inhabitants per Km<sup>2</sup>. (Please see Appendice Table 1- Territory Configuration). However, when considering the density, a high heterogeneity and a difference of scale among metropolises are noted. Although several MRs have a large number of cities formally integrating them, only a part, actually, composes a unique human fabric or is strongly integrated due to the urban stain. In the case of the newly created Metropolitan Region of Vale do Paraíba and Litoral Norte (RMVPLN), in São Paulo State, there are 39 cities, whose densities range from a minimum level of 7.14 to 573 inhabitants/km<sup>2</sup> for the main city.

On table 2 (Demographical Characteristics), one of the aspects to be highlighted is the demographic weight of the Metropolitan Region in the context of the country and also in the regional context. It is interesting to note that the region that concentrates the most part of the population of the country is Buenos Aires, with 37%, in a clear contrast with the Baixada Santista and Vale do Aço, with only 0.2% of the national population<sup>11</sup>. In more than half of the studied cases, the main city (or nucleus) concentrates more than 50% of the population in the metropolitan region. The relevant demographical weight (and in some cases, also the economic one) of the hosting city reveals its role of centrality, which many times constitutes an obstacle to the political balance of possible governance arrangements in the Metropolitan Region.

<sup>11</sup> This differentiation in the Brazilian case may be explained by the continental status of the country, and also by a better national distribution of the city network.

When it comes to the average rate of demographic growth, a reduced percentage is verified in some regions, as is the case of RMSP, whose rate was 0.97% between 2000 and 2010, below the Brazilian percentage (1.17%) and the one from São Paulo State (1.09%), revealing the sharp downfall in the demographic growth.

However, a more rigorous analysis shows a decline in growth in RMSP's central areas and an increase in the peripheral portions: whereas São Paulo city (the main city) has grown at reduced rates and its migratory balance was negative (that is, net population losses), the surroundings rose to rates approximately twice as high. In this case, the migration represented almost the whole demographic increase observed in these cities.

It happens that the central regions have the most part of infrastructure services, public equipment and formal employment, whereas the so-called peripheral regions lack most of those services. This dynamic makes infrastructure investments more expensive, mainly in regards to transportation, due to the commuting performed daily by the poorer population towards the region's central areas, where the jobs are more concentrated.

On the other hand, there are regions where that rate is still elevated, reaching 2%, as is the case in the metropolitan regions of Belém, Campinas (RMC), and Goiânia (RMG). In RMG, there is an accelerated population process over the past few years: the current 20 cities had a total of 501,063 inhabitants in 1970; in 2010, they had 2,173,141 inhabitants, as per data from IBGE (Brazilian Institute of Geography and Statistics - Instituto Brasileiro de Geografia e Estatística), resulting in an exponential rate of population growth of 4.31% per year.

#### The commuting phenomenon in São Paulo Macrometropolis

The increase in the volume of commuting in the Macrometropolis, even in a context of significant reduction of the demographic growth of all MRs in São Paulo State and urban agglomerations involved, shows that this phenomenon, in spite of coming from a growth, expansion and increase process of the socio-spatial heterogeneity of the regions, does not necessarily depend on a consistency of demographic growth. Actually, the analysis of the regions makes it clear that, due to the space complementarity, integration, continuity, and fluidity which tends to characterize an

## The data shows that in São Paulo's Macrometropolis, in 2010, more than 2.9 million people moved regularly for the purpose of studies or work

urban agglomeration - especially the one of metropolitan character -, this phenomenon may obtain a certain autonomy due to changes in the usage forms and the occupation of the urban land, either in demographic, or even in economic terms. That is, more than a consequence for the demographic growth, the commuting reflects the "movement" of the metropolis coming from internal socioeconomic and demographic rearrangements occurred. As we know, not only do they depend on the private actions, but also on the public intervention; in this last case, through regulation or specific policies.

The data show that in São Paulo's Macrometropolis, in 2010, more than 2.9 million people moved regularly for the purpose of studies or work; that is, a growth of more than 76% in 10 years. The growth in the flows, with emphasis on those that go out from or come in the regions (external) highlights the economic and demographic relevance of the area, pointing towards an ever-increasing dynamization, and covering geographically more extensive regions.

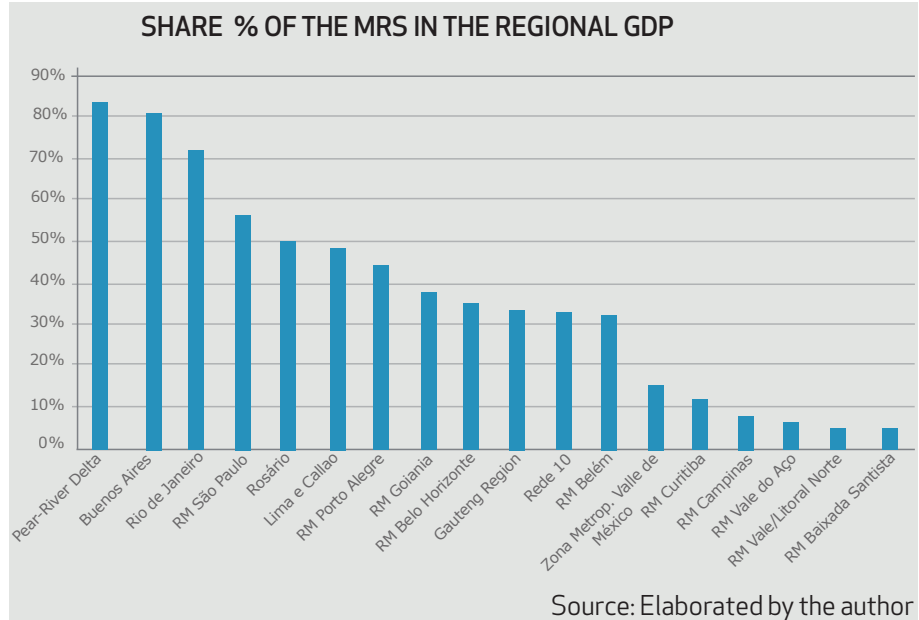
In absolute terms, the RMSP is the one that moves the highest number of people, 1.9 million people commute daily, followed by RMC, with more than 311 thousand people, RMBS with 200 thousand, RMVPLN with 149 thousand.

*Source: See CUNHA, STOCO e DOTA (2013)*

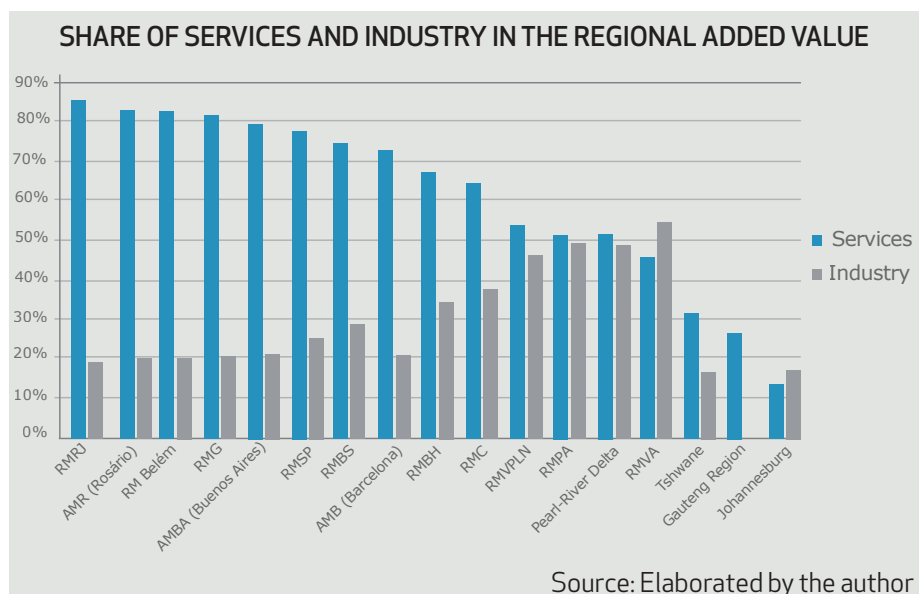
The economic dynamic of the metropolitan region is characterized by the expressive economic concentration, since it's a being a stage of competitiveness of the economy and of higher economic functions; in most cases, hosting activities of national and world importance.

In the regional context, the expressive economic weight of the MRs is yet more visible; and in some cases, with the Gross Domestic Product of the region making up for more than 80% of the total of the provinces or states, as is the case in Buenos Aires, in Argentina; and Pearl River, in China. The GDP per capita, even if this is still and imperfect input for the analysis of the life quality in the Metropolitan Region, demonstrates that the partner regions are still really outdated in regards to this topic comparatively to

Europe and the United States, in which the GDP per capita of the regions is beyond USD 40 thousand/year. In the case of AMB, in Barcelona, this indicator has been estimated in € 32,700 in 2008.



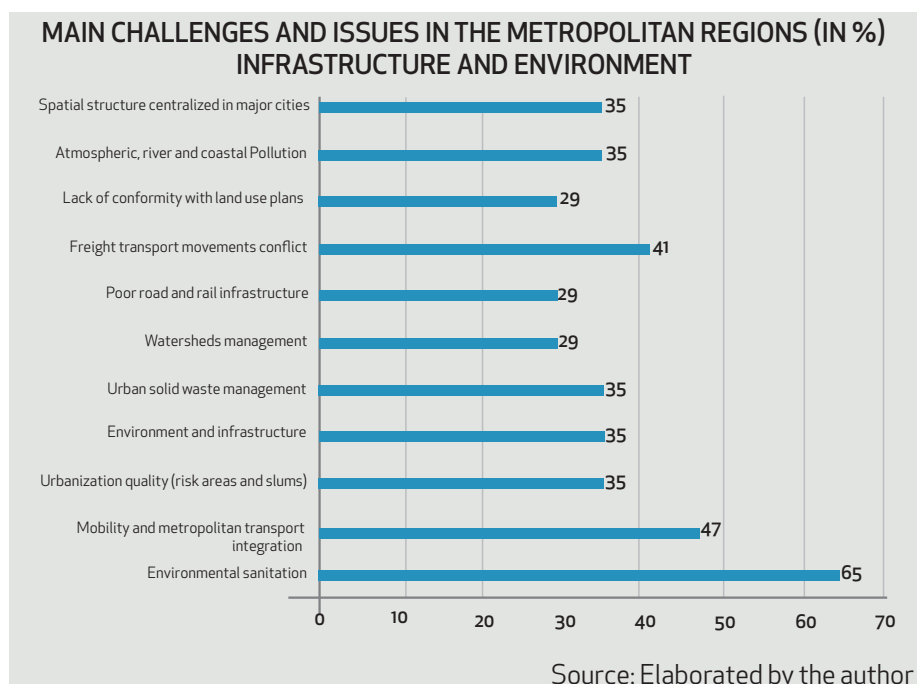
The chart below may be analyzed jointly, in order to assess how much the industry and the services participate in each MR. It is interesting to observe how the services represent the economic activity of highest predominance in the metropolitan areas. In some cases, such as Rosario's, Argentina; and Rio de Janeiro and Belém, Brazil, they represent around 80% of the total value added, and industry covers the remainder.



## Environmental sanitation and urban mobility are among the top concerns in the metropolitan areas

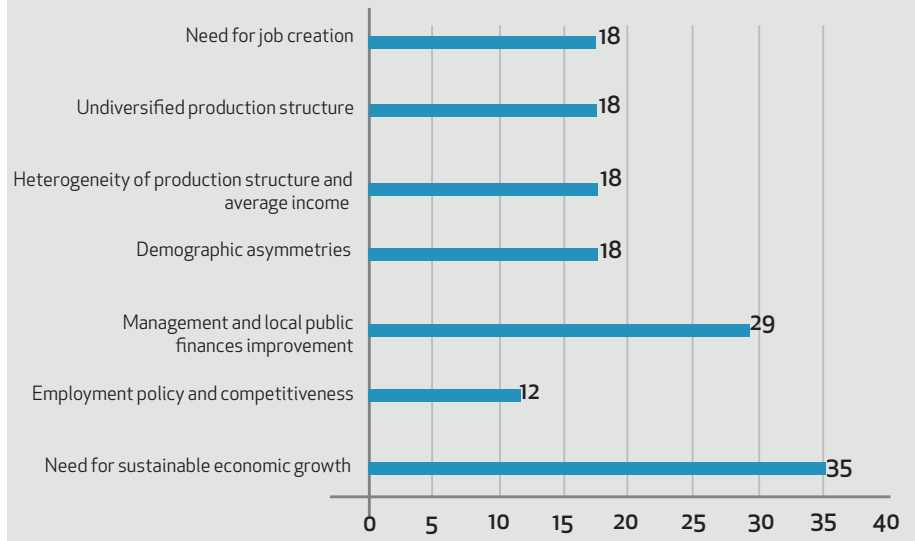
The globalization process explains in large part those data, once the metropolises have been turning into centers for high added value services (finances, culture, health, research, development etc.). The effects of dramatic changes in the economic profile must be noted, since the industry leaving the metropolitan areas towards the smaller centers may generate unemployment and the informality in the employment relations. The same way, the appearing of services of high added value demands qualified workforce, which is sometimes scarce in the region.

It is noted that issues such as environmental sanitation and urban mobility are among the top concerns in the metropolitan areas, as well as the lack of compatibility in the definitions for the use of the land and the contamination of the air, the rivers and the coast. A large part of the regions has already addressed most of these issues in their long-term strategic plans - some of them are already in progress.



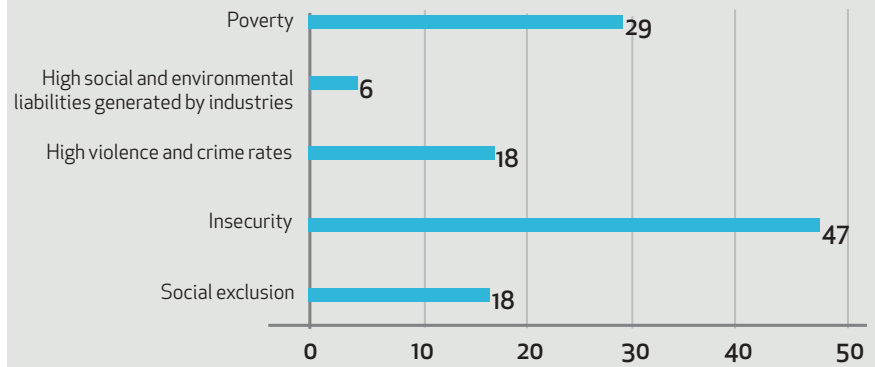


### ECONOMIC DEVELOPMENT



Source: Elaborated by the author

### SOCIAL PROBLEMS



Source: Elaborated by the author

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# 05.

## CHARACTERISTICS OF THE METROPOLITAN MANAGEMENT AND PLANNING INSTITUTIONAL ARRANGEMENT

The relevance in assessing the institutional arrangement in each metropolitan region is due to our purpose of understanding which institutional processes, mechanisms and arrangements support the decision-making to consummate the actions.

More than that, it is our focus to cross-examine which institutional arrangements, structures and instruments of public policies are used by the public and private players to go over the steps of planning, raising financial resources and actually succeeding in the execution and management of metropolitan investments.

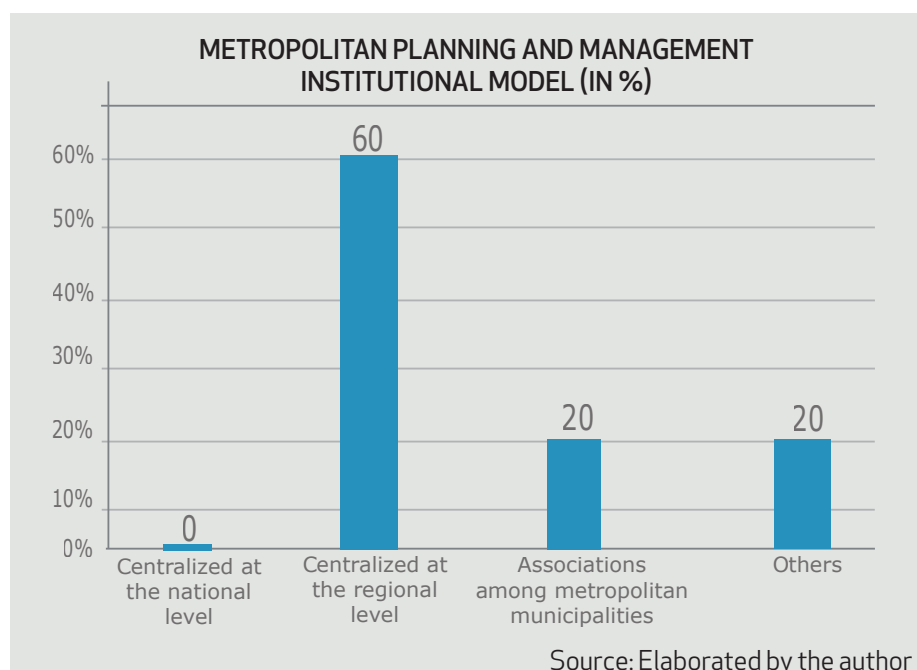
Lefèvre (2005) has developed categories which he named governance models, based on the principle that, in the several national realities, the challenge of the institutional fragmentation has been faced somehow, whether an institutional structure exists or not, either creating a metropolitan authority or not. Thus, there are models which operate through the institutional construction and others which operate through the cooperation and association of the local governments of a certain region.

Through a questionnaire sent to the partner institutions in this study, the points below have been brought up:<sup>12</sup>

<sup>12</sup> Thirteen metropolitan regions answered the questionnaire

- Metropolitan management and planning institutional structure (name of the agency, political-institutional connection, creation date, main attributions and subordinate agencies);
- Metropolitan management and planning institutional model, as well as its characteristics (formal or informal arrangement);
- Assessment and qualification of the organization, and of the performance of the metropolitan management and planning model;
- Mechanisms/Instruments which make this participation feasible;
- Degree of effectiveness in the participation of the remaining social players in the metropolitan planning and management.

Most regions have a planning and management institutional model centralized at the regional level. That is the case of the Metropolitan Zone of Valley of Mexico and all metropolitan regions in Brazil (Belo Horizonte, São Paulo, Campinas, Baixada Santista, Vale do Paraíba e Litoral Norte, Goiânia, Belém and Curitiba).



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**In Rosario, the model is the one of voluntary association of cities and it has been created through a voluntary agreement among cities and communes**

The model of association among metropolitan cities occurs in Buenos Aires and Rosario, and other ways of institutionalization are found in Barcelona's Metropolitan Area and in Belo Horizonte's Rede 10.

Buenos Aires' Metropolitan Region (AMBA) does not have a political and administrative agency structure, and it can be described as an economic market area included in the territory of the Autonomous City of Buenos Aires, plus 40 cities. AMBA is not an institutionalized area and the cooperation happens through themes, when most of the governments share the same problem. On top of being the capital of the country, Buenos Aires is the headquarters of the central government and is considered an autonomous city, which makes the coexistence of national, state and municipal jurisdictions generate political-administrative superpositions. In Rosario, the model is the one of voluntary association of cities and it has been created through a voluntary agreement among cities and communes, overseen by the local legislative agencies.

In the case of Barcelona's Metropolitan Area (AMB), the new management model has come into force in 2011, and it has the format of local supramunicipal entity of a territorial character, governed by the same regulations valid for the local governments and provinces in the country. AMB has incorporated the responsibilities of three metropolitan entities which existed before (public transportation, urban mobility, water supply, waste management, infrastructure of metropolitan interest, parks, squares, and housing) and has also taken over others, such as the organization of the land, the economic development, the group and territorial cohesiveness. Such competences are performed in a complex institutional environment, since they are shared among the local, autonomous and state governments.

The Cooperative governance network (REDE 10) was created through a Protocol of Mutual Cooperation signed on October of 2009 - including, among others, the commitments to create and participate in workgroups about themes of common interest and to establish actions and programs, observing the principles of cooperative governance, the management in networks and the metropolitan insertion and integration. The idea is to reinforce the management system of Belo Horizonte's Metropolitan Region.

Peru characterizes itself as a unitary State, rather than a federal one. The political-administrative organization is formed by

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**In Brazil, ever since 1988's constitution delegated the creation of metropolitan regions to the States, there is a constant search for ways to enhance the management of those areas**

districts, provinces, departments (called nowadays regional governments). There are no metropolitan areas formally created or any other regulating instrument. In spite of that, the metropolitan territory recognized by all is Lima and Callao, called "Metropolitan Region of Lima and Callao".

In Mexico, the metropolitan area nucleus consists of City of Mexico and the Federal District, which, from its creation, has had a privileged position in the allocation of federal funds and a major role as the national capital. The relationship between the metropolitan area and the State of Mexico is reflected in the practice of some companies that pay taxes in Mexico City, where their headquarters are located, while some other establishments and operations are outside Mexico City, located in other counties and cities.

As per the law, the Federal District is defined as the repository of the national and state competences. This position as capital city and metropolitan area puts Mexico City in an important role at the state and at the national levels, regarding its governance.

In Brazil, ever since 1988's constitution delegated the creation of metropolitan regions to the States, there is a constant search for ways to enhance the management of those areas. São Paulo State created, in 2011, through decree no. 56,887, a governance structure to articulate the metropolitan planning. This structure is formed by the Metropolitan Development State System (SEDM - Sistema Estadual de Desenvolvimento Metropolitano), with the main purpose of articulating solutions, and planning - along with the cities - to solve the main regional bottlenecks. As part of the system, the Metropolitan Council of Development (CDM - Câmara de Desenvolvimento Metropolitano) has been created, as a State collective body; it consists of 11 secretaries and is chaired by the Governor. The Council is responsible for establishing the state policy for the metropolitan regions, sending the analysis of common problems that affect the cities, and it is consultive, regulatory and deliberative in character. It is currently under the authority of the State government's Chief of Staff. An Executive Office and the Metropolitan Action Executive Committee are also part of the system.

SEDM provides for each MR their own regional agency, as is the case of Agemcamp (Campinas' Metropolitan Agency) to RMC and of Agem (Baixada Santista's Metropolitan Agency) to RMBS. In the case of RMSP and RMVPLN, Emplasa also works as a Metropolitan

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## The Metropolitan Convention plays the role of superior decision-making agency and is responsible for defining the macro-guidelines of the region's global planning

Agency. The challenges to be faced in this territory are big, due to the great need of investments in the regional infrastructure, and to the importance of the problems to be solved.

The Metropolitan Region of Belo Horizonte (RMBH) is an interesting case study, having in mind its peculiar track record. RMBH currently comprises 34 cities, and has historic roots which are common to other regions in the country, which go back as far as the 1970's, under the protection of the military government. The Complementary Act no. 14, which created the first eight Brazilian metropolitan regions, has granted them a homogeneous treatment and assigned its management to a consultive and to a resolutive council. At RMBH, the councils had the technical support of a state planning institution: Belo Horizonte's Metropolitan Plan Executive Group (Plambel - Grupo Executivo do Plano Metropolitano de Belo Horizonte). Despite the centralizing and technocratic profile that has characterized planning during the military government, this institution, extinguished in 1996, has provided expressive normative advancements and investments.

In 2004, the Constitutional Amendment no. 65 reorganized the institutional arrangement of the metropolitan regions in Minas Gerais. The new arrangement, in force nowadays, is based on: The Metropolitan Convention, the Metropolitan Development Deliberative Council and an institution with a technical and executive character, Belo Horizonte's Metropolitan Region Development Agency (Agência RMBH). The planning instruments provided are RMBH's Integrated Development Urban Planning (PDDI - Plano Diretor de Desenvolvimento Integrado) and the Metropolitan Development Fund (FDM - Fundo de Desenvolvimento Metropolitano). The Metropolitan Conference, held every two years, increases the power of participation from the organized civil society.

The Metropolitan Convention plays the role of superior decision-making agency and is responsible for defining the macro-guidelines of the region's global planning, and veto, via a qualified quorum, decisions issued by the Deliberative Council. The Council is a collective instance and it comprises sixteen members, with equivalent representation among State and City. It is one of the few types of council in the metropolitan scope that incorporates the civil society in the deliberative realm.



## Metropolitan Region of Rio de Janeiro

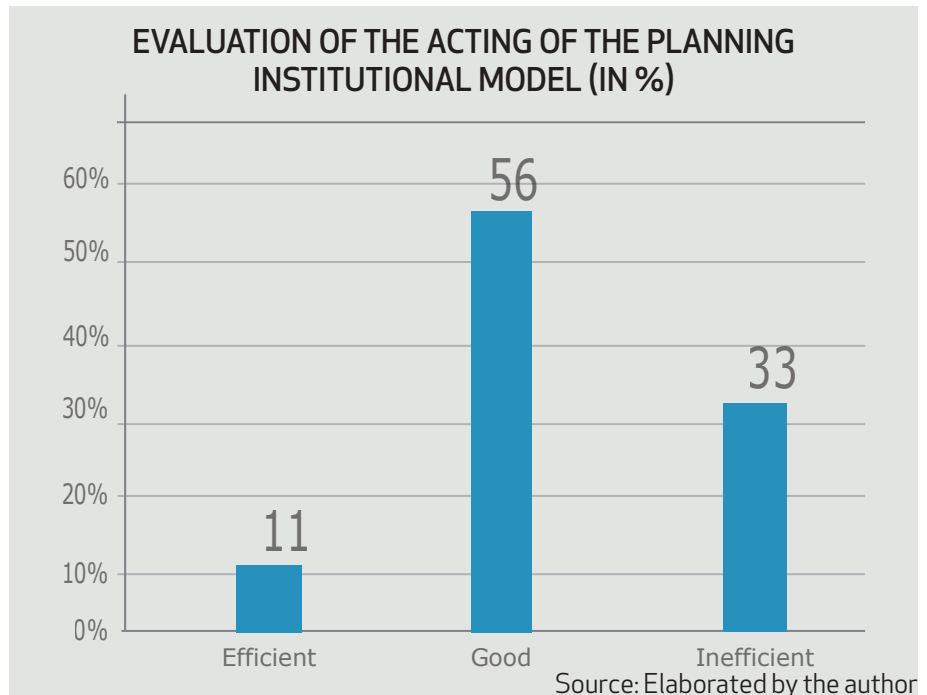
RMRJ does not have a metropolitan management entity for the planning and the territorial actions oriented from an integrated view of the metropolitan arrangement. The first and only initiative towards that goal has happened with the creation of FUNDREM (Foundation for the Development of Rio de Janeiro's Metropolitan Region). After its extinction, RMJR's management was pulverized - that is, several agencies within their competences, created their own regionalization. According to the Metropolitan Governance Plan led by the Applied Economic Research Institute (IPEA - Instituto de Pesquisa Econômica Aplicada), at the moment, it seems to be a consensus about the need of an agency to address the integrated management - and shared among the government, the private sector and entities from the organized civil society - of Rio de Janeiro Metropolitan Region, following a governance model. In 2011, Rio de Janeiro State Government created the Executive Committee of Metropolitan Strategies - currently the only agency which can be considered as an instance of metropolitan management. The Committee is an articulating entity created to enable the dialog among the several agents acting in RMRJ, since the planning of the metropolitan land in Rio de Janeiro is done in a fragmented way. Source: IPEA

The Development Council of Goiânia's Metropolitan Region (CODEMETRO - Conselho de Desenvolvimento da Região Metropolitana de Goiânia) is the instance of deliberative and regulatory character, responsible for the metropolitan management. Nowadays, the Council is under the responsibility of the Metropolitan Region Development State Office (SEDRMG - Secretaria de Estado de Desenvolvimento da Região Metropolitana) which shall promote the execution of the guidelines defined by CODEMETRO and the advising, as well as the administrative and technical support necessary for CODEMETRO.

Regarding the evaluation and the qualification of the organization and the acting of the planning institutional model, except for AMB, which evaluates the model as efficient, all other regions consider the current organization as good or somewhat effective, as per the graph below.

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## Representation from the private sector in the decision arrangements only happens in AMB, Belo Horizonte and Rosario



The questions regarding the participation or representation of other players in the planning and management models of metropolitan arrangements has shown that 70% of the partners considers the participation of other government spheres, and 60% of the civil society. The Belo Horizonte Metropolitan Region (RMBH) Deliberative Council is composed of sixteen voters, two of whom are representatives of the civil society elected in a metropolitan conference. In order to broaden the space assured for the organized society, the two representatives in the Deliberative Council and their respective deputies adopted, right from the first council meeting, the strategy of sharing their respective “mandates” with other representatives from the civil society.

Thus, a collective body has been constituted informally, currently composed of thirty members, integrated by representatives from popular movements, social movements, workers’ unions, businessmen connected to the production and financing of urban projects, academic and research entities, representatives from non-governmental organizations, among other participants from the organized civil society.

However, the representation from the private sector in the decision arrangements only happens in AMB, Belo Horizonte and Rosário. It is necessary to highlight that the legal formalization of the participation of several players does not ensure, in its own, the effectiveness of that representation. This question takes us to the problem of the intergovernmental coordination; that is, the formats the integration and the sharing of the decision in the different spheres of government take.

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## The largest part of the MRs presents frailties in the institutional arrangements

Particularly in Brazil, where a great deal of the partners in the Initiative are located, it is observed that even in the structures assembled after the 1988's Constitution, there are still obstacles for the operational models which ensure the shared management. Although it is possible to see different models and criteria of institutional organization, the common fact is that almost all are of little effectiveness.

By law, the civil society integrates most of the councils of the metropolitan regions, but experience has been showing that there is no effective participation at the consultations for the planning of actions, and neither in the decisions. Another point is the parity structure among the entities - which in many cases is supported legally, but is merely abstract in character, since the wealth and population gap among the municipalities precludes, in practice, a voluntary cooperation.

In Rosario's Metropolitan Area, the initial stage of formation causes the efficiency degree of the participation to vary according to the agendas being discussed. Currently, with the formation of the metropolitan entity, there is an intense work with the local governments at the political level (mayors and commune leaders, and government areas in Santa Fe province) and also at the technical level (employees in each area). A high level of participation is observed.

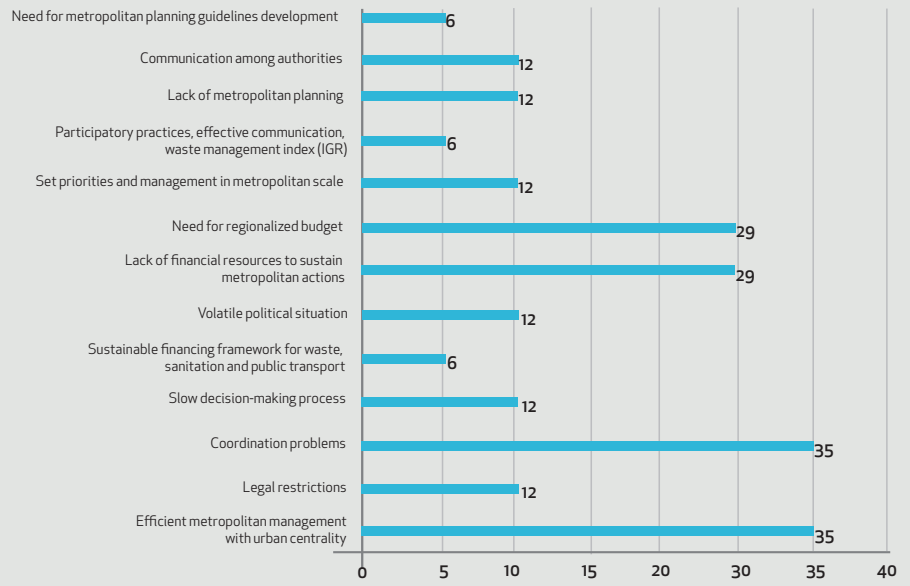
According to Rojas (2010), when the economic activities and the populations penetrate in territories under the jurisdiction of several local authorities, we see a misalignment between the areas affected by investment decisions and the territories represented by the elected authorities<sup>13</sup>.

In sum, with a few exceptions, the largest part of the MRs presents frailties in the institutional arrangements that should support management, which undoubtedly constitutes an element that prevents territorial and social pacts.

To Lefèvre (2008), the most recent international experiences point towards the strategic role of the articulation and the agreement among the several players and territorial power scales, for the sake of a metropolitan program, which transcends any institutional engineering. To this end, the exploration of new institutional structures - designed in a more flexible way and adjusted to the economic, political and territorial history - is fundamental for the results of the study.

<sup>13</sup> See ROJAS (2010)

## GOVERNANCE - MAIN ISSUES (IN %)



Source: Elaborated by the author

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# 06.

## METROPOLITAN FUNDING

At the metropolitan financing matter, we can find a series of obstacles which seem to be common to most regions. We may mention the overlapping juxtaposition of distinct political jurisdictions which act on a territory, where heterogeneous populations live and work, and where they, many times, demand for different types of special services<sup>14</sup>. The complexity of policies of urban mobility for passengers, sanitation, among others, - to be carried out - demands elevated financial resources which are normally distributed in an unequal manner over time.

Most cities that integrate the metropolitan regions have no conditions to come up with such large sums, and the execution of the actions usually goes beyond the mayors' political mandates, which ends up generating a lack of interest on the part of the elected authorities.

Other barriers to funding are the huge asymmetries discrepancies on tax bases and in the financing capacity among metropolises, a result from uneven economic and population levels in the cities that comprise the same region. Not rarely that results in an autonomous behavior in response to public policies, with a local view of problems which are in fact metropolitan. This aspect always constitutes a matter of dispute when it comes to building political consensuses, and frequently, it happens that the investment efficiency is jeopardized.

In this regard, it is possible to highlight the discrepancy between the investment ability from the set of cities that integrate metropolitan regions and the ones from the state and the federal government.

Besides that, the possibility of indebtedness, particularly from the cities with less economic dynamism, restricts the taking out of loans to participate in the sharing of the financing of policies and metropolitan projects.

<sup>14</sup> See REZENDE (2010)

This gap requires the preparation of specific models of financing, and it reinforces the importance to incorporate the three government levels to deal with the issue of financing great projects and constructions. However, not always is it clear to managers, legislators and even to society, which new institutional structures are necessary to take care of those problems, both because of the complexity the matter demands and the financing method the metropolitan investments require.

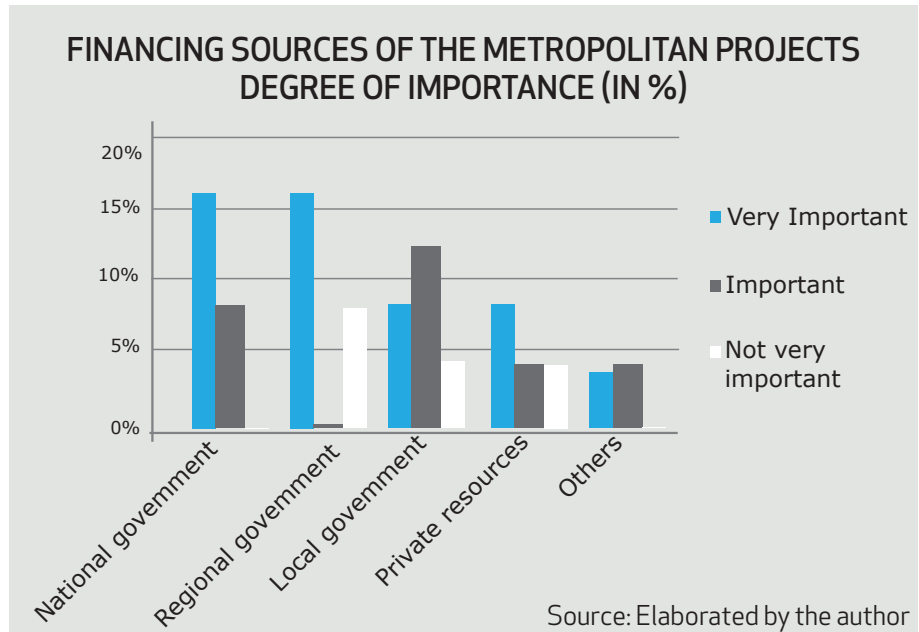
Regardless of the format the governance structure assumes, financial resources are needed to cover the infrastructure expenditures. There are several instruments available to finance the metropolitan actions, from the most traditional ones - based on taxes - to others which are more contemporary, such as public-private partnerships, consortia, concessions, urban agreements, surplus value over the value of land, etc.

To this end, an important purpose of the project is to understand which are the bases for the metropolitan financing among the partners in the Initiative. The attempt to obtain an answer to the questions below has guided the questionnaire sent to the MRs:

- **What are the metropolitan governments' main sources of financial resources?**
- **What is the level of autonomy of each jurisdiction in the access to loans and their own resources?**
- **Is there a stability for the rules that regulate the mechanisms of metropolitan financing?**
- **What is the role played by the private sector in financing?**



The graph below shows that the national and the regional governments are the main financing sources of the metropolitan projects among the Initiative partners.



Some governance structures incorporate financing mechanisms through financial funds that, in a general way, have been showing to be insufficient to cover the investment volume needed to ensure the competitiveness of the metropolises and ensure life quality to its inhabitants. This type of restriction or frailty ends up generating uncertainty and delays in the decision-making. All of Brazil's partner MRs, except for Curitiba, have the metropolitan fund figure in their institutional structures, with 50% coming from the states and 50% from the cities.

In spite of that, when the importance of the fund resources is assessed to finance metropolitan projects, all of them reveal that the amounts are not enough for the investments in infrastructure.

There are different situations regarding the metropolitan financing of the partners in the Initiative. At AMB, the figure of a metropolitan fund does not exist, but the financing is ensured by a wide range of incomes coming from various sources, among which are: 1) contributions based on the participation in the income from the state; 2) contributions from metropolitan cities, assessed upon the income of personal property; 3) program-contract on transportation, signed with Generalitat de Catalunya, the state and AMB, through which the contributions from each administration are determined, for the maintenance of the metropolitan transportation system; 4) public transportation fares; tax levied upon the mobility, paid by the metropolitan citizens as per

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## With the exception of Valley of Mexico and Rede 10, all the partner regions have some kind of legal regulation for public-private partnerships

the value of their real estate; 5) metropolitan fee for the treatment of waste; and 6) fee for the financing of the sanitation. AMB's example shows that clear and specific sources of financing are essential for the development of an incentive to coordinated action.

In the Metropolitan Region of Buenos Aires (AMBA), the local governments are the ones that assign the resources for the metropolitan financing, and there is not a metropolitan fund in the model. In the Valley of Mexico, 0.4% of the federal budget is destined to the metropolitan regions, but the resources are of little importance before the financing challenges. The local governments are the ones that have the greater influence in the choice of regional projects, as per 60% of the answers. This fact reveals the absence of an integrated planning in the metropolitan context.

All those questions are inserted in the metropolitan governance model to be adopted, hence the need to seek new paths for the public management of the metropolises - also covering the demand for a higher cooperation effort from the different players involved and financing methods which incorporate public and private resources.

The investment in urban infrastructure is, by its nature, intensive in capital and normally distributed over long periods, unlike health and education, in which the current expenditures are predominant (staff, maintenance, etc.)<sup>15</sup>. In this context, the importance of the public-private policies was sought to be explored as the metropolitan investment alternative financing methods.

With the exception of Valley of Mexico and Rede 10, all the partner regions have some kind of legal regulation for public-private partnerships, normally provided in a federal and also in a state law. However, when the weight of the partnerships in metropolitan financing is analyzed, it is verified that more than 60% of the MRs consider the weight of the partnerships of little importance for the execution of the actions. Probably, this finding may be so due to the contemporariness of the theme, and because of the short length of existence of the regulation structures of PPPs.

To this end, an important component of the study is, as per the experiences shown by the partners in the two on-site workshops, to raise some questions:

<sup>15</sup> See GARSON (2009)

- How can we induce a new governance with the participation of several actors, mainly the private sector and the civil society?
- How can we explore the new institutional structures which lead to the shared agreement and management?
- How can we define the role of the private sector in the financing and the provision of services?
- Public-private partnerships, interfederal consortia, investment funds covering several government levels and concessions: which may constitute efficient mechanisms for the metropolitan financing? What has the experience been demonstrating?

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# 07.

## NEW GOVERNANCES - THE EXPERIENCE OF THE PARTNERS

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### PUBLIC-PRIVATE PARTNERSHIPS, CONSORTIA, AGREEMENTS, AND URBANISTIC CONCESSIONS

In the two on-site seminars of the Metropolis Initiative “Comparative Study on Metropolitan Governance” (April 2012 and April 2013), there were presentations of the experiences in new governance and metropolitan financing methods, followed by a workshop in which the main difficulties regarding the insertion of the private sector in the financing methods were surveyed.

The main purpose is the disclosure of good practices and alternatives to promote the metropolitan governance, and for the financing of projects which may be applicable to the different realities, especially for highlighting the challenges to be pursued to the emerging metropolises. Despite the impossibility to find models which fit the diversity of situations found in the metropolitan areas of emerging countries, the report of several experiences allowed the identification of the most relevant aspects to be observed in the construction of the best arrangement.

The Initiative proposed, as a case study, Rosario’s experience, with the urban renewal and qualification of Paraná River area. For further knowledge, two technical visits were conducted (December 2013 and April 2014) with aims to get to know the building process for the governance and for the instruments that guided and supported the financing of projects.

#### **Case Studies Metropolitan Area of Rosario (AMR)**

Rosario’s Metropolitan Area (AMR) expresses a dynamic and heterogeneous set of cities located south of Santa Fé province, united by the geographical proximity and by the presence of common problems. It extends west, from the mouth of Paraná river to AO12 highway, and in the North-South direction, as a linear string along the coast. With its center in the city of Rosario, the AMR concentrates more than 1,400,000

inhabitants who live in 1768 km<sup>2</sup> of land, with a population density of 740 inhabitants per km<sup>2</sup>. It is a territory with a complex social and economic reality, which presents significant levels of functional binding and dependence.

In August 2010, from the initiative of the local governments that integrate AMR, the Metropolitan Coordination Entity (ECOM - Ente de Coordenação Metropolitana) was created. The cities and communes in the region, from then on, have an instrument which serves as a space for coordination and promotion of public policies of regional impact, and also as an agency for conducting the development of projects in a metropolitan level, and those are organized based on a strategic association of the local governments. ECOM's president is Rosario's mayor, that counts with an organizational structure composed of a Government Council - integrated by all mayors and presidents of the communes; a Directory, constituted as an executive agency for the Council's decisions, and as the entity's legal representative. It also has an Executive Office and a Consultive Technical Council. The 21 locations which integrate it are: Acebal, Álvarez, Alvear, Arroyo Seco, Coronel Domínguez, Capitán Bermúdez, Fighiera, Funes, General Lagos, Granadero Baigorria, Ibarlucea, Pérez, Piñero, Pueblo Andino, Pueblo Esther, Ricardone, Rosario, San Lorenzo, Soldini, Villa Gobernador Gálvez and Zavalla.

The Metropolitan Unit for Strategic Planning and Management exists to follow up and guide the development of Rosario's metropolitan region through the participation of public, institutional, private players and also technical representatives from the cities and communes in AMR.

Rosario city has developed a successful experience from the preparation of its Rosario Strategic Plan, in 1998 (PER - Plano Estratégico Rosario) and then 10 years later, with the Metropolitan Rosario Strategic Plan (PER+10) - instruments that were applied simultaneously to the development of an urban planning.

As a product from that 15-year path of the Strategic Planning, it was possible to start now a phase of extended planning, adopting the perspective of a metropolitan territory, which demands not only a change of view, but a more complex participation from the players involved. In this new landmark, conceiving the "metropolitan" concept implicates in operating a territory which is passive to constant changes, through a more complex approach and an integrating thinking, which allows to face and solve the common problems in a scale which corresponds to their relevance level.

With the creation, in December 2011, of the Metropolitan Unit for

Strategic Planning and Management, an agency from Rosario's Municipal Government, came the opportunity to conduct a joint effort between the communes' technicians and AMR's cities, as well as the regional and national offices. The Agency, along with those players, is intended to develop the whole evaluation of the territory, to establish common policies and to agree on metropolitan management guidelines. The protagonism from Rosario city is reinforced in the articulation and planning of the metropolitan policy.

#### **The Metropolitan Unit establishes, as strategic objectives:**

- To develop and share technical information which enable to approach the region problems from a metropolitan view (database, indicators);
- To drive the creation of multilateral agreements with intense participation from public and private players, with aims to obtain synergy among the relevant players and institutions;
- To propose and organize a common stance in terms of specific rules and regulations, agreed among the several cities in the region;
- To offer help to different areas in the cities and communes, which are members of the Metropolitan Coordination Entity (ECOM), in developing and managing projects;
- To manage the resources to conclude the projects prepared;
- To study the problems identified by ECOM from a strategic perspective.

Besides the strategic planning process developed by Rosario in a local scale, the Urban Planning process (Plan Urbano Rosario – PUR) was also strengthened. In the portfolio of projects with this character, it stands out a transformative project for the city of Rosario: the revitalization of North Port.

The legal mechanism used to regulate the public-private relations, and as a management institutional arrangement among the parties involved was the urban agreement - figures in Rosario's Urban Plan (PUR). At the responsibility assignment matrix, the municipal government initially assumes the central role of planning agent for the actions which structure the physical and functional transformations of a specific area of the city, through a Special Plan<sup>16</sup>. After that, the Detail Plan<sup>17</sup> is executed, and it provides the accurate detailing of the previous

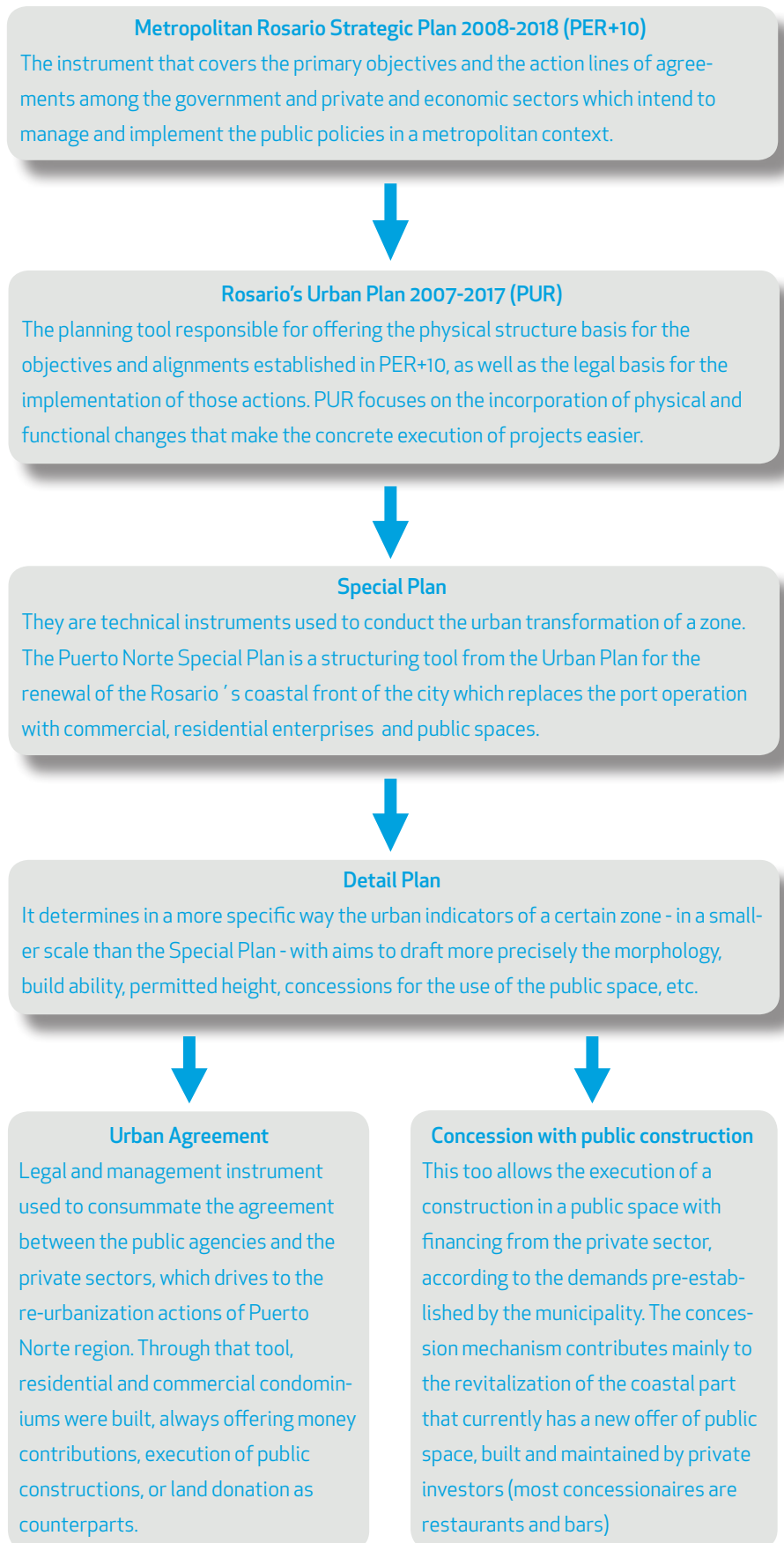
<sup>16</sup> The Special Plan details the technical project particularities of a certain city sector (set of streets, avenues, squares), detailing the configuration particularities proposed for the public and private areas.

<sup>17</sup> The Detail Plans are developed by the Municipal Development Department as per the urban management objectives and principles provided in Rosario's Urban Plan (PUR) and in the Special Plan.

plan, followed up by a negotiation promoted by Rosario's Municipal Government among the remaining public and private players involved in preparing and implementing the detail plan. Finally, after the study process which recognizes the financial feasibility of private projects capable of supporting the city development, the urban agreement is signed and it consists of a regulation instrument of the commitments made by the municipal government, the landowners and the private entrepreneurs, allowing the private interventions to start.

In this line, Rosario has successfully used the urban agreement for the execution of several projects, among which Puerto Norte stands out. In this case the agreements signed ensured the creation of a large number of public constructions. In order to completely revitalize the whole coastal front of the city, the municipal government also implemented the concession mechanism to promote public construction financed by the private sector.





## The modeling of Puerto Norte is summed up, in a general way, to a public planning project with investments, execution and maintenance up to the private sector



<sup>18</sup> The following took part in the visit to Rosario: São Paulo's Municipal Government - Metropolitan Affairs Coordination; Goiânia Metropolitan Region; Curitiba's Municipal Government and Metropolitan Regions from São Paulo State.

<sup>19</sup> Each detail plan specifies the construction technical indicators, the need for preserving real estate, and it also establishes the schedule for public constructions which are the government's and the private sector's responsibility.

### Puerto Norte - Recovery of a public space through public-private agreement

During gatherings promoted by the Study coordination, the Metropolis Initiative Partners pointed out the Puerto Norte experience as one of the most representative, not only due to the planning mechanisms, but also due to the financing instruments employed, having the participation of public and private players. To this end, a mission was conducted in Rosario, with the presence of some partners from the Initiative<sup>18</sup>, intended to immerse in the Puerto Norte case, for getting further information on the negotiation process executed.

The origin and development of Rosario have always been bound to Paraná river, but, for years, the city grew with its back to the river. Besides the important landmark in the process of urban renovation, there was the desire to alter the public access to Paraná river, with a series of interventions, among which the construction in Puerto Norte stands out. The process was started with the release of an international contest for Ideas and Preliminary Drafts, in 2004, intended to integrate the Port 100ha to the city. Capable of connecting the northern region to downtown, the project was divided in eight units of execution to incorporate and negotiate the joint action of important public and private players. 7 detail plans and 7 public-private agreements were made.

After the transference of the Port activities to the south of Rosario, started a degradation process of the unoccupied area. The series of urban interventions which Rosario underwent in Paraná river coastal strip is one of the most emblematic projects in the region, for the reassessing of waterfronts and the creation of public spaces with limited tax receipts.

Rosario's management model for this project included the concept of public appropriation of part of the lots. This way, 42 ha (0,42 km<sup>2</sup>) out of the 100 ha (1 km<sup>2</sup>) which integrate the area were recovered for the public use, with the preparation of six agreements signed with the landowners - which legitimate the detail plans<sup>19</sup> prepared by the municipality. In all the agreements established between the municipality and the private sector, the entrepreneurs had the commitment to donate 40% of their land for the public space, where parks, squares and sidewalks were built, which made the access to Paraná river more democratic.

The modeling of Puerto Norte is summed up, in a general way, to a public planning project with investments, execution and maintenance up to the private sector.

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## The laws arrive when we are mature enough for them to do so

It is also important to point out the surplus value over the value of land that promoted the re-distribution of the urban development benefits to social purposes. The way to raise capital from the private sector is done through money contributions, direct execution of the public constructions, or donation of land.

### **New step: the metropolitan projection**

The composition of Rosario's Metropolitan Region is characterized by the integration concept via functional interdependence. The model is the one of voluntary association of municipalities, and it has been created through a voluntary agreement among municipalities and communes, overseen by the local legislative agencies.

"The laws arrive when we are mature enough for them to do so. If we had laws without all this work, nothing would work. It is not something that works through imposition", Mirta Levin, Metropolitan Unit Director.

That way, the configuration of the metropolitan territory come as a social construction process that has as main elements the organization strategy of its players and the type of institutions that shape it. The development strategy is supported mainly through public-private negotiations.

At the present time, in terms of metropolitan governance, Rosario's MR resumes its activities with the institutionalization of the Metropolitan Coordination Entity (ECOM), a voluntary association composed of 21 municipalities which, guided by a Government Council, discuss strategies for metropolitan development.

Then a negotiation process is started between Rosario and the cities in its metropolitan area, with the purpose of identifying and confirming joint alignments of actions and special projects for the region. To this end, the experience in strategic and urban planning developed by Rosario - in its local scale - returns to the agenda, now being redefined in an extended territorial and institutional context with the interaction of a different and more complex set of players.

To approach AMR's problems, general and sectorial diagnoses have already been prepared, which resulted in the following

analyses:

**Issues:**

- Expansion process of cities - scattering of the urbanization processes;
- Lack of connectivity among the metropolitan corridors;
- Lack of an integrated transportation system.

**Opportunities:**

- Availability of a territorial infrastructure;
- Existence of several locations of historical proprietary interest;
- Existence of strategic locations for public spaces and metropolitan equipment.

Recently, in May 2014, the territorial management guidelines were presented, and they were translated in general recommendations to be agreed by the different players, with the aim of guiding the complete transformation of the AMR and establishing the bases for the development of the Local Urban Plans. This is the basis for the metropolitan agreement. The territorial management guidelines were produced jointly by the 21 locations integrating ECOM. They are:

- 1) Definition of urbanization and use of land standards;
- 2) Protection and optimization of environmental resources and proprietary funds;
- 3) Structuring of the accessibility and connectivity, in an efficient way;
- 4) Promotion of a full development of production and services;
- 5) Improvement of the environmental sanitation and infrastructure conditions;
- 6) Strategic and associative coordination of players;
- 7) Balanced distribution of equipment and services, from several centers.

## Key Findings

- *Rosario's experience shows the unusual fact of a municipality that takes the initiative to form a metropolitan region and negotiates its strategic planning policies;*
- *Rosario's planning has always had a "metropolitan view". The construction of the metropolitan thinking was started in 1968 with Rosario's Regulating Plan, which required the municipal government to manage agreements among the communes to discuss the effects of the application of measures provided in the plan;*
- *The region does not receive funds from the federal government, and the funds from the province, the municipalities and communes are scarce. Hence, Puerto Norte's financing was made entirely with private capital;*
- *In order to involve the private sector in the projects, the practice of planning over medium and long term during a long time was essential;*
- *The approximation and the agreement process between the municipality and the private sector was an important mechanism to guarantee the entrepreneurs projects financial feasibility and the installation of public spaces;*
- *There was always transparency in the regulation of the instruments that impact the land market;*
- *The creation of a fund was fundamental so that the government may exert its right of first refusal;*
- *The establishment of guidelines of territorial management at the metropolitan level presents itself as a concrete action affecting the planning, acting as a cornerstone for the implementation of integrated public policies in AMR;*
- *Because they arise from a voluntary assemble of cities which share common desires, and with the presence of diverse social players, the "bottom-up" arrangements may demonstrate efficiency, but, in some cases, the development of that form of cooperation ends up demanding a sort of institutionalization, with aims to its long-term maintenance and the need for dialog among the other governmental instances.*
- *When compared to other world metropolises which are*



*partners in the study, Rosario presents a lower level of urbanization. In spite of that, the agreement model between the government and the private sector is shown to be possibly reproduced in other metropolises.*

#### Rosario - With few resources, more green space

Becoming an international reference in the subject of renovating public spaces, Rosario has been the target of a study from the Emerging and Sustainable Cities Initiative, coordinated by the Inter-American Development Bank (IDB). The Initiative has promoted gatherings on the recovery potential of rivers and coastal fronts inserted in the urban rearranging plans and used Rosario's experience as a reference to other cities.

"Rosario has demonstrated that, with few resources, it is still possible to recover the contact with the water, and what was the dream of a few citizens 15 years ago, now is a reality".

From an urban development plan, concluded through an intense public-private cooperation, Rosario stands out today as the axis of natural and urban spaces which increase the urban value, promoting the reorganization of the territory and providing the increase of green areas from 2.5 to 11.6 m<sup>2</sup> per inhabitant in 15 years.

Source: See SOULIER 2014

### **Metropolitan Area of Buenos Aires (AMBA)**

**Theme:** Urban renewal and social housing

**Financial instrument** - Urban Value Capture

Working with three strategic axes - equitable and inclusive city; productive, creative and innovative city; and citizen-participating and associated management city - the urban requalification plan from AMBA encompasses action plans with feasible instruments. In the first axis, the raised capital from the surplus value may be an instrument which results in a better distribution of costs and benefits generated by the urban developments as an attempt to eliminate the city structure gaps. Another instrument is the contribution for improvements, since the intervention may benefit the rest of the taxpayers grant to the property owner. Part of this benefit must return, so it is used by the whole society. In the



second axis, the action plan provides a better sustainability of the public investments in negotiation with the private sector, through several kinds of association. To build the third axis, the action is executed through the strengthening of society-participation mechanisms.



The project called Barrio Parque Donado-Holmberg has tried, through the urban requalification, to solve a social problem that had been happening for twenty years, with 600 people living a critical situation in regards to housing and the degradation of the surroundings. The chosen solution included a mix of residences for low, medium, and medium-high incomes. Social public facilities were built, such as schools, multi-sport centers, community centers, and the headquarters for the metropolitan police. The construction of a 17,000 m<sup>2</sup> linear park is also foreseen. When it comes to mobility, there is a road plan under construction, with the elimination of urban barriers. From the environmental standpoint, the project intends to make use of solar energy.

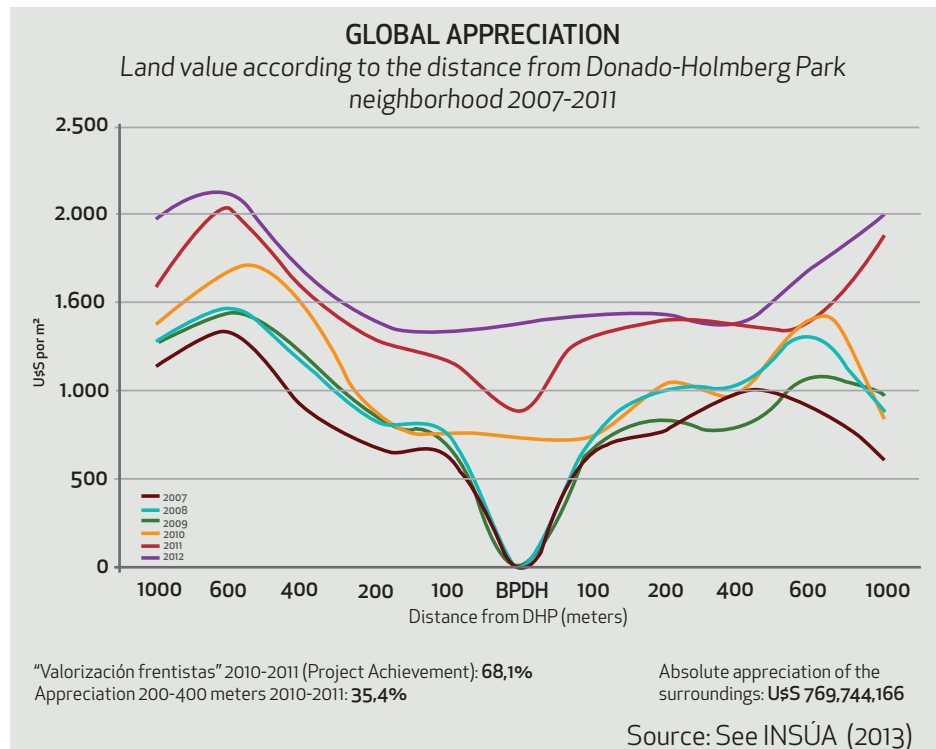


The development of this project was based on a combination of public and private interests, and the private sector was responsible for building the public space, which is an innovative element in the case of Buenos Aires. An Urban Renovation Fund was created, with funds obtained from the slow selling of the land, for the reinvestment in urban integration and renovation projects in the extended surroundings. The capture and reinvestment of the urban value are done through a mechanism of gradual adjustment of the selling prices, allowing the capture of part of the value generated by the project, avoiding, at the same time, speculation.

The gain obtained from the selling of public lots has exceeded the initial expectations. Buenos Aires still keeps an important asset: 40% of the original real estate, according to Fernando Alvarez de Celis, Planning Director of the Autonomous City of Buenos Aires.



The graph below shows the land price dynamics between 2007 and 2011.



Although under the leadership from the state, the project has gained transparency and legitimacy from the citizen participation. There were previous consultations to define the project, there was a participative census for beneficiaries and there was participation in the legislative debate.

### Key Findings

- *The low-scale urban renewal may be considered as a laboratory for other more complex urban development projects foreseen for Buenos Aires; The process used in this case may also be applied to other regions in the world;*
- *The inclusion of social housing in a middle-class neighborhood breaks the stigma of the construction of social housing in distant and segregated locations;*
- *Creation of public facilities through funds coming from the capture of value arisen from the land appreciation;*
- *The political and economic weight of Buenos Aires precludes the institutionalization of the region. However, improving the coordination means to legally recognize the metropolis.*

## Metropolitan Region of Belo Horizonte - RMBH

**Theme:** Urban Solid Waste (USW)

**Financial instrument** - Inter-federation Agreement and Public-Private Partnership

The improper disposal of solid waste has been generating a serious environmental problem for many cities, resulting in pollution of the water courses, air and stimulating the generation of degraded areas.

It turns out that most of the Brazilian municipalities have difficulties and limitations which prevent them from facing this issue alone. Most of them are small municipalities, with limited budgets and without enough waste volume to guarantee the economic feasibility for enterprises.

In 2010, the Brazilian federal government approved the law that established the National Policy for Solid Waste (PNRS - Política Nacional de Resíduos Sólidos), an instrument destined to guide the strategic actions in the environmental area, outlining guidelines, strategies, and goals for the future. The Policy aims at a more proper disposal of solid waste from the various producing sources, and not only the domestic waste. It also foresees the end of the improper management of the trash, thus excluding the step of disposal in the famous "dump yards". The municipalities which do not have proper systems shall implement adequate landfills, or go beyond that, adopting more advanced waste management systems. In order to be more feasible, these alternatives will demand minimum levels (adequate quantities of trash to make up for the investment) and the convenient proximity to the municipalities, since the waste transportation is one of the more expensive components of the solid waste disposal or treatment process.

Such circumstances create a favorable environment for close cities, occasionally in a conurbation, to study cooperation ways to adequately deal with the garbage they produce.

This was the process conducted by the Metropolitan Region of Belo Horizonte and its Metropolitan Belt, with the support from the State Government. The government had already been promoting studies aiming at a proposal for grouping the municipalities, so the USW could be managed jointly. The studies originated the Optimized Territorial Arrangements (ATOs - Arranjos Territoriais Ótimos)<sup>20</sup>, a proposal that sought to make

## The competence for the management of solid waste lies in the municipalities



technically and economically feasible for the municipalities to manage their waste in an integrated way.

In 2010, Minas Gerais State released an Expression of Interest Procedure (PMI - Procedimento de Manifestação de Interesse) (please see page 66) inviting the municipalities, public civil associations, and the private sector to contribute in the structuring of the State Plan of Public-Private Partnerships and in the implementation and operation of the services regarding the urban solid waste treatment. PMI has taken into consideration the format of 51 groups with at least one hub city and, preferably, with a population of at least 100,000 inhabitants. The Optimized Territorial Arrangements (ATOs) proposed the organization of a certain number of grouping of municipalities in which the distance among them were of approximately 30 km. After the consolidation of the reports received during the PMI, Minas Gerais State found necessary to choose a region of the execution of a pilot project, approving then the Public-Private Partnership project for the exploration of the services of transshipment, treatment, and final disposal of the USW in RMBH and in the Metropolitan Belt. The competence for the management of solid waste lies in the municipalities, and, to start the process, in June 2012, a cooperation agreement was signed among 44 of the then existing 48 municipalities in the Metropolitan Region and in the Metropolitan Belt for the shared management of the transshipment, treatment, and final disposal of the urban solid waste. The State Government, in turn, received from the municipalities, through a schedule contract, part of the competence; that is, it was up to the State Government to contract a Public-Private Partnership (PPP) for the exploration of the services of transshipment, treatment, and final disposal of the urban solid waste. In the schedule contract, the municipality commits to pay around 20% of the contribution of funds for the operation of the PPP and the 80% remaining to the State. The basis for the calculation formula to pay the private partner is the quantity, in tons, of garbage generated in the municipality that shall be delivered to the transshipment station, or directly to the Urban Solid Waste Treatment Central. The shared management among the government, the municipalities, and the private sector will allow for the reduction of the cost of the entire process, and for the increase in efficiency of several services such as the elevation of the indices for reuse and recycling, energy production - which may be done through methane gas, fuel derived from the waste, and the socio-productive inclusion of trash pickers through their organizations.

The municipalities will keep being responsible for the household

<sup>20</sup> See SEIXAS; CALDAS JUNIOR; ALMEIDA (2013)

waste collection, and shall fulfill some requirements from the state, such as implementing selective collection and supporting organizations of waste pickers. The partner company shall be responsible for the investments in transshipment, treatment, and final disposal of the USW. The PPP - an administrative concession - was signed in 2014, and three companies united in a consortium were the winners.<sup>21</sup> The contract is valid for 30 years, and the total amount was USD 1,032 billion. The construction of transshipment stations shall happen in 12 months from the signing of the contract, and the construction of the Treatment Center, in up to 48 months, also from the signing of the contract.

The inter-federation cooperation model, in which the municipalities get together in forming and consolidating a consortium solution, in spite of the long process for its structuring, given the institutional complexity, is shown to be highly productive. It is also a contemporary proposal, once it permits the processing and the solution of the problem in an associated way, with bulk gains and sharing of spaces, personnel, funds, and materials. The project shall help approximately 3 million people, which represents 15% of Minas Gerais' population. That percentage produces around one fifth of all urban solid waste generated in the state, which corresponds to an estimated daily generation of 3 thousand tons, in average, through three decades of the contract. The process, however, was lengthy with advancements and regressions, resulting in some lessons to be learned.

### Key Findings:

- *In Brazil and in several places around the world, the political class is not used to sharing structures and power. Because of that, the consolidation of the consortium proposal took a while and required a great negotiation ability. It is necessary to point out that, even after the consent from each mayor to take part in the Cooperation Agreement which formalizes the consortium solution, the execution of the schedule contract which establishes and regulates the mutual obligations among the federation entities involved was not concluded.*
- *There is still a great deal of immaturity in the dialog between the government and the private sector, mainly regarding the evolution of a PPP. The first procurement process for the PPP in November 2013 had no bidders whatsoever. Minas Gerais' Government revised the partnership terms and release and new procurement process in 2014, successfully this time<sup>21</sup>;*
- *Right from the start, the State Environment Office, the*

<sup>21</sup> The bidding process winner was the Consórcio Metropolitano de Tratamento de Resíduos (CMTR - Waste Treatment Metropolitan Consortium), composed of three companies. The total amount of the contract was around USD 1.040 bi for the 30 years of its term. As for the amounts per ton to be paid to the Consortium by the State, they will be aprox. USD 33,73 for Batch 1, and of R\$ 30,74 for Batch 2; USD 7,67 from those amounts are related to the Municipal Compensation Installment.

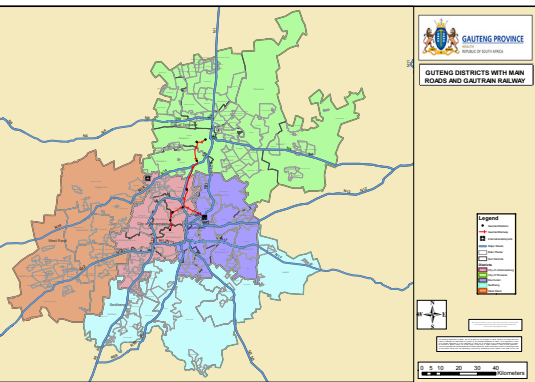
*Economic Development Office<sup>22</sup>, and the State Prosecution Office were participants. The latter is also an intervening party. With that, there was a higher efficiency and an assurance of the preservation of the civil society's interests.*

- *The opportunity must be taken outline the proper governance for the consortium solution, foreseeing the participation of various stakeholders, who must figure, whenever possible, in the governance structures, thus formalizing their support to the projects.*

## Metropolitan Region of Gauteng

**Theme:** Urban mobility

**Financial Instrument:** Public-Private Partnership



With 12.3 million inhabitants the region of Gauteng has the smallest area in all South Africa's provinces (1.4% of the country's total) and makes up for 34% of the national GDP. It houses three metropolitan municipalities, two district municipalities, and six local municipalities<sup>23</sup>.

3 PPP experiences were presented: 1) Gautrain; 2) Gauteng Freeway Improvement Project (GFIP) and 3) Gauteng-FreeState-Durban F&L Corridor.

Gautrain is a fast-train line, with 10 stations. The line connects economic axes of great importance from the North to the South, and also has an East-West connection, also reaching the airport.

As benefits, the line reduced the road congestion which was growing at a rate of 7% per year for more than a decade, the dependence on the public transportation on wheels, and the need for private vehicles. It has also motivated the execution of the space development objectives and improved the global sustainability in the urban environment, and it also stimulated investment and the economic development.

Challenges were faced when the discussion regarding the project was started in 2000. There was an intense debate over the project, between Gauteng region and the national government, about the competence and the costs; and with the unions and community organizations about the "elitist" nature of the project. Other public transportation operators also inquired about the potential competition, and the division of subsidies in the public transportation.

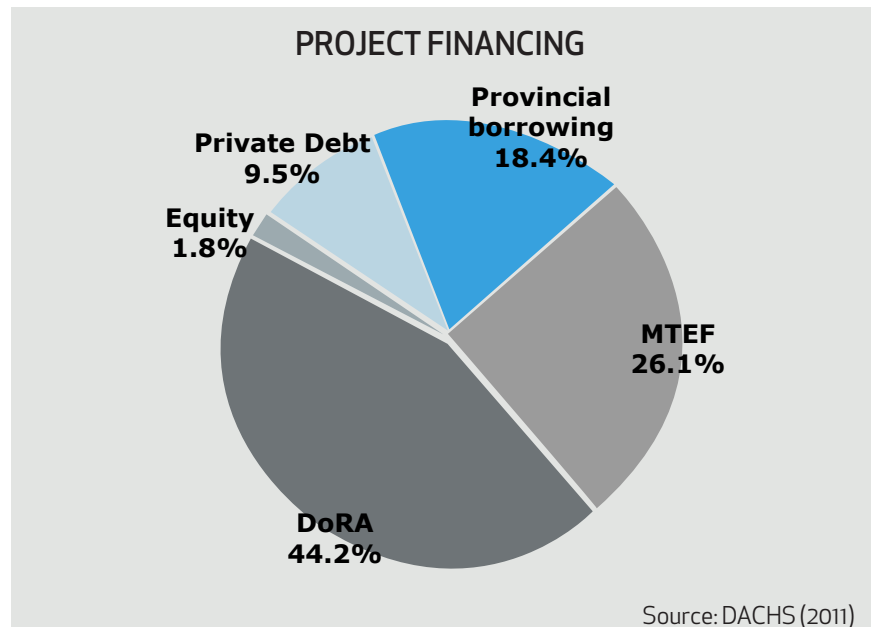
The project was structured as a PPP, to be finished in 20 years,

<sup>22</sup>In Brazil, the State Prosecution Office (MP - Ministério Público) is a State Agency which defends the legal order and inspects compliance with the law in the country. The MP is included in the essential functions to the justice, and is not bound in practice to any of the State's branches. It is the MP's duty to defend the national and the public property, and the public equity.

<sup>23</sup>The Constitution provides three government spheres: national, province, and local. The local governments are divided in metro (single tier), and district and local municipalities (two-tier in non-metro areas).

the government being in charge of: the regulation structure, lots, subsidies, and guarantees. With the concession, the private sector executed the project and the construction, and was also responsible for the operation and maintenance. The users pay a fare to use the service.

The amount of the concession contract from 2006, in nominal terms (2011) was USD 3.85 billions. Gautrain had five different sources of financing: resources from the federal government, through the Transportation Department (DORA), Gauteng Province Government (MTEF), owner's equity from the private sector, financing from the private sector, and public loans taken by Gauteng province.



#### Other Projects from Gauteng Region

Given the characteristics of Gauteng of being the largest domestic market, and a key center for logistics both to South Africa and to neighboring countries, Gauteng-FreeState-Durban (G-FS-D) is a strategic project for national infrastructure, destined to improve the transportation and the logistics in the territory. The project is still in its beginning, and it is being conceived as a PPP, gathering several partners: government national services and regulation agencies, state companies, three province governments, and the private sector. Given the diversity of players involved in this project, it would be interesting for the Initiative to be able to follow up



the development of the several phases, since this model must bring many lessons when it comes to political negotiation mechanisms, and the exercise of political leadership to carry out the project.

### Key Findings:

- *The national regulation structure (supervised by the National Treasury) for PPP is very costly;*
- *Inter-government issues, such as competences and the existence of too many players delay the structuring process of PPPs.*
- *The political will is fundamental for the project (Gautrain = very strong and GFIP = moderate);*
- *The participation and acceptance from the public are fundamental elements, especially when the user is also a payer;*
- *Deal with and mitigate unexpected events is a big problem; for example, sinkholes and water infiltration during the construction of Gautrain, adding unexpected costs.*



### REVITALIZATION OF RIO DE JANEIRO'S PORT CITY - PORTO MARAVILHA

**Theme:** Urban Requalification

**Financial Instrument** - Urban Operation Consortium (OUC - Operação Urbana Consorciada) and Public-Private Partnership

Port regions are examples of degraded areas that have been going through revitalization processes over the last few years, in different coast cities and countries. Normally, these regions are central, and, in several locations in the world, they have gone through recovery processes, namely, Rotterdam, Barcelona, Buenos Aires, and Rosario. Rio de Janeiro is not different, and it is important to point out that the region is located in a central spot, with available land, proximity to the financial center, and several cultural facilities. If the port zone was strategically important in the regional economy in the past, the degrading signs started to become more and more visible, due to the economic changes, and the shift of the port activities from the municipality. Several projects for the recovery of the area had already been presented,





but the definitions of Brazil as the host of the 2014 World Soccer Cup and Rio de Janeiro for the Olympic Games in 2016 were fundamental for the revitalization process to gain focus in the political agenda.

The project intends to revitalize approximately 5 million square meters until 2015, and it started to be implemented in 2010. The basic program of occupation of the area consists, among other aspects, of re-urbanization of the ways, recovery and extension of infrastructure networks, implementation of a Light Rail, construction of tunnels aiming to replace the elevated road at the so-called Perimetral (which was partially demolished), implementation of street furniture, and a network of bicycle lanes.

The instrument which made the beginning of the current recovery process possible was the institution of Municipal Law no. 101/2009, which created the Consortium Urban Operation for the Special Interest Area of Rio de Janeiro's Port Region.

In early 2013, the Metropolis Initiative Project visited Porto Maravilha and the experience deserves to be described due to the innovative approach, especially in its financing method.

## THE OPERATION

The project is based on a PPP, besides other relevant instruments, related to the management of urban affairs. Porto Maravilha is an Urban Operation Consortium (OUC)<sup>24</sup>, in which the municipality demands a corresponding benefit from the investor which intended to use the additional constructive potential in the region. With the funds collected, they execute the construction and the urban requalification services. To add credibility to the private investors and to accelerate the requalification process, a Public-Private Partnership (PPP) was chosen.

The administrative concession was defined in the end of 2010 (the procurement process was won by Consórcio Porto Novo, composed by OAS, Odebrecht, and Carioca Engenharia). The contract implicates in investments above USD 4.1 billions, and its term is of 15 years. With that, the advancement of funds to the execution of services and constructions in the area was made possible, attracting real estate investments through the selling of Additional Potential Construction Certificates (CEPACs - Certificados de Potencial Adicional de Construção)<sup>25</sup> and generating the funds to pay the services and the requalification works.

<sup>24</sup> In this instrument, the government delimits an area and prepares an occupation plan, in which some aspects are provided such as the implementation of infrastructure, the new distribution of uses, the allowed densities, the accessibility standards, etc.

<sup>25</sup> The Certificado de Potencial Adicional de Construção (Cepac) is a security issued by the municipality with aims to finance a Consortium Urban Operation - an operation defined by the law as to revitalize a neighborhood or region. Cepac corresponds to a consideration paid by the real estate companies to make buildings in the region which are taller than the legal zoning

The PPP was contracted by the Port Region Urban Development Company of Rio de Janeiro (CDURP), a government-controlled private company which was created to implement the Urban Operation in Porto Maravilha. The public considerations will be paid with the funds acquired from the selling of the CEPACs; that is, the contract warranties are not the funds coming from the Treasury, but from the selling of the construction potential surplus.

The financial concept of Porto Maravilha project had the following steps:

In 2010, there was a procurement process, and a contract for a public-private partnership was entered into by CDURP and the Concessionaire Porto Novo SA, from Porto Novo Consortium - composed of three companies. Responsible for the execution of the services preceded by or in conjunction with related construction works;

☞ In 2011, USD 1,9 billion in funds coming from the Guarantee Fund for Length of Service (FGTS - Fundo de Garantia por Tempo de Serviço -), managed by Caixa Econômica Federal were paid into the Porto Maravilha Real Estate Investment Fund (FIIPM - Fundo de Investimento Imobiliário Porto Maravilha), which acquires the CEPACs in an auction, and makes the operation feasible, starting the first step in the Contract;

☞ The Municipal Government has paid 6,436,722 CEPACs into CDURP's equity, which transferred it to the Port Region Real Estate Investment Fund - (FIIRP - Fundo de Investimento Imobiliário da Região do Porto);

☞ 25% of the total CEPACs are destined to the private lots, and the remaining 75% are destined to the use in the public lots;

☞ CDURP is responsible for paying 60% into CEPACs in 3 years. Each year, 20% of the lots - which are specified in the procurement process terms and conditions - must be made available;

☞ So the financing operation can be completed, it is not enough for FIIPM to have acquired the CEPACs. It is necessary the public lots are paid into CDURP's owner's equity, and passed on to FIIRP;

☞ FIIPM upon becoming the owner of the public lots available for using 100% of the CEPACs in AEIU's area, it hence must assume all the commitments agreed to in the PPP Contract.

## Key Findings:

- *The project has united three government levels: federal, state and local government, with the use of the constitutional attributions of each;*
- *There was a law allowing the transference of land to the funds - unprecedented fact in Brazil.*
- *To attract the private sector to the operation, the services in the area started before the construction works;*
- *The regulation as to allow a mix of possibilities for land use is carried out through incentives, among which the reduction in the ISS - Imposto Sobre Serviços (municipal services tax); exemption from paying the ITBI - Imposto sobre Transmissão de Bens Imóveis (real estate conveyance tax)<sup>26</sup> for 10 years, and a differentiated treatment for the hospitality industry;*
- *The segregated structure of the guarantees causes the PPP relationship to be “almost private-to-private”, without a risk of execution;*
- *An important lesson from the PPP process was the participation from the Municipal Attorney General’s Office, from the Municipal Treasure Office and from the Municipal Office of the Controller in the definition of the contract.*

<sup>26</sup> The Municipal Services Tax (ISS) is the main tax collected by Brazilian cities. Its importance is bigger in larger municipalities, and in those which offer financial and health-related services. ITBI (real estate conveyance tax) is levied on the transmission of real estate ownership.

## Expression of Interest Procedure (PMI - Procedimento de Manifestação de Interesse)

PMI (Expression of Interest Procedure, or Procedimento de Manifestação de Interesse) is an internationally recognized practice to promote a higher transparency and competitiveness of the processes of selection, modeling, competitive bidding, and contracting of the infrastructure projects. It is a procedure by which a private company may present to the government the modeling of a certain concession or public-private partnership (PPP) project. In Brazil, PMI is regulated by Laws 8,987/1995, art. 21 and 11,079/2004, art. 3, head provision and §1, being regulated by Decree 5,977/2006.

Decree 5,977/2006 regulates the procedure destined to the presentation of projects, studies, inquiries, or investigations, prepared by an individual or a legal entity from the private initiative, to be used in the modeling of public-private partnerships already defined as priority in the scope of the federal government. That is, the project must figure in the state planning. In São Paulo State, there is the possibility to present the proposal by the private entities before the Government comments about its priority projects.

This resource may allow the government to save funds, with studies and proposals for projects.

## METROPOLITAN REGION OF CURITIBA (RMC)

**Theme:** Urban Solid Waste (USW)

**Instrument:** Inter-municipal Consortium

CONRESOL is an Inter-Municipal Consortium for Solid Waste, created in the Metropolitan Region of Curitiba in 2001, aiming to develop and implement a new system for collection and treatment of waste. The dialog for the composition of the consortium started in the 1990s, and was strongly affected by Metropolitan Region of Curitiba's Environmental Sanitation Program (PROSAM - Saneamento Ambiental da Região Metropolitana de Curitiba).

The municipalities became aware that the matter of environmental sanitation imposed the search for alternatives to deal with the waste issue. Firstly, the useful life of the landfill in which a great deal of the municipalities in the Metropolitan Region disposed of their waste was estimated in 11 years; that is, it would have to be deactivated in 2000. Secondly, there was the need to promote a treatment service which resulted in a better application of the waste, and were not limited to a landfill. Another obstacle was that most municipalities were located in watershed areas, without

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## SIPAR's project proposes the treatment capacity of 1,900 tons/day, or 684 thousand tons of USW

proper conditions for the construction of another landfill. Initially composed of 15 municipalities, CONRESOL carried out its first procurement process in 2002, aiming to structure a new management service of USW in the region. The procurement process was not successful, because the two winning companies failed to achieve the environmental licenses. Due to that stalemate, the landfill had to be extended, so it could have a longer useful life span.

There was a period in which the consortium was weakened due to political disputes; but, after 2005, with the new law regarding consortia<sup>27</sup>, CONRESOL changed its juridical personality to public law, which granted a larger legal security, with an approval by the Municipal Council of each member municipality, consisting of inter-federation autonomous agency and having 21 members, which group 3 million inhabitants and 8.7 thousand km<sup>2</sup>.

With a structure defined from the new law, the Technical Council of the Consortium (comprising technicians from the 21 municipalities) formulated the Waste Application Processing Integrated System (SIPAR - Sistema Integrado de Processamento e Aproveitamento de Resíduos). SIPAR's project proposes the treatment capacity of 1,900 tons/day, or 684 thousand tons of USW, resulting in a forecasted useful lifespan of 25 years.

In order to implement SIPAR, the procurement process started in 2007, intended to contract the waste management services to be offered by the private sector, whose system (which provided a technology for treating the USW) had to be implemented until 2009. However, between 2007 and 2010, there were 40 lawsuits "regarding disputes between companies and entities which are part of the process. In spite of the procurement process having been concluded in 2010, it was not possible to effectively contract the winning company due to lawsuits which were filed in 2009". The solution was the contracting of 3 landfill companies through temporary concession contracts, since Curitiba's landfill was no longer available by then.

In October 2013, the procurement process which would implement SIPAR in the Metropolitan Region of Curitiba was revoked by CONRESOL and a new model for the management of waste is being studied. The new model is intended to be put for bidding in 2015 with the use of several technologies for the reuse of waste, and the reduction in the percentage of buried waste.

The decision for revocation was based on the high estimated cost to implement SIPAR, on the fact of the proposal not covering

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<sup>27</sup> According to Federal Law. 11,107, 2005, "The Union, the States, the Federal District and the Municipalities shall discipline through public consortia law and cooperation covenants between the federative entities, authorizing the associated management of public services, as well as the total or partial transfer of charges, services and personnel essential assets to the continuity of the transferred services.

## The line 4 of the subway was the first public-private partnership in Brazil



recent advancements in the waste treatment technology, and on the fact it was conceived before the National Policy for Solid Waste. One of the changes is related to the distance between the waste generating site and the final destination: it must be around 30 kilometers. SIPAR project provided travels of up to 100 kilometers. Besides, the feasibility for the implementation of several biogas production plants and screening centers for recyclable materials will be assessed.

In spite of the revocation, CONRESOL raised relevant awareness in regards to the USW issue and also developed deep knowledge regarding the difficulties for the procurement process in search of a private player regarding the management of the environmental sanitation.

### Key Findings:

- *The Consortium was created and consolidated from an experience based on the policy for the preservation of watershed areas, which raised awareness and developed knowledge for the technical bodies in the municipalities;*
- *The concern with the end of the useful lifespan of the landfill brought focus for the USW issue in the government agenda. This is shown to be a decisive factor in the effectiveness of projects;*
- *The experience shows the difficulty in drafting requests for proposals which are not prone to be legally disputed.*

### São Paulo's Macrometropolis

**Theme:** Urban mobility

**Financial Instrument:** Public-Private Partnership

The financing experience of the Metropolitan Region of São Paulo (RMSP) is placed within the urban mobility theme. It is a PPP for mass transportation called "Linha 4 amarela do metrô" (Line 4 of the subway) and it is already being operated; even though not completely.

The line 4 of the subway was the first public-private partnership in Brazil. The concession model sponsored for the exploration of railroad transportation services is one of 12.8 in extension, with 11 stations and 29 trains.

The RMSP has 19.7 million inhabitants, an area of 8 thousand km<sup>2</sup>



and 39 municipalities. São Paulo's subways currently has four line under operation, a network of 74.3 km, 64 stations, 150 trains, and it has transported 1.268 billion passengers in 2012, 4.34 million on the average business day.

The São Paulo Metropolitan Company (Companhia do Metropolitano de São Paulo), Metro, was responsible for the civil construction works, tunnels, stations, energy and ancillary systems; whereas it was up to the private partner the supply of rolling stock (trains), control and signage systems, operation, and maintenance.

The line connects Luz station, in downtown São Paulo to the municipality of Taboão da Serra, and was divided into three stages, two of which being included in the PPP:

- Stage 1: Connecting Luz station to Vila Sônia, it covers the construction of 12.8 km of line, 6 stations, the structure for three intermediate stations, electrification, and 1 railroad yard in Vila Sônia. The operation was started in 2010, with the inauguration of 2 stations (Paulista and Faria Lima), and 4 more stations were opened in 2011 (Butantã, Pinheiros, Luz, and República).

- Stage 2: Conclusion of the intermediate stations started in Stage 1, and the construction of 2 new stations, and complementary systems.

The demand forecast was one of 700 thousand passengers per day (Stage 1), and 970 thousand passengers per day (Stage 2):

It was done in the manner of sponsored concession, with a term of 32 years - which could be extended to 35, in a way that 30 years of effective commercial operation of the line are assured.

The total investment was USD 2.5 billion, USD 2.1 billion of which regarding the construction works, and USD 460 million from the private partner.

The winning bidder was MetroQuatro consortium, which offered the smallest consideration amount of USD 34.4 million (limited to USD 55 million).

When it comes to risk mitigation, the table below defined the division between what is public and what is private:





<b>Risks Taken Entirely by the Private Partner</b>	The private partner will assume the risks related to operation and maintenance, such as staff, security, unanticipated costs, etc; and the system deployment is under its responsibility, including equipment delivery and investment resources delays.
<b>Shared Risks</b>	The partners will share risks related to demand and exchange rate. Regarding demand, there will be a protection range for a variation of approximately 10% to 40% of the projected demand. Regarding the exchange rate, the Agreement provides for the inclusion in the IGP-M compensation readjustment formula, in the considered readjustment period, and the economic and financial balance of the contract shall be permitted, limited to 50% of the exchange rate impact, if requested.
<b>Risks Taken Entirely by the Public Partner</b>	The public partner takes the risks regarding delay in the conclusion of the works and shall ensure the absence of competition among Line 4 and intercity bus lines.

### Key findings:

- *The model of leaving the civil construction works to the State may be costlier. In the case of line 4, an accident in the construction in 2010 delayed the delivery of stage 1, leading to an unnecessary increase in costs. A new subway line (line 6 - Orange) will serve as a test for a new model, in which the private initiative shall be also in charge of the construction. That was possible due to the changes in the law which now allow the State to forecast the amount of funds necessary for the private initiative, before the start of the operation;*
- *Informing and discussing the PPP project with the union. In the case of line 4, there were a series of strikes against the PPP, which delayed the process;*
- *Keeping the public informed through websites and advertisements about the project progress;*
- *Planning ahead the development of urban operations and the changes in the laws for the use and the occupation of land.*

### Pearl River Metropolitan Area

The participant from China focused on achievements and difficulties faced by the PPP projects in China (Macao Bridge, Road Connection to Cities of Pearl River, Shenzhen Thermal Plant,

Beijing Power Plant and Olympic Stadium) highlighting the lack of a national law and of an organization for the control of those projects, and the increasing costs due to the delay in the implementation of the projects.

One of the outstanding geographical characteristics in the Pearl River Metropolitan Area is the presence of a large number of rivers, including the Pearl River's main canal and its many branches. They form the natural water courses, but many times they act as barriers to mobility. To that end, the project detailed in the study was Hong Kong-Zhuhai-Macao Bridge, a bridge to connect Lantau Island in Hong Kong to Pearl River in Macao, and Gongbei in Xhuhai. The bridge is 29.6 km long, plus an underground tunnel of 6.7 km.

The financing will come from the regional governments, at a total approximate cost of US 11.7 billion; US 6.2 billion of which for the main bridge. A traffic of 50,000 to 60,000 vehicles and 230 thousand people per day is estimated for 2035.

Hong Kong-Zhuhai-Macao Bridge Authority was created for the construction, and it comprises the governments of Guangdong, Hong Kong, and Macao, which is responsible for the construction, operation, maintenance, and management.

The construction start in December 2009, and the first stage is expected to be delivered in 2016.

The project was initially prepared based on a PPP, but it ended up being financed with public funds, to prevent new delays.

### **Key findings:**

- *Market reward-to-risk ratio. Government studies pointed out that the financial model would not be attractive for the private sector: it would be a high investment for a low reward. At the beginning, the private sector was shown to be attracted, but, throughout time, there were changes in the economic scenario;*
- *Legal restrictions and different laws among the 3 jurisdictions;*
- *Problems in the project coordination;*
- *Loss of exclusivity in the project, with the competition from other cross-border bridges, such as Shenzhen, Zhongshan Bridge, 51 km in length;*
- *The three government had comfortable financial provisions*

*to develop the project;*

■ *The mechanism to create an authority in which the three governments involved took part in is shown as being an innovation in the financing of infrastructures which demand high financial resources;*

■ *Other experiences were not successful, due to the increase in the price of tolls (Western Harbour Tunnel).*

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The DIs are attractive in the taxing upon revenues - the Income Taxes rates for individuals and foreign investors were reduced to zero

#### NEW CREDIT MECHANISMS IN BRAZIL: INFRASTRUCTURE BONDS AND INVESTMENT FUNDS FOR INFRASTRUCTURE CREDIT RIGHTS (FIDCS)

Bonds, are securities which represent debts issued by a company, with the purpose of raising funds for self-financing, and they may be of medium or long-term. They may be issued by publicly or closely held corporations. They are proper instruments for the companies to raise funds for the development of their projects, because they are long-term securities, making their liquidation easier by the issuing companies, and they may complement the loans offered by state banks for infrastructure projects. In Brazil, some examples of that are Banco Nacional de Desenvolvimento Econômico e Social (BNDES, or Brazilian Development Bank), Banco do Brasil (BB) and Caixa Econômica Federal (CEF), which currently motivates a great deal of that demand.

The concept of Infrastructure Bonds (DI - debêntures de infraestrutura) was originated recently (2009/10) from the assessment by the Brazilian government of the need to leverage the infrastructure investment level while there is a lack of medium and long-term financing instruments, and a low interest from the investor for longer maturity periods, due to the prolonged inflation period the Brazilian economy has been through. Thus, in order to develop a private market for fixed-income bonds for infrastructure, the Federal Government, through law no. 12,431/11, created the infrastructure bonds (DI).

The DIs are attractive in the taxing upon revenues - the Income Taxes rates for individuals and foreign investors were reduced to zero, whereas for legal entities, the rate was fixed in 15%. For the concession of the issuance of bonds with those benefits, there is the need to incorporate a Sociedade de Propósito Específico (SPE, or Specific Purpose Corporation) by the company, and the funds from the raising process must be directed to infrastructure investment projects, or in the intensive economic production in research, development, and innovation. Through Decree no. 7,603/11 the list of sectors deemed as priority for the investments in infrastructure was defined: logistics and transportation, urban mobility, energy, telecommunications, radio broadcasting, basic sanitation, and irrigation.

Even with the special tax treatment, it was not possible to make the bond market attractive for the one year the instrument was valid. Therefore, a new law was enacted (12,715/12). For the DIs, the most important changes were in the possible issuers of those bonds (the issuance by concessionaires, permit holders, or authorities of public services, and holdings controlling the

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## A trend to increase is observed from the formation of new investment funds destined to the purchase of this product

SPEs), and the extension in the use of those funds.

The first practical case was the issuance of infrastructure bonds from by Brazilian company Autoban, which raised around USD 206 million offering its bonds. Controlled by CCR Group, a large company specialized in the concession of infrastructure (valued in USD 9,7 billion), Autoban currently manages parts of the Anhanguera-Bandeirantes System, a road which connects and important flow of people and cargo in the metropolitan region of São Paulo and Campinas, and is also responsible for the conservation of a part of Marginal Tietê (an expressway in São Paulo). With the high market demand, the possible premium of 0.5%, which would be summed to the interest rate indexed to inflation (NTN-B) was reduced to 0%. The offer triggered a new process in the market of capitals; in the first series, circa 1400 investors (individuals) purchased the bonds.

Even with the incentives, the DI market had a growth below the expected one. According to a report prepared by the Secretaria de Acompanhamento Econômico (SAEE, or Economic Supervision Office), "although it is not stagnant, and it has been growing slowly from its creation, it was expected that the market of boosted bonds would be leveraged enough to support the state banks, which, at the moment, are the largest creditors of the infrastructure work financing". Currently, the infrastructure bonds register a stock of USD 4,93 billion at CETIP, a Brazilian company which is part of the financial market.

A trend for increase is observed from the formation of new investment funds destined to the purchase of this product, some in the phase of raising funds, and other ones already consolidated. The tax treatment provided in Law no. 12,431/11 (which, among other measures, created the tax incentive to the infrastructure bonds) was extended to the investment fund quotas in credit rights (FIDCs), arising from the credits the companies are to receive, such as duplicates, checks, lease contracts, and others.

The FIDCs became the main vehicle to turn assets into securities in Brazil. Currently regulated by the Securities Commission, the sector has around 380 funds which add up to approximately USD 40 billion in consolidated equity, and reached the status of fundamental option for financing for companies of various sizes.

The Infrastructure FIDC is normally performed by companies with a wide range of receivables, which must allocate funds in long-term projects for investments in the country's infrastructure area. In 2014, two national banks united to launch the first FIDC with income tax exemption for individuals and foreign persons, backed by infrastructure projects in the

areas of energy, transportation, water, basic sanitation, and irrigation. The Fund, which started to be negotiated in São Paulo's stock market - BM&FBOVESPA - for approximately US\$ 150 million, may reach up to US\$ 500 million, through the distribution of new quotas. Its portfolio was divided by quotas: senior, mezzanine, and junior. The first quota has the "A" risk classification according to Fitch e Standard and Poor's agencies, the second one has a medium risk level and the Junior one, more prone to losses, shall not be sold to investors. From the investor's standpoint, the main advantage of the investment via FIDC, when compared to the direct purchase of an infrastructure bond, is the possibility to diversify the risk in different assets.

The two mechanisms commented above were recently prepared by the Brazilian federal government in order to direct the long-term private financing to infrastructure companies in the country. The bonds are already in operation in the Brazilian stock market, with a reasonable yield, a relatively low risk when compared to other shares, and with a potential to finance large investments in infrastructure, one of the cornerstones for the economic development of the country.

*Source: BONTIVEGNA; RUSSO (2013); CETIP (2014); EXAME.COM (2013); GRUPO CCR; BRONZATI (2014).*

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# CONCLUSIONS

The metropolitan governance, understood as a coordination system among the different levels of government, corporate associations and civil society, must prioritize the formulation and implementation of public policies and projects which may ensure the sustainable development, the urban quality and the social equity in a metropolitan context.

The evidence that the increase in the number of cities in the territory requires the adoption of a complex governance structure is based on the nature and size of the interventions, which demand articulate and integrated actions, either to urban services, or to the supply of infrastructure.

Such interventions necessarily involve different government levels, which implies in the need for coordination of the different interests and demands. The involvement of different metropolitan regions in this project showed that in most cases there is a great difficulty to establish a consensus among the governments involved and to conciliate interests that, many times, are distinct. However, the people living in the cities in metropolitan regions do not recognize the jurisdiction divisions - for them, the space they live in, move through, work at, and benefit from is a single city.

The financial difficulties faced by the local governments, given the discrepancy between the evolution of their incomes and the social and infrastructure demands, can be added to those facts. Besides that, there are great tax and financial gaps among municipalities in one same metropolitan region, which reinforce, in many cases, an autonomous stance from the main city, ignoring that most of the urban services surpasses the established political limits.

The urban environment is, above all, a built environment and, for that reason, a development strategy based on the improvement of the metropolitan management and financing is necessary. That requires stable financing sources to be made available and the constant cooperation among municipalities, states and national government. Furthermore, an extensive negotiation power is needed with the private sector and the society, acting as project partners and gathering points of different economic and social players.

The restriction to the public investment, even deeper in the municipalities, demands new organization methods, capable of dealing with the large requirement of funds for the creation and maintenance

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## People living in the cities in metropolitan regions do not recognize the jurisdiction divisions

of infrastructure. Partnerships, concessions, agreements, consortia, application of immaterial gains from the public action (real estate appreciation) are mechanisms that have been utilized.

This study sought to observe in practice how the metropolitan regions are using such financing mechanisms, what the mistakes and successes were, and the lessons that can be learned. The case studies brought experiences in public-private partnerships, agreement, concession, and consortium urban operations.

When it comes to PPPs, all experiences shown by the partners, whether the ones in progress or still in project, indicate that, if on one side we must consider the partnerships with the private sector as an advancement to make the investments in infrastructure feasible, they also must not be considered as exempt from risks.

The topic is highly complex, and it would be difficult, in the scope of this work, to analyze all the aspect which surrounds this type of contract between the government and the private sector. Even though a range of sectors may be subject to PPPs, it is the service sustainability which must be examined as the essential condition for fundability.

PPPs are generally applied in sectors demanding a high investment and with long terms, above ten years. In the case studies, some examples of PPPs are the experiences already in progress in São Paulo, Gauteng and Rio de Janeiro; the ones in the final phase of contracting, the one from Minas Gerais and also Pearl River, in which the initial ideal of creating a PPP was abandoned due to legal and coordination problems and to the project not being attractive enough to the private sector.

Below is an attempted summary of the main aspects of this instrument.

### **From the government side:**

- One needs to see the PPP as a way to obtain funds at a lower cost, allowing obligations to arise in the medium and long terms. PPPs must be used to achieve gains in efficiency and the government must not resort to this mechanism as a way to temporarily improve the budget;
- It is essential to implement a robust legal framework - the institutionalization starts with the adequate legislation, discussed with the society;
- It is very difficult for the government to justify the contracting of a PPP, rather than the public financing. One way to overcome that



obstacle is the development and dissemination of criteria for the choosing of a contracting method;

- It is necessary to design effective mechanisms for inspecting the services, which imposes not only an independent agency but, above all, to give voice to the public who uses the service. "The consumer's voice - if heard and amplified - may can modulate and restrict the opportunism which is not covered by the contracts regarding the effective use of the services, as long as there are channels for individual expression and collective negotiation"<sup>28</sup>;

- The PPPs require a careful design, preparation, assessment, acquisition, contracting and inspection. This complexity of variables requires the construction of competences in the government to coordinate the management of the PPP programs. One example are the PPP units implemented in the states of São Paulo, Minas Gerais and in Gauteng;

- It is necessary to ensure transparency and probity in the contracting of the PPP. The regulation of contracts requires a dialog with the society during the development and also in the execution of the project;

- The guarantees are a fundamental part of the process and they must compose the legal and the governance framework.

- Involving the environmental licensing agencies and the Public Prosecution in the early discussion of the project is essential to ensure a higher understanding and transparency to the partnership;

- The long-term sustainability of a public-private partnership lies mainly in the correct risk evaluation;

- The false compliance with the contracts must be considered; that is, companies which are granted the concession at very low prices, but further show they are not able to execute the investment, or they offer a quality of service below the expected one. That might be mitigated by the requirement of proof of financial capacity and technical certification<sup>29</sup>;

- All the obligations to be paid must be considered as debt from the government;

#### **From the side of the private sector:**

- It is up to the private initiative to provide efficient solutions

<sup>28</sup> See FRISCHTAK (2013)

<sup>29</sup> See RIBEIRO (2013)

helping the government to reach the results defined by development levels in the execution of services;

- In order to add a higher flexibility and incentives to the innovation, incorporating better technological and management solutions;
- The private sector has access to a wide range of financing sources, many times impossible to be accessed by the government;

### PPP Main Lessons

Risks	Proposals	Examples
Difficulty for the public manager to justify the choice of hiring a PPP or public fund	Develop and disseminate objective criteria for choosing PPP instead of other instruments	Tools like the Public Sector Comparator (PSC) provide cost-benefit analysis. Implemented in Portugal in 2006
Lack of technical staff trained in public sector for project modeling	Create competencies in the public sector to PPP's coordination and management	States of São Paulo and Minas Gerais and South Africa have PPP's Units in which the entire process is carefully examined
Legal framework definition	Establish national and regional laws	Brazil, States of São Paulo, Minas Gerais and Goiás, South Africa and Mexico
Set up efficient mechanisms for contract supervision	Independent agencies are the best tool. They also give voice to society in the contracts regulation	Participation of environmental licensing and supervision institutions
Choose PPP mode as a way to obtain low-cost resources - "fiscal advantage"	Set up budget limits; e.g., revenue percentage	In Brazil, the Law 11.079/2004 absorbed international experience and imposed several budgetary, accounting and financial limits to PPP hiring in the public sector. Some of these limits were not established in many European countries until recently

Another option for the process of solution of urban problems which involve neighboring municipalities is through the inter-government cooperation, through the formation of consortia, agreements and other specific partnership methods among municipalities

Lack of guarantees for project support	Guarantees can be set through: institutions or especial funds under the Law; guarantee insurance from companies not controlled by the Public Power; insurance from international and financial institutions not controlled by the Public Power; guarantee fund or state enterprise created to this end	In São Paulo there is the figure of Paulista Partnerships Company
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The PPPs are not the only financing alternative. A great deal of public managers believes that another option for the process of solution of urban problems which involve neighboring municipalities is through the inter-government cooperation, through the formation of consortia, agreements and other specific partnership methods among municipalities.

The concessions might be an instrument when the project is not attractive enough for PPPs. It is important to remember that the basic difference between a public-private partnership and the regular concession is the private partner's compensation. In the regular concessions the compensation for the concessionaire comes exclusively from the fees charged to the users; in the public-private partnership there is a consideration paid by the government, with or without the charge to the users. The road concessions in São Paulo state are an example of that, albeit not examined in this study.

The agreements are shown to be interesting for specific interventions - in Brazil, this mechanism for controlling the execution and the accountability has been well enhanced. However, they may be inadequate for complex projects, with the need of several investments, and longer maturity. For the same reason as the agreement, by definition, it is not legally stable, and it is not adequate either to ensure the operation of the construction works and facilities will be started in a proper way at medium and long terms. In more complex projects, the use of agreements imposes the access to the municipal law, since they need a specific juridical statute.

The concessions and agreements arising from Rosario's experience

show a high level of involvement from the various players other than the government, landowners, users and investors, implying the notion of a partnership between the State, the private sector and the civil society for a urban renewal process that brings social and environmental improvements. These measures have been thought of and planned for a long period of time, in a context designed from the urban and the strategic standpoints. Besides the financing instruments, Rosario's experience shows how planning is fundamental to pave a road of success in shared actions.

The urban operation (the case of Rio de Janeiro)<sup>30</sup> is a modern instrument, because the government assumes a role of higher proactivity: it develops an occupation or requalification proposal of a certain area and uses incentive and intervention mechanisms to induce and motivate the action from the private players and make the execution of its project feasible.

There are several considerations that might be pointed out from the case studies focused on in the comparative study. Within the main critical points for the metropolitan governance, it is important to highlight:

- It is counterproductive to individually face projects which, by their own nature, must be integrated and jointly thought;
- A great flexibility is needed to achieve good governance: integration from all players;
- The fragmentation may be observed in almost all metropolitan areas;
- A constant action is needed to ensure the metropolitan citizen's political representativity;
- Producing and legitimating a planning for the MRs and metropolises is a fundamental factor for the success of metropolitan actions;
- Given the discrepancy in size and economic weight of the cities composing an MR, the public policies must be developed in the most effective scale for each case;
- The need to treat the territory as an integration platform for the policies and government actions in its various levels, and to permanently evaluate the project impacts.

<sup>30</sup> The consortium Urban Operation - OUC - is defined by Brazil's City Statute as the set of interventions and measures coordinated by the municipal Government, with the participation of owners, inhabitants, permanent users, and private investors, with aims to achieve urban and structural transformations, social improvements, and environmental appreciation in an area.

# APPENDICES

TERRITORIAL CONFIGURATION (Table 1)

METROPOLITAN REGIONS	Main Municipality	Nº of Municipalities	Area (Km <sup>2</sup> )	Population Density (pop./Km <sup>2</sup> )	Urbanization Rate (%)
SÃO PAULO (RMSP)	São Paulo	39	7,947	2,477	98.9
CAMPINAS (RMC)	Campinas	19	3,645	767	97.4
BAIXADA SANTISTA (RMBS)	Santos	9	2,406	692	99.8
VALE DO PARAÍBA E LITORAL NORTE (RMVP/LN)	São José dos Campos	39	16,181	140	94.1
RIO DE JANEIRO (RMRJ)	Rio de Janeiro	21	5,318	2,221	99.5
BELO HORIZONTE (RMBH)	Belo Horizonte	34	9,475	515	98.1
REDE DE GOVERNANÇA COLABORATIVA (REDE 10)	Belo Horizonte	10	2,775	-	-
VALE DO AÇO (RMVA)	Ipatinga	4	807	56	98.7
GOIANIA (RMG)	Goiania	20	7,397	294	98.0
CURITIBA (RMC)	Curitiba	29	16,627	194	91.7
PORTO ALEGRE (RMPA)	Porto Alegre	32	10,097	394	97.0
BELÉM (RMB)	Belém	7	3,570	637	97.6
RIDE DISTRITO FEDERAL E ENTORNO (RIDE-DF)	Brasília	23	56,433	67	94.1
PEARL-RIVER DELTA Metropolitan Area	Guangzhou	9	54,700	875	>80.0
GAUTENG REGION	Johannesburg	-	18,178	670	-
	Tshwane	1	1,645	2,430	-
	Ekurhuleni	1	2,198	464	-
	District Councils	1	1,975	1,609	-
		10	-	-	-
BUENOS AIRES (RMBA)	Buenos Aires	41	14,000	941	98.0
ROSÁRIO (AMR)	Rosario	21	1,768	740	97.6
LIMA E CALLAO	Lima Province	43	2,672	2,846	99.9
	Callao Province	6	147	5,966	100.0
METROPOLITAN ZONE VALLE DE MEXICO (ZMVM)	México City	60 municipalities and 16 territorial demarcations*	7,854	2,560	98.6
METROPOLITAN AREA BARCELONA (AMB)	Barcelona	36	636	5,074	47.0

Source: Metropolitans Regions Partners of Initiative. 2013

\*The political-administrative division of the City of Mexico are not municipalities but the territorial limits or political delegations.

## DEMOGRAPHIC FEATURES (Table 2)

METROPOLITAN REGIONS	Population	Year of the data - Population	Average annual population growth rate (%)	Years of the data	% of National Population	% of MR Population Living in Main City	% of Population Aged 0 to 14	% of Population Aged 15 to 64	% of Population Aged 65 or Over
SÃO PAULO (RMSP)	19,683,975	2010	0.97	2000-2010	10.30	57.20	21.90	70.90	7.10
CAMPINAS (RMC)	2,797,137	2010	1.81	2000-2010	1.50	38.60	20.50	72.10	7.40
BAIXADA SANTISTA (RMBS)	1,664,136	2010	1.20	2000-2010	0.90	25.20	22.10	68.90	9.10
VALE DO PARAÍBA E LITORAL NORTE (RMVP/LN)	2,264,594	2010	1.29	2000-2010	1.20	27.80	22.20	70.70	7.10
RIO DE JANEIRO (RMRJ)	11,835,708	2010	-	-	6.20	53.40	20.80	70.10	9.10
BELO HORIZONTE (RMBH)	4,883,970	2010	1.15	2000-2010	2.60	48.60	24.40	68.40	7.20
REDE DE GOVERNANÇA COLABORATIVA (REDE 10)	4,360,662	2010	1.04	2000-2010	2.30	54.47	-	-	-
VALE DO AÇO (RMVA)	451,670	2010	1.23	2000-2010	0.20	53.00	22.10	71.20	6.70
GOIANIA (RMG)	2,173,141	2010	2.23	2000-2010	1.14	59.91	22.63	73.75*	3.62*
CURITIBA (RMC)	3,223,836	2010	1.37	2000-2010	1.70	54.30	22.70	70.90	6.40
PORTO ALEGRE (RMPA)	3,978,470	-	-	-	2.10	35.40	21.40	70.40	8.20
BELÉM (RMB)	2,275,032	2010	1.98	2000-2010	1.20	61.25	24.98	69.49	5.53
RIDE DISTRITO FEDERAL E ENTORNO (RIDE-DF)	3,724,181	2010	2.42	2000-2010	1.90	69.00	23.70	76.40	-
PEARL-RIVER DELTA Metropolitan Area	47,862,400	-	-	-	3.10	-	-	-	-
Gauteng Region	12,272,263		2.70		23.70	-	-	-	-
Johannesburg	4,434,827	2011	3.20	2001-2011	8.60	100.00	23.20	72.70	4.00
Tshwane	2,921,488		3.10		5.60	100.00	23.20	71.90	4.90
Ekurhuleni	3,178,470		2.47		6.10	100.00	24.30	71.70	4.00
District Councils	2,233,382		-		4.50	100.00	-	-	-
BUENOS AIRES (RMBA)	14,819,137	2010	1.38	2000-2010	37.00	19.50	25.00	63.70	11.30
ROSÁRIO (AMR)	1,307,826	2010	0.94	2001-2012	0.03	72.70	18.60	72.30	11.10
LIMA E CALLAO	8,482,619	-	-	-	30.90	-	25.20	68.10	6.70
Lima Province	7,605,742		-		27.70	-	25.00	68.20	6.80
Callao Province	876,877		-		3.20	-	26.80	66.80	6.40
METROPOLITAN ZONE VALLE DE MEXICO (ZMVM)	20,533	-	-	-	0.30	68.70	15.00	48.00	37.00
METROPOLITAN AREA BARCELONA (AMB)	3,226,944	2011	2.10	2006-2011	0.07	50.00	14.20	67.70	18.10

Source: Metropolitan Regions Partners of Initiative. 2013

\*RMG - Share of population aged 15 to 69 and 69 or more.

### ECONOMIC FEATURES (Table 3)

METROPOLITAN REGIONS	GDP in US\$ million	Year of the data GDP	% of Country GDP	% of the Region/Province GDP	GDP Per Capita MR - US\$	Total Nº of Formal Jobs	Average Monthly Income - US\$
SÃO PAULO (RMSP)	398.745	2010	18.6	56.3	20.269	7.380.405	1.218
CAMPINAS (RMC)	55.953	2010	2.61	7.9	20.005	965.081	1.149
BAIXADA SANTISTA (RMBS)	26.874	2010	1.25	3.8	16.159	398.204	955
VALE DO PARAÍBA E LITORAL NORTE (RMVP/LN)	35.053	2010	1.64	4.95	15.491	551.865	-
RIO DE JANEIRO (RMRJ)	127.205	2009	7.84	71.8	10.757	3.151.210	886
BELO HORIZONTE (RMBH)	62.698	2009	3.87	35.3	10.300	1.907.583	1.256
REDE DE GOVERNANÇA COLABORATIVA (REDE 10)	54.270	2009	3.35	33.1	12.445	-	-
VALE DO AÇO (RMVA)	6.902	2009	0.43	5.8	9.800	118.653	1.316
GOIANIA (RMG)	15.757	2009	0.97	36.8	7.251	-	-
CURITIBA (RMC)	43.962	2009	2.5	43.0	12.148	947.195	1.976
PORTO ALEGRE (RMPA)	62.782	2010	2.9	44.4	13.810	1.293.000	1.512
BELÉM (RMB)	14.045	2010	0.65	31.8	6.174	504.223	-
RIDE DISTRITO FEDERAL E ENTORNO (RIDE-DF)	91.030	2010	4.2	-	24.443	1.284.000(1)	1.191(1)
Pear- River Delta Metropolitan	501.654	2011	10.0	82.2	9.855	-	282
Gauteng Region	78.000	-	34.0	-	6.969	-	-
Johannesburg	34.000	-	17.0	-	9.188	1.952.843	-
Tshwane	19.100	-	9.5	-	8.862	1.066.528	-
Ekurhuleni	13.230	-	6.6	-	4.613	841.798	-
Buenos Aires (RMBA)	133.000	2011	-	81.4	8.975	4.901.430	748
ROSÁRIO (AMR)	12.655	2010	-	50.0	9.470	575.000	1.108
LIMA E CALLAO Lima Province Callao Province	35873	-	-	47.9	-	-	725
METROPOLITAN ZONE VALLE DE MEXICO (ZMVM)	175.482	-	-	14.5	1.370	8.973	5.046
METROPOLITAN AREA BARCELONA (AMB)	188.930	2010	13.6	-	40.493	2.475	20.283

(1) Refere-se à cidade de Brasília



**INDUSTRY e SERVICES (Table 4)**

METROPOLITAN REGIONS	% Share of Industry VA in MR's Total VA	% Share of MR's Industry VA in Regional Industry VA	% Share of Services VA in MR's Total VA	% Share of MR's Services VA in Regional Services VA
SÃO PAULO (RMSP)	24.6	47.3	75.4	60.7
CAMPINAS (RMC)	37.0	9.8	62.6	7.0
BAIXADA SANTISTA (RMBS)	27.5	2.8	72.3	3.0
VALE DO PARAÍBA E LITORAL NORTE (RMVale/LN)	46.4	8.4	52.9	4.0
RIO DE JANEIRO (RMRJ)	17.0	45.0	83.0	79.0
BELO HORIZONTE (RMBH)	33.9	33.4	65.2	36.6
VALE DO AÇO (RMVA)	55.1	5.5	44.7	2.4
PORTO ALEGRE (RMPA)	48.2	50.5	50.7	46.2
BELÉM (RMB)	19.1	13.6	80.3	45.7
Pear- River Delta Metropolitan	47.8	>90	49.9	>80
Gauteng Region	-	-	25.5*	-
Johannesburg	17.4	-	12.7*	-
Tshwane	16.1	-	30.4*	-
Ekurhuleni	-	-	-	-
BUENOS AIRES (RMBA)	23.0	-	77.0	-
ROSÁRIO (AMR)	19.0	-	81.0	-
LIMA E CALLAO	0.0	0.0	0.0	0.0
Lima Province	18.4	58.8	-	-
Callao Province	-	-	-	-
METROPOLITAN AREA BARCELONA (AMB)	20.3	74.0	70.3	69.0

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september 2014