

SLUMS UPGRADING IN BRAZIL DURING THE 1990S: AN EVALUATION USING CENSUS DATA

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Summary:

This paper analyses the urbanization policies in the slums of the Metropolitan Region of São Paulo during the 1990s. Our results indicate that the areas with the largest improvements in urbanization were also those with a more positive evolution of the socio-economic indicators. Furthermore, this evolution was more intense in the municipalities of the ABCD region than in São Paulo. With respect to the characteristics of the urbanization projects, we verify that those with greater community participation and a wider scope on the provision of social programs achieved better results. More specifically, the more favorable outcome in the municipality of the ABCD region seems to be associated with those positive characteristics of their urbanization projects.

Key Words:

Slums; Urbanization; Land Regularization; Participatory Approach; Social Inclusion.

I. INTRODUCTION

This paper presents the partial results of an ongoing research on urbanization policies and land regularization in slums of selected metropolitan regions. The results refer to the Metropolitan Region of São Paulo (hereafter MRSP) in the 1990s, more specifically for the cities of São Paulo, Diadema, Santo André e São Bernardo do Campo. We analyze the main characteristics of the urbanization projects in slums implemented by the municipality, and also the socio-economic indicators of the slums, as well as the indicators related to urbanization and housing property status.

The indicators were elaborated from aggregated data for the Census of 1991 and 2000. It was defined “Minimal Comparable Areas” for the “subnormal sectors”¹ in those dates and, from these areas, a typology of the subnormal sectors was proposed according to the evolution in urbanization (using as proxy sanitation coverage). Finally, the paper compares the evolution of several indicators for each type of area and in each municipality using the “differences in differences” methodology.

Our results indicate that the areas in the subnormal sectors of the MRSP with the largest improvements in urbanization were also those with a more positive evolution of the socio-economic indicators (such as income and education). Furthermore, this evolution was more intense in the most urbanized areas in the municipalities of the ABCD region² than in São Paulo. With respect to the characteristics of the urbanization projects, we verify that those with greater community participation and a wider scope on the provision of social programs achieved better results. More specifically, the more favorable outcome in the municipality of the ABCD region seems to be associated with those positive characteristics of their urbanization projects. Another relevant factor explaining this outcome is administrative continuity in some municipalities.

The paper is organized as follows: section 2 presents the main characteristics of the urbanization projects in the selected municipality; in section 3 we introduce the database and the results for the indicators in each type of area; finally, in section 4 we offer our final considerations.

II. URBANIZATION PROJECTS IN SÃO PAULO METROPOLITAN REGION.

In many areas of Brazil there were huge problems of housing and precarious urban conditions, which affected the lives of many poor people. In 1999 there were 1.4 million houses in slums, 80% located in the 10 main metropolitan regions (Morais, 2005:14). The largest of these is the MRSP, which comprises 39 municipality and a population of 17,8 millions. Even though it was the richest and most economically important urban area in Brazil, Sao Paulo and its adjacent cities had, according to the 2000 census, 416 thousand houses in subnormal sectors (slums), corresponding to a population of 1,67 million. The socio-economic Census data reveals that people living in these areas had worse levels of income, education and health than the average inhabitant of the MRSP.

¹ The term “subnormal sector” is the closest definition to slum in the Brazilian socio-economic statistics, as defined by the IBGE (a government institute).

² The ABCD region is a common denomination for the cities of Santo André (A), São Bernardo do Campo (B), São Caetano do Sul (C) e Diadema (D), a group of cities in the MRSP with a high concentration of industrial activity.

In the 1990s, the municipality in the MRSP implemented different urbanization projects in the slums, some of which we selected to present in this section. From Diadema we chose the experience of the Special Areas with Social Interest (AEIS)³, which dealt with the land regularization problem in that city. The next experience presented in the Santo André More Equal (SAMI)⁴, which combines an urbanization project with several social inclusion programs. From São Bernardo do Campo we analyze an urban upgrading project in a watershed area, which included important environmental aspects. Finally, we selected from São Paulo the Singapore Project, which built several-store buildings to relocate slum-dwellers.

It is important to emphasize that this selection does not imply that each city displayed only one type of urbanization. For example, there were also projects dealing for watershed areas in Santo André and in São Paulo, and social inclusion programs were also to be found in Diadema and Santo André. Indeed, our intention was to present the diversity of approaches to urban intervention that were adopted in the MRSP during the 1990s, emphasizing the distinctive characteristics of these projects. These approaches will be an important reference when we analyze the data on the evolution of the urbanization and socio-economic indicators during this decade.

1. Special Areas with Social Interest in Diadema

The city of Diadema has a high population density, with a third of its inhabitants living in slums that occupy only 4% the area of municipality (Baltrusis, 2003:50). The problem of the land scarcity is also due to the presence of watershed that represents 30% of the land, and the privilege that the industries historically had in occupying the best areas in the city.

The population in the slums increased dramatically through land invasions, from 12 to 79 thousand people between 1970 and 1980, reaching 100 thousand in 2001 (Baltrusis, 2003:53). According to Rolnik (1998), Diadema had until 1980 one of the worst situations of land occupation in São Paulo, with the poor living in densely occupied areas with no urban infrastructure. This period also observed the growth of the social movements putting political pressure on the government against the policy of removing slums. A landmark was the invasion of the Municipality Council in 1984 by these movements, claiming for legislation protecting their rights on the occupied land.

Facing the problem of the land scarcity and the political pressure, in 1983 the newly elected mayor from a left party (PT⁵) launched initiatives for slums' urbanization and land regularization. The continuity of these policies throughout three consecutive administrations of the PT (1983-1996) resulted on the urbanization of 115 settlements (from a total of 192 slums existing in 1996), reaching 90% of the slum population (Baltrusis, 2003:55).

In this context the municipality implemented, in 1994, the Special Area with Social Interest. It corresponds to the inclusion, in the municipality's urban planning, of a new category that incorporates the specific requirements for the urbanization and

³ AEIS is an acronym for "Áreas Especiais de Interesse Social". They are also known as ZEIS.

⁴ SAMI is an acronym for "Santo André Mais Igual"

⁵ Partido dos Trabalhadores (Workers' Party).

regularization of low-income settlements⁶. In Diadema, the Special Areas were used for two purposes: to segregate empty or unused private and public land to be exclusively used for low-income housing (AEIS I); and to demarcate all land occupied by slums in Diadema for regularization of these settlements (AEIS II). Rolnik (1998) emphasizes that the implementation of the Special Areas requires the municipal government to adopt different approaches for urbanization, according to the specific requirements for each type of slum.

The demarcation of these areas resulted in an increasing of the land supply for low-income housing, reducing the price of lots to the benefit of the poor households. The government also worked with landlords and the community leaders to facilitate the negotiations and to regulate the process of land transfer for the building of new settlements. Baltrusis (2004:4) informs that the municipality adopted a participatory approach in order to define the priorities for public investment in urban infrastructure. In this respect, Unesco (1998) argues that the city of Diadema increased the democratic content in the access to land, urban services and a better environment.

One of the first areas to become an AEIS-I was an empty land owned by the industrial company SANKO. There had been a claim from the social movement for the municipality to expropriate this land, but this was unfeasible for the government because the costs would be too high (estimated in R\$ 4 millions). After a long negotiation process, the municipality agreed to pay for 50% of the cost for acquiring the land, the remaining to be paid by the social movement. The municipality also agreed to build the urban infrastructure, to the benefit of 1,800 families (Baltrusis, 2004:9-11). There was limited public funding for house building, and as a consequence many families resorted to self-construction.

The AEIS programs in Diadema had many positive aspects, being considered a model for urban management (UNESCO, 1998) by strengthening the democratic process in the city, fighting social exclusion and promoting income redistribution. In relation to the results, there was an increase in the supply of low-income housing by 8 thousand unities between 1994 and 2000 (Baltrusis, 2004; 18), the regulation of the areas of the slums, as well as the strengthening of the social movements by the adoption of a participatory approach. This project also contributed to a reduction of land invasion in areas with environmental risk, such as watersheds, improving the quality of life of the poor.

On the other hand, there were also some problems related to the acquisition of land for speculative reasons, which resulted in the unavailability of land in a few years. Baltrusis (2004: 7) also points out that, when there was a change in the local government in 1997, the dismantling of the participatory process reduced the bargaining power of community leaders and, as a consequence, the social impact of the AEIS projects. Finally, because of the poor quality of building materials and the resort to house self-construction, the new settlements ended with an urban pattern similar to the one found in a regular slum.

2. Santo André More Equal

Santo André has 138 slums, where 120.5 thousand people live, representing 18,6% of the city's population (Larangeira, 2003: 9). The majority of the slums is to be found in

⁶ The first experience with the AEIS in Brazil was implemented in the city of Recife, during the 1980s. For a discussion on the concept of AEIS, see Rolnik (1998).

risky areas, such as declivities (58 settlements), subject to regular floods (22), or in environmentally protected areas (5).

As in Diadema, the slum urbanization projects were associated with a left wing administration (PT). The Mayor Celso Daniel (1989-1992) established a housing secretary, approved legislation for land regularization, and initiated the urbanization of the Tamarutaca slum. The projects were suspended with a change in administration (1993-1996), being resumed when Daniel was elected for a second term, starting in 1997. In this second period, the focus of the urbanization strategy was the provision of a wide range of social inclusion programs, which was known as Santo André More Equal (SAMI).

This approach to urbanization went beyond the physical infrastructure to face the need to overcome social exclusion, articulating policies from several areas of the local government. In this approach, social programs and basic income initiatives were combined with urban interventions in a group of slums, in a concentrated and articulated way. The slogan of SAMI was “everything together, at the same time, and in the same place” (Denaldi, 2004: 12).

The SAMI included urban infrastructure (sewage, water, electricity, housing); land regulation; family's health provision; illiteracy eradication; basic income provision; micro-credit program; job qualification; and others. The workers were public servants from the municipality; NGOs employees; and people from local communities selected and trained to provide services.

The SAMI was implemented in four slums from 1997 to 2000: Sacadura Cabral, Tamarutaca, Capuava e Quilombo II. The choice of these slums followed technical and political criteria, having been decided in a participatory budget process. On these four slums lived 16 thousand people, representing 13,3% of the Santo André slum's population. (Larangeira, 2003:14). As already emphasized, the goal of SAMI was to concentrate a large scope of social inclusion programs in selected group of slums.

On the total, the program's expenditures were R\$ 44,1 millions, being 41,3% paid by the municipality government (R\$18,2 million). There was also the financial support from European Commission, which contributed with 41% (18 millions) of the resources for the project. The remaining funding came from the Federal Government, through the HABITAR program, as well as from other partners (Larangeira, 2003:21).

The SAMI also included mechanisms for the evaluation and monitoring of the quality of the public services provided to the community after the conclusion of the urbanization. People from the communities were trained to be the monitors, and the results of their analyses to be sent the companies providing the public services (Ervilha, 2003). In fact, an important characteristic of the SAMI was the participation of the local communities in all phases of the project: the definition of priorities, its implementation and, finally, the monitoring of the results. On this respect, Pavez (2006) analyses how the SAMI had a positive impact on strengthening the social relations inside the slums and providing a greater access of the community to the government's decision process.

This urbanization project associated with social inclusion in Santo Andre received international recognition, being pointed out by the UN as one of the best practices in

local governance (Denaldi, 2004: 8). Indeed, it is reported that the communities displayed an improvement in employment, schooling and health care (ibid.: 13). However, the expansion of the SAMI to a larger group of slums is restricted by budget constraints, since the extensive range of social inclusion programs implied in a high implementation cost.

3. Urban Upgrading in Watersheds in São Bernardo do Campo

The problem of slums in watershed areas, which occurs throughout the MRSP, was particularly serious in São Bernardo do Campo. Over half of the municipality (52%) is located in watershed-protected areas (Neves, 2003: 12), and as the slums expanded into these areas, a situation of social risk (floods) and environmental risk (contamination of reservoirs) was aggravated. In the municipality lived a population 50 thousand families in slums, from which 8.5 thousand families in the 38 slums located in watershed area (ibid: 15).

Land scarcity was a critical issue in São Bernardo, being economically unfeasible for the municipality to buy land elsewhere to relocate the families living in the watershed areas. On the other hand, the high population density on these settlements was a serious environmental problem, as these reservoirs were an important source of water supply for the MRSP. Therefore, the problem required both an urban upgrading of the existing slums and the preservation of the watersheds. After the election of mayor Mauricio Soares (1997-2000), from the social democrat party (PSDB), such a project was implemented in the slums Jardim Detroit and Carminha.

These slums were located at the margins of the Billings Reservoir, housing 614 families (2,700 people), which lived in what was considered as having the worst levels of environment degradation and violence in Sao Bernardo (UN-HABITAT, 2002: 3). Housing conditions were precarious, as 80% of houses were made of wood, without proper sanitation and garbage collection. In the raining season, the constant floods in those unsanitary conditions were a health risk to the community and an environment risk for the reservoir (Neves, 2003: 16).

The urbanization project had a strong ecological component, with public investments in sewage and water treatment, street paving to facilitate garbage collection, drainage systems, reforestation, environmental education for the community, incentives to recycling as a source of income, and so on and so forth. The goal was to give to the community the means and the will to keep the place tide and environmentally preserved, not only for the benefit of the cities that depended on the reservoir, but also to improve the life quality in the community itself.

Many municipality secretaries participated in the formulation of the urbanization project (Habitation and Environment; Citizenship and Social Development; Health, Education), as the infrastructure works came together with social inclusion programs. It was also necessary to negotiate with the State Judiciary of Sao Paulo, as there were legal restrictions for the intervention on an environmentally protected area to be overcome.

The majority of houses were built by collective self-help construction work (known in Portuguese as *mutirão*). Almost all houses were made out of brick, with the material donated by the municipality. During construction time, families were removed to

temporary lodges, receiving support from the community leaders and government staff. The community had a great participation on the project, from the planning stage to its implementation and the monitoring of the results. The role of women in this participatory process, emerging as local leaders, has been emphasized as an important factor for the success of this experience (UN-HABITAT, 2002: 5).

On the total of US\$ 2,6 millions invested on the project, the municipality government contributed with US\$ 1,7 million. The remaining resources came from the Federal Government (US\$ 0,9 million), through the Caixa Economica Federal (a government bank), using funds from the Pro-Infra program (US\$ 0,8 million) and the Habitat program (US\$0,1 million). The project was prepared by an NGO (UN-Habitat,2002: 3).

The results of this urban upgrading project are considered to be positive, as it achieved 100% of its goals for sanitation, paving streets, draining systems, and other infrastructure works (Neves, 2003: 28). The physical integration of the slum to the city brought many other benefits, such as a formal address for the residents, greater access to credit, more mobility to the elderly and people with disabilities, security, among others (UN-Habitat, 2003: 4). Finally, it must be stressed the positive impact on the environment by the improvement on urban infrastructure and the dissemination of sustainable development practices, such as garbage collection and recycling.

4. The Singapore Project in São Paulo

Slums increased dramatically in the city of São Paulo during the 1980s. The number of slums rose from 188 in 1980 to 629 in 1991, with the number of slum-dwellers doubling from 335 to 711 thousand in the same period. The following decade saw a decrease in this growth rate, and by 2000 there were 909 thousand people living in slums, corresponding to 8,7% of São Paulo's population (Pasternak e Baltrusis, 2003 :10).

The phenomenon of slums is relatively recent in São Paulo, starting in the second half of the XXth Century. Low-income housing in São Paulo was, for a long period, associated with rented rooms in decadent buildings (*cortiços*) located in the inner city. Similarly to the earlier development of hill-side slums in city center of Rio de Janeiro, the *cortiços* were an answer to the need of low-income workers to live near their jobs, even if it implied precarious housing conditions.

The occupation of vacant land by the unemployed and the poor, in a decade (1980) of economic crisis in Brazil, led to the rapid growth of slums in São Paulo. As in its neighboring cities, the watershed areas of the Billings and Guarapiranga reservoirs were invaded, creating an environmental risk. The importance of these reservoirs for the water supply of the MRSP led to a combined action of the municipality and the State government (Guarapiranga Project), which is reported to have invested US\$ 187 millions (partly funded by the World Bank), benefiting 10,7 thousand households in 74 slums (Ancona e Lareu, 2001: 54).

The overall approach on how to deal with slums in São Paulo, however, changed throughout the decade as opposing political parties took office in the City Hall. The polarization between right and left wing politicians led to instability in the urbanizations policies, as the party that took office opted to interrupt the ongoing work and start a new policy. In the 1985 municipality election (the first after the end of the military

dictatorship), the new conservative mayor (Janio Quadros) promoted the removal of some slums in noble areas of the city. His successor, Luiza Erundina from the PT (1989-1992), had a completely different approach, promoting the urbanization and integration of the slums to the city. The same movement was occurring in other cities of the MRSP where that has been a similar political change, as we have discussed above.

The housing policies in the Erundina government tried to bring the communities to the decision process, promoting a participatory approach on the definition of the urbanization priorities, as well as on the execution of the construction works through self-help collective schemes. In fact, the *mutirão* became a symbol of her government (Amaral, 2002: 27). There also an initiative to improve living conditions on the *cortiços*, which however remained only as a pilot program, in a small scale (Fix e al, 2003: 30). These policies, however, were discontinued from 1992 onwards, as two conservative governments - Paulo Maluf (1993-1996) and Celso Pitta (1997-2000) – brought a different approach to urbanization.

The government that took office in 1993 broke the ties between the municipality and the social movements, interrupting the participatory approach on housing policy. The new approach was represented by PROVER (Slum Urbanization Project by Verticalization), which became popularly known as the Singapore Project. It consisted on the construction of buildings in the sites of the slums, replacing the previous (horizontal) urban structure by a new (vertical) one. There was no involvement of the community on project definition or its execution, which was done by external contractors. The buildings were strategically located in places with a high visibility, advertising the public work to the people outside the community. (Pasternak and Baltrusis, 2003: 29).

A study shows that the average cost of the Singapore Project was estimated between R\$ 20 thousand to R\$ 25 thousand for each apartment, which was higher than the average cost for the houses (R\$ 10 thousand) and apartments (R\$ 13,3 thousand) built by the process of *mutirão* (Amaral, 2002: 31). The same study affirms that, in spite of these cost difference, the apartments in the Singapore Projects were smaller (42 square meters) than the average housing unit built by *mutirão* (60 square meters). Furthermore, it reports a reduction on the supply of new houses. While the Singapore Project built 5.5 thousand apartments in 1993-1996 and 14 thousand units in 1997-2000, in the Erundina government provided 44 thousand new housing units.

The urban upgrading approach of the Singapore Project was restricted to the physical construction of new housing units, without the provision of complementary social inclusion projects. The project only contemplated residential areas, without providing space for the development of small business units. Without means to improve the household income, the dwellers had difficulty to cope with expenses such as the amortizations on their housing loan, the maintenance costs of the building, the tariffs for public services, and so on and so forth (Bueno, 2000: 85).

Another source of criticism is that the Singapore Project, by replacing the existing houses by new buildings, lost the previous investments made by the house owners and, in some cases, by the municipality itself. For example, Bueno (2000: 84) presents the case of *Favela Autodromo*, where a Singapore Project was built replacing a slum that had already been urbanized in another administration.

Summing up, there was a marked difference between the approaches represented by the Singapore Project and the urbanization projects implemented in the ABCD region, as analyzed in this section. In opting to verticalize the slums rather than upgrade the existing urban structure, it reveals a conservative view of the slum as a problem, and not as a social space that needs to be integrated into the city.

III. THE EVOLUTION OF THE SOCIO-ECONOMICS INDICATORS FOR CENSITARY SECTOR BETWEEN 1991 AND 2000.

1. Databases and Methodology

This paper uses demographic data from the Census of 1991 and 2000, aggregated for censitary sectors and subnormal sectors, in order to identify, through certain indicators, some results of the urbanization projects in the slums during the decade of 1990.

The IBGE definition for the censitary sectors in general, and for the subnormal censitary sectors, are as follows: “censitary sector is the smaller territorial unity, with identifiable physical boundaries in the site, with the adequate dimension for research and that, in conjunct, is equivalent to the totality of the national territory (...)”. The “special sector of a subnormal agglomeration” is the conjunct of at least 51 domiciles, occupied or having occupied, until recently, land owned by a third party (private or public), generally disposed in disorderly and dense fashion, and deprived, on its majority, of essential public services”.

Although there are works on this subject using aggregated data per subnormal censitary sectors (Preteceille and Valadares, 2000), the present paper goes beyond the observation of the data for each moment, comparing the indicators for the same sector (or minimum comparable area) in 1991 and 2000. In order to accomplish this, we build a compatibility of subnormal sectors in the two periods, using the corresponding tables of censitary sectors provided by the IBGE⁷. This procedure allowed us to classify the subnormal sectors in groups of areas according to the evolution of the sewage network coverage (that was used as a proxy to the urbanization level of the sectors) between 1991 and 2000.

It is important to observe that part of the codified sectors as subnormal in the database of 1991 were no longer subnormal sectors in 2000 (in the MRSP, from the total of 1,248 subnormal sectors in 1991, 104 were not in 2000) and vice versa, part of the subnormal sectors in the base of 2000 was not under this classification in 1991 (in the MRSP, on the total of 2,053 subnormal sectors in 2000, 516 did not exist in 1991). From the sectors that were subnormal in 1991 and in 2000, 95% could be made compatible, that is, the censitary information could be compared from a minimum common area. From the sectors that were subnormal only in 1991 or only in 2000, the compatibility was smaller, 51% and 48%, respectively. The percentages of compatible sectors/areas were also different between the municipalities. Those municipalities with a larger number of subnormal sectors, Osasco and Guarulhos, presented a lower percentage of compatibility (68% and 48%, respectively) in comparison to the municipalities of Santo Andre (95%), Sao Bernardo (80%), Diadema (99%), Maua (96%) and Sao Paulo (88%).

⁷ We consider that the sectors are “compatible” when there is a “one to one” correspondence in the tables from IBGE or, alternatively, when it is possible to build “minimum comparable areas” between the two periods, excluding the cases where the sectors are formed by “parts of areas” from other sectors.

In order to preserve a high level of correspondence between the sectors of 1991 and 2000, the present paper focuses on the sectors that had been and continued to be the subnormal in the census of the 1991 and 2000, and that could be made compatible. They counted 1,492 sectors, equivalent to 73% of the total subnormal sectors of the MRSP in 2000. These sectors were transformed into 1,078 minimum comparable areas for 1991 and 2000. The paper presents the results on each municipality only for the cities of Sao Paulo, Santo Andre, Sao Bernardo, Diadema and Maua.

2. Socio-Economic Indicators for the MRSP

Between 1991 and 2000 the indicators for schooling, income and access of urban services improved in the censitary sectors of the MRSP in general, and also in the subnormal sectors, as shown in Tables 1 and 2. A large distance remained between the average socio-economic indicators for the region and for the subnormal sectors, notably in respect to higher schooling indicators (equivalent to the high school or superior - above 11 years of studying), higher income (more than 5 minimum wages), sewage network coverage and, also, the proportion of owned domiciles in owned land.

As can be observed in Table 2, the proportion of the heads of domiciles with 11 to 14 years of schooling (equivalent to the completed high school study) was only 1.5% in the subnormal sectors in 1991, much less than the average of 14%; in 2000, although this proportion increased to 6% in the subnormal sectors, remained considerably lower than the average of 19% in the MRSP. At the same time, the proportion of heads with university degree (more than 15 years of studying) did not exceed 1% in the subnormal sector in 2000, while the average of the sectors in the MRSP was 10%.

The proportion of the heads with income above 5 minimum wages in the subnormal sectors was 7% in 1991 and 11% in 2000, while in the average of the sectors of the MRSP reached 37% and 41% in the respective years. With effect, the majority of subnormal sectors remained between the lowest income sectors of the MRSP both in 1991 and in 2000, as it can be seen in Table 1, which shows the proportion of the subnormal sectors in the deciles of the average income by head per censitary sector for the two years.

Table 1 - Income Groups in MRSP: 1991 and 2000

Income Groups (decile)	1991				2000			
	Subnormal Sectors		All Sectors		Subnormal Sectors		All Sectors	
	Households	(a/b)	Households	(b)	Households	(a/b)	Households	(b)
1	176,765	76.3%	44.6%	396,163	276,043	66.3%	55.3%	499,485
2	36,948	15.9%	9.3%	396,315	101,587	24.4%	20.3%	499,456
3	11,690	5.0%	3.0%	395,897	22,343	5.4%	4.5%	499,641
4	3,908	1.7%	1.0%	396,116	12,611	3.0%	2.5%	499,557
5	1,485	0.6%	0.4%	396,112	2,659	0.6%	0.5%	499,264
6	699	0.3%	0.2%	396,033	520	0.1%	0.1%	499,537
7	189	0.1%	0.0%	396,111	168	0.0%	0.0%	499,592
8	51	0.0%	0.0%	396,044	16	0.0%	0.0%	499,350
9	-	0.0%	0.0%	396,175	163	0.0%	0.0%	499,551
10	-	0.0%	0.0%	395,870	-	0.0%	0.0%	499,273
Total	231,735	100.0%	5.9%	3,960,836	416,110	100.0%	8.3%	4,994,706

Table 2 - Social Indicators by Censitary Sector: 1991 and 2000

Indicator		1991				2000			
		All Sectors	Subnormal all	Subnormal only in 1991	Subnormal 1991 e 2000 ^a	All Setores	Subnormal all	Subnormal only in 2000	Subnormal 1991 e 2000 ^a
Illiterate adults (%)		8.4	22.3	23.9	22.1	5.5	12.2	12.3	12.1
Years of Schooling of Household Head	up to 3 (%)	25.2	53.4	54.1	53.2	19.8	37.0	36.6	37.0
	from 4 to 10 (%)	50.8	44.7	43.1	44.9	49.8	55.8	56.6	55.5
	from 11 to 14 (%)	13.7	1.5	2.1	1.4	19.3	6.2	5.8	6.3
	more than 15 (%)	10.3	0.4	0.8	0.4	10.9	1.0	0.8	1.1
Income of Household Head	up to 2 mw (%)	25.9	48.0	50.0	47.7	22.8	40.8	41.5	40.5
	from 2 to 5 mw (%)	37.2	44.9	43.4	45.0	36.1	48.2	48.6	48.1
	more than 5 mw (%)	37.0	7.1	6.6	7.2	41.1	11.0	10.0	11.5
Households linked to services of	water (%)	94.4	83.1	75.7	84.0	96.6	96.1	91.3	97.8
	sewerage (%)	73.3	20.7	23.9	20.4	81.4	51.8	39.8	56.3
	concrete cesspit (%)	6.6	12.1	9.5	12.0	6.2	5.6	10.8	3.8
	garbage collection (%)	93.8	70.4	60.7	71.9	98.5	96.2	93.8	97.1
Owned Households (%)		64.6	94.4	91.4	94.7	70.0	71.8	73.4	71.4
Rented Households (%)		26.3	2.3	4.1	2.1	19.6	5.3	4.4	5.6
Assigned Households (%)		8.5	2.2	3.3	2.1	7.9	8.6	7.8	8.9
Other condition (%)		0.6	1.1	1.3	1.1	2.6	14.3	14.4	14.1
Owned Land (%) ^b		90.2	11.6	15.7	9.3	62.3	27.4	29.8	26.7
Households	(num)	3,960,843	231,735	24,258	201,639	4,994,933	416,143	107,904	302,324
Population	(num)	15,444,941	1,051,673	108,537	916,140	17,878,704	1,666,033	430,551	1,211,148

a . Only compatibilized sectors.

b. Only Owned Households

In relation to basic urban services, it was observed a convergence of indicators for water coverage and garbage collection between the subnormal sector and the average sectors of the MRSP. In 2000, the coverage of the general water network was about 96% both in the subnormal sectors and in the average of the MRSP, e the coverage of garbage collection was 96% and 98.5%, respectively. However, the level of coverage for sewage network, despite of having practically doubled for the subnormal sectors during the decade, reaching 52% in 2000, still remained below the average of the MRSP in the same year of 81%.

Table 2 presents, besides the results for the total of subnormal sectors, the results of the indicators for the group of sectors that were subnormal in 1991 (2000) and were NOT subnormal in 2000 (1991), as well as, for each year, the sectors that were subnormal in the two census and that could be transformed into minimum comparable areas compatible (see section 3.1). We can observe that in 1991, most of the indicators are slightly worse in the subnormal sectors only in 1991 (around 10% of the total of the subnormal total), except in the case of higher schooling and higher basic sanitation coverage. An observation in the description of these sectors indicate that there are sectors that turned into housing projects – such as Singapore’s building - as well as areas where the slums were removed. In 2000, practically all indicators were worse for the group of sectors that did not exist in the previous census (around 28% of the total of the subnormal in that year) in comparison to those that existed in both census, except in the case of house ownership. Theses results, however, were not analyzed in this study, and should be dealt with in future research.

In the next subsection we present the results only for the conjunct of sectors that were subnormal in the two censuses and that could be compared from minimum comparable areas. As it is going to be seen, the more urbanized subnormal sectors presented better indicators of schooling and income and, at certain extent, these sectors distinguished from the average of the subnormal sectors of the MRSP in relation to the attributes such as the access to the high school grade and income higher than 5 minimum wages.

3. Types of areas according to the evolution of basic sanitation.

In order to compare the evolution of the socio-economic indicators between urbanized and not urbanized subnormal sectors, we propose a classification of areas according to the evolution of the sewage network coverage. The choice of this variable as a proxy for the level of urbanization of the sectors was due to the lack of more detailed information on urbanization of the sectors and, also, to the greater capacity of the sanitation variable to distinguish the sectors in comparison to the rest of basic urban services with available information. The difference on the evolution of the urbanization levels of the subnormal sectors, between 1991 and 2000, were summarized in 9 situations that were related to the proportion of domiciles linked to the general sewage network in the respective censuses. This classification is valid only to the sectors that were subnormal in 1991 and in 2000, and that could be classified in minimum comparable areas. These types of areas are discriminated in Table 3:

Area	1991	2000	Evolution
A00	less than 20%	less than 20%	low to low
A01	less than 20%	between 20% and 80%	low to intermediary
A02	less than 20%	more than 80%	low to high
A10	between 20% and 80%	less than 20%	intermediary to low
A11	between 20% and 80%	between 20% and 80%	intermediary to intermediary
A12	between 20% and 80%	more than 80%	intermediary to high
A20	more than 80%	less than 20%	high to low
A21	more than 80%	between 20% and 80%	high to intermediary
A22	more than 80%	more than 80%	high to high

The definition of the “landmark” proportions to the coverage of sewage network derives from the verification of the frequency distribution of this variable. Although the intermediate level corresponds to a wide range in terms of the level of the coverage (between 20% and 80%), the choice of these proportions resulted in a reasonable number in terms of the relative frequency of these areas. In effect, the distribution of the areas is concentrated in low values in 1991 and low and high in 2000.

Table 4 shows the frequency of the areas according to the evolution of the basic sanitary condition between 1991 and 2000. It shows that around ¼ of the areas was kept with low coverage for sanitary treatment in the two census (area A00), while ¼ changed from low to high coverage (areas A02) and about 1/5 moved from low coverage to intermediate (areas A01). At the same time, the majority of the area that presented intermediate coverage in 1991 changed to high coverage in 2000 (areas A12) and the majority of the area with high coverage in 1991 was kept in the same level in 2000 (A22). Around 4% of the areas reduced the level of sanitation (area A10, A20, A21).

		Situation in 1991			
		0	1	2	total
Situation in 2000	0	A00	A01	A02	
		284	210	269	763
		26.5%	19.6%	25.1%	71.3%
	1	A10	A11	A12	
		19	34	123	176
		1.8%	3.2%	11.5%	16.4%
2	A20	A21	A22		
	14	14	103	131	
	1.3%	1.3%	9.6%	12.2%	
total		317	258	495	1070
		29.6%	24.1%	46.3%	100.0%

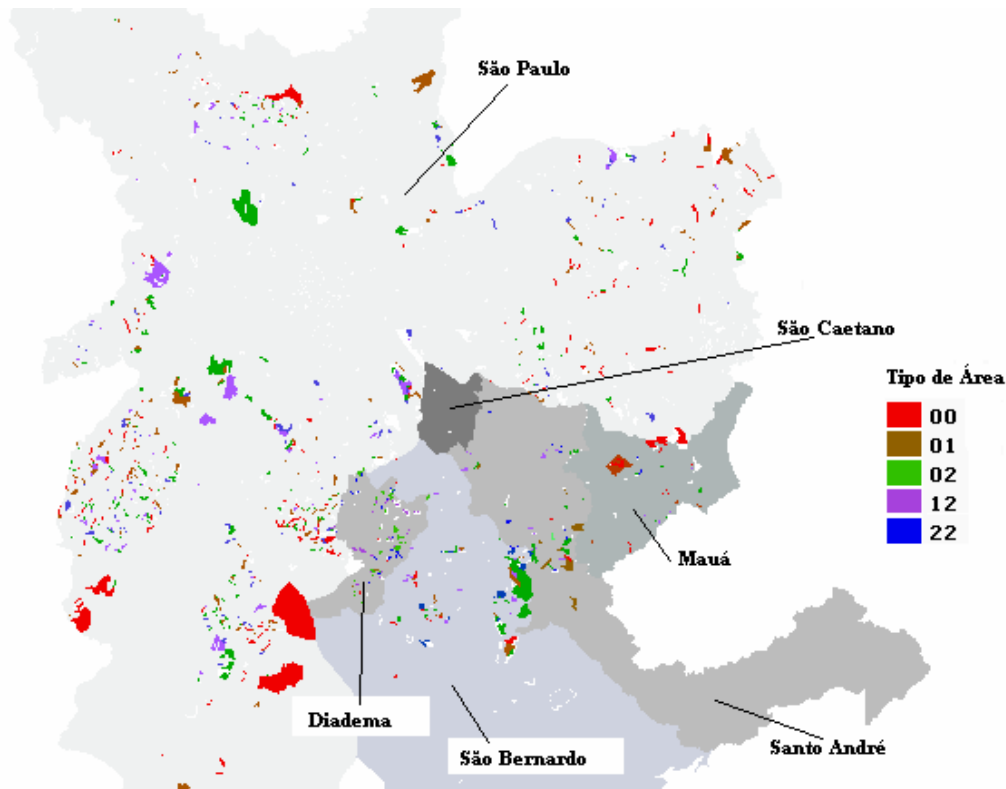
The proportions in the types of the area were considerably different between the selected municipalities, as shown in Table 5. In Diadema and Santo Andre, around 40% of the areas already had intermediate or high sanitation levels (A12 and A22) in 1991 and the programs on sanitation and urbanization remained intense during the decade of 1990. In the municipality of Sao Bernardo do Campo, although showing in 1991 a similar situation as the city of Sao Paulo, the urbanization intensified between 1991 and 2000, overcoming the city of Sao Paulo in terms of areas with high levels of

urbanization. In the municipality of Santo Andre and Diadema, only a small portion of the sectors kept a low level of sanitation in the 2 census (area A00, 7% and 8%, respectively), while in Sao Bernardo do Campo, this proportion was 16%, in Sao Paulo, more than 30%, in Maua 28%, and in the rest municipalities of the MRSP was 36%.

Table 5 - Area Type Frequencies by Municipality

	DIADEMA		SANTO ANDRÉ		SÃO BERNARDO		MAUÁ	
A00	6	6.7%	4	8.2%	11	15.9%	12	28.6%
A01	4	4.5%	9	18.4%	11	15.9%	13	31.0%
A02	41	46.1%	13	26.5%	26	37.7%	6	14.3%
A10	0	0.0%	0	0.0%	0	0.0%	1	2.4%
A11	0	0.0%	0	0.0%	3	4.3%	4	9.5%
A12	18	20.2%	11	22.4%	9	13.0%	4	9.5%
A20	0	0.0%	0	0.0%	0	0.0%	0	0.0%
A21	1	1.1%	2	4.1%	2	2.9%	0	0.0%
A22	19	21.3%	10	20.4%	7	10.1%	2	4.8%
TOTAL	89	100.0%	49	100.0%	69	100.0%	42	100.0%
	SÃO PAULO		DEMAIS		TOTAL			
A00	187	29.1%	64	36.0%	284	26.5%		
A01	135	21.0%	38	21.3%	210	19.6%		
A02	131	20.4%	52	29.2%	269	25.1%		
A10	15	2.3%	3	1.7%	19	1.8%		
A11	21	3.3%	6	3.4%	34	3.2%		
A12	68	10.6%	13	7.3%	123	11.5%		
A20	14	2.2%	0	0.0%	14	1.3%		
A21	9	1.4%	0	0.0%	14	1.3%		
A22	63	9.8%	2	1.1%	103	9.6%		
TOTAL	643	100.0%	178	100.0%	1070	100.0%		

The Figure below illustrates the distribution of types of areas in the selected municipalities.



The remaining of this paper is focused on areas with highest frequencies – A00, A01, A02, A12 and A22- that is, we discuss the “general case” and put aside the other areas – A10, A11, A20 and A21- as they represents a very low number of the sectors compared to the other types of areas and, furthermore, they deserve a different treatment.

In order to compare the evolution of the socio-economic indicators in the different types of the areas, we consider the type A00 as the “control group” and the types A01, A02, A12 and A22 as “treatment group”. In other words, we consider the variation of the indicators in the type A00 to show the variation in time regardless of the increase in urbanization, that is, it represents the time trend of the variation in the indicators. In the other areas, the variation of the indicators between the two periods is understood as a result of the time trend plus a component related specifically to the effect of higher urbanization (or treatment/program). We use the broad idea of the method of “the differences in differences” and discount the time trend (post-pre variation of the control group) from the post-pre variation of the treatment group, in order to capture the real effect of the urbanization on socio-economic indicators in different type of the areas.

Technically, the comparison between the types of areas in “the differences in differences” should only be applied to similar groups (in terms of some attributes) before the program/treatment. In the case of the proposed exercise, this would be the group that started with low level of sanitation in 1991 and reached a different outcome in 2000, such as areas A00, A01 and A02. However, in this exercise we also included the types of areas A12 and A22, in order to also present some relevant information on these types compared to the areas that were not urbanized, even taking into account that they had a different initial condition. It should also be emphasized that the present exercise only shows “average” results to the selected groups and does not perform statistic tests in order to measure the significance levels of the results.

4. Results – Sao Paulo Metropolitan region

4.1. Differences between the types of areas

Table 6 displays the socio-economic indicators in the two years census for each type of area, as well as the difference on the indicators between the two periods and, in the case of the treatment groups, the difference compared to the control group. In that table, the column “Dif Post-Pre” shows the variation (difference) of each indicator between the census and the column ”Dif-Dif” shows the variation (difference) between the changes in that area, and the change observed in the control group.

Considering the type A01 and its comparison with type A00 (column Dif-Dif) we verify that the indicators of the first type had a better performance than the control group, in relation to schooling (negative sign in the proportion of low schooling and positive for the higher) and the condition of domicile/land occupation (positive for owned domiciles and land). In relation to income and some urban services, such as water network, the results did not indicate a better performance of A01 in relation to the trend observed in the control group. One should also observe that there was a higher population growth in areas A01 compared to areas A00, which could have influenced the results.

In the areas type A02, which had a higher progress in the period in terms of basic sanitation, the difference of the indicators were always on the expected direction and the highest among the areas analyzed. In effect, schooling and income increased and the indicators on condition of occupation improved for owned domiciles and land. In relation to the urban services, it was observed a negative variation only on the indicators that had already been close to 100% coverage. Therefore, in comparison to the areas type A00, the areas A02 showed on average a much better performance, as it could be seen from the results “Dif-Dif”.

In the areas A12 we verified similar results as in the area A02, however with less intensity. In effect, the areas A12 started from a better situation in practically almost all indicators in relation to the areas A02, and therefore, even reaching a better result in 2000, they presented a lower variation compared to the areas A02. The same could be said for the areas A22. Notice that the areas A22 and A12 showed, in general, better socio-economic indicators in 2000 compared to the other areas. For example, the heads of family with income 5 minimum wages were 14% and 13%, respectively, and the level of high school education was around 7.5% in the two types of areas, which were some percentage points above the results for A00.

To sum up, the areas that reached higher levels of urbanization in 2000 (A02, A12 and A22) were distinguished from the rest in terms of the proportion of heads of families with higher level of schooling as well as in relation to the proportion of heads with a higher income level.

Table 6 - Differences in Differences for the MRSP

	A00 (control)			A01					A02					A12					A22				
	1991	2000	Dif Post-Pre	1991	2000	Dif Post-Pre	Dif-Dif A01-A00	1991	2000	Dif Post-Pre	Dif-Dif A02-A00	1991	2000	Dif Post-Pre	Dif-Dif A12-A00	1991	2000	Dif Post-Pre	Dif-Dif A22-A00				
Illiterate adults (%)	22.67	13.26	-9.41	23.32	12.71	-10.61	-1.2	22.26	11.28	-10.98	-1.57	19.85	10.89	-8.96	0.45	19.82	10.89	-8.93	0.48				
Years of up to 3 (%)	53.88	38.52	-15.36	54.23	37.98	-16.25	-0.89	53.63	35.96	-17.67	-2.31	50.6	34.95	-15.65	-0.29	50.68	35.3	-15.38	-0.02				
Schooling from 4 to 10 (%)	44.59	55.07	10.48	44.07	54.77	10.7	0.22	44.64	56.15	11.51	1.03	47.18	56.65	9.47	-1.01	46.9	56.04	9.14	-1.34				
of Household Head from 11 to 14 (%)	1.23	5.4	4.17	1.32	6.04	4.72	0.55	1.4	6.69	5.29	1.12	1.66	7.4	5.74	1.57	1.84	7.52	5.68	1.51				
Income up to 2 mw (%)	50.85	43.15	-7.7	47.57	41.68	-5.89	1.81	47.04	38.71	-8.33	-0.63	45.21	36.35	-8.86	-1.16	42.96	37.21	-5.75	1.95				
of Household from 2 to 5 mw (%)	43.33	47.57	4.24	45.01	47.51	2.5	-1.74	46.15	48.55	2.4	-1.84	45.37	49.97	4.6	0.36	47.54	48.27	0.73	-3.51				
Head more than 5 mw (%)	5.82	9.27	3.45	7.42	10.81	3.39	-0.06	6.81	12.75	5.94	2.49	9.42	13.68	4.26	0.81	9.5	14.52	5.02	1.57				
Households water (%)	78.11	97.34	19.23	81.32	96.42	15.1	-4.13	84.43	99.45	15.02	-4.21	90.11	99.55	9.44	-9.79	97.49	98.15	0.66	-18.57				
linked to sewerage (%)	2.99	6.42	3.43	4.45	45.67	41.22	37.79	4.35	95.5	91.15	87.72	49.7	96.95	47.25	43.82	91.97	96.26	4.29	0.86				
services of concrete cesspit (%)	16.08	7.19	-8.89	14.98	4.54	-10.44	-1.55	12.9	1.03	-11.87	-2.98	6.46	1.35	-5.11	3.78	0.53	1.37	0.84	9.73				
garbage collection (%)	64.72	93.37	28.65	64.48	96.93	32.45	3.8	73.86	99.11	25.25	-3.4	82.85	99.74	16.89	-11.76	84.46	99.52	15.06	-13.59				
Owned Households (%)	94.43	65.98	-28.45	94.91	69	-25.91	2.54	97	76.32	-20.68	7.77	91.63	75.28	-16.35	12.1	94.23	75.83	-18.4	10.05				
Rented Households (%)	1.39	3.69	2.3	2.17	6.05	3.88	1.58	1.78	5.83	4.05	1.75	3.28	7.83	4.55	2.25	2.91	7.6	4.69	2.39				
Assigned Households (%)	3.02	8.04	5.02	2.23	9.66	7.43	2.41	1.05	9.56	8.51	3.49	2.85	8.56	5.71	0.69	1.28	8.65	7.37	2.35				
Other condition (%)	1.16	22.29	21.13	0.69	15.28	14.59	-6.54	0.17	8.29	8.12	-13.01	2.25	8.34	6.09	-15.04	1.57	7.93	6.36	-14.77				
Owned Land (%) ^b	6.6	20.72	14.12	8.49	24.96	16.47	2.35	7.9	32.93	25.03	10.91	11.32	34.53	23.21	9.09	12.79	28.12	15.33	1.21				
Households (mean)	181	270	90	208	347	139	49	194	288	94	4	175	234	59	-31	153	221	68	-22				
total	51301	76813	25512	43722	72910	29188	3676	52167	77537	25370	-142	21507	28754	7247	-18265	15799	22760	6961	-18551				
Population (mean)	830	1085	255	943	1398	455	200	877	1153	276	21	785	924	138	-116	695	875	180	-75				
(total)	235858	308230	72372	197944	293511	95567	23195	236030	310261	74231	1859	96611	113641	17030	-55342	71610	90130	18520	-53852				

4.2. The difference between municipalities

The difference between the results per municipality of the urbanization programs in the slums can be analyzed by comparing each type of the area between municipalities. In the present exercise, we show the results such comparison for the most urbanized areas on each municipality, that is, the areas A02. The reason of this choice is because they are the most important and, also, to be in harmony with the general idea of the method of “the differences in differences”. Table 7 shows the results of the differences of the indicators to the selected municipalities. In that table, the control group is again the area A00 for the MRSP, and the post-pre results for this area is compared to the post-pre results of the area A02 for each municipality. The table also shows the results of the areas A02 in the MRSP to allow its comparison with the results of A02 for each municipality.

Firstly, we observe that in all selected municipalities, except Maua, there was, in general, a better performance in the indicators of the areas A02 in relation to the performance of the areas A00 in the MRSP. As can be seen in the column “Dif-Dif” of each municipality, the results follow the general trend of a positive signal to higher schooling. The same trend is observed for income, and there was a positive signal to ownership of domiciles and land. There are exceptions, such as in the case of adult illiteracy, which got a positive signal in Santo Andre, Sao Bernardo and Maua. Land ownership had a negative signal in Sao Bernardo and Maua, although it was a consequence of these municipalities having better indicators in 1991.

When we compare the areas A02 for each municipality with the area A02 for the whole MRSP (that is, comparing Dif-Dif for each municipality with “Dif-Dif for the MRSP), the best performance is in Santo Andre, Diadema and Sao Bernardo. The municipality of Diadema had, in general, the largest variations in the socio-economic indicators among all the selected municipalities, being above the average of the areas A02 for the MRSP. In Santo Andre, the largest differences were in the proportion of the heads of families with 11 to 14 years of schooling, income above 5 minimum wages, and ownership of domiciles, all having variations superior than the results for the areas A02 of the MRSP. In Sao Bernardo, the most important difference of the areas A02 of this municipality compared with the area A02 for the MRSP was in the indicator for income above 5 minimum wages. One should notice that, differently from Diadema, the areas A02 for the municipalities of Santo Andre and Sao Bernardo started in 1991 with better indicators than the average A02 in the MRSP.

The areas A02 for the city of Sao Paulo presented variations close to the average of the MRSP (also because it is the largest city in the metropolitan area), or even worse. The municipality of Maua (which has a small number of the areas A02), had, in general, worse results than the average area type A02 in the MRSP.

Table 7 - Differences in Differences by Municipality

INDICATOR	A00 (control)			A02 - RMSP				A02 - SÃO PAULO				A02 - MAUÁ			
	1991	2000	Dif Post-Pre	1991	2000	Dif Post-Pre	Dif-Dif A02-A00	1991	2000	Dif Post-Pre	Dif-Dif A02-A00	1991	2000	Dif Post-Pre	Dif-Dif A02-A00
Illiterate adults (%)	22.67	13.26	-9.41	22.26	11.28	-10.98	-1.57	23.15	11.80	-11.35	-1.94	21.54	12.25	-9.29	0.12
Years of up to 3 (%)	53.88	38.52	-15.36	53.63	35.96	-17.67	-2.31	55.22	38.34	-16.87	-1.51	46.17	35.42	-10.75	4.61
Schooling from 4 to 10 (%)	44.59	55.07	10.48	44.64	56.15	11.51	1.03	43.03	53.91	10.87	0.39	52.04	57.34	5.30	-5.18
of Household Head from 11 to 14 (%)	1.23	5.4	4.17	1.4	6.69	5.29	1.12	1.34	6.27	4.93	0.76	1.79	6.27	4.49	0.32
Income up to 2 mw (%)	50.85	43.15	-7.70	47.04	38.71	-8.33	-0.63	45.99	40.39	-5.60	2.10	38.18	40.05	1.88	9.58
of Household from 2 to 5 mw (%)	43.33	47.57	4.24	46.15	48.55	2.4	-1.84	46.98	48.19	1.21	-3.03	56.35	48.75	-7.60	-11.84
Head more than 5 mw (%)	5.82	9.27	3.45	6.81	12.75	5.94	2.49	7.03	11.42	4.39	0.94	5.47	11.19	5.73	2.28
Households water (%)	78.11	97.34	19.23	84.43	99.45	15.02	-4.21	88.38	99.69	11.31	-7.92	88.78	99.70	10.93	-8.30
linked to sewerage (%)	2.99	6.42	3.43	4.35	95.5	91.15	87.72	4.04	95.34	91.29	87.86	5.61	95.35	89.74	86.31
services of concrete cesspit (%)	16.08	7.19	-8.89	12.9	1.03	-11.87	-2.98	10.21	1.04	-9.17	-0.28	14.80	1.55	-13.25	-4.36
garbage collection (%)	64.72	93.37	28.65	73.86	99.11	25.25	-3.40	73.81	98.89	25.08	-3.57	67.08	99.19	32.10	3.45
Owned Households (%)	94.43	65.98	-28.45	97	76.32	-20.68	7.77	96.73	73.53	-23.19	5.26	97.96	82.95	-15.01	13.44
Rented Households (%)	1.39	3.69	2.3	1.78	5.83	4.05	1.75	2.07	6.50	4.43	2.13	1.40	3.69	2.29	-0.01
Assigned Households (%)	3.02	8.04	5.02	1.05	9.56	8.51	3.49	1.12	6.80	5.68	0.66	0.13	9.23	9.10	4.08
Other condition (%)	1.16	22.29	21.13	0.17	8.29	8.12	-13.01	0.09	13.16	13.07	-8.06	0.51	4.13	3.62	-17.51
Owned Land (%) ^b	6.6	20.72	14.12	7.9	32.93	25.03	10.91	10.25	31.94	21.69	7.57	17.35	14.32	-3.03	-17.15
Households (num)	51301	76813	25512	43722	72910	29188		25994	36707	10713		784	1355	571	
Population (num)	235858	308230	72372	197944	293511	95567		118916	146958	28042		3636	5361	1725	

INDICATOR	A02 - DIADEMA				A02 - SANTO ANDRÉ				A02 - SÃO BERNARDO			
	1991	2000	Dif Post-Pre	Dif-Dif A02-A00	1991	2000	Dif Post-Pre	Dif-Dif A02-A00	1991	2000	Dif Post-Pre	Dif-Dif A02-A00
Illiterate adults (%)	24.36	11.27	-13.09	-3.68	17.98	10.09	-7.89	1.52	19.12	10.27	-8.85	0.56
Years of up to 3 (%)	55.19	34.67	-20.53	-5.17	49.05	32.99	-16.06	-0.70	47.83	31.14	-16.69	-1.33
Schooling from 4 to 10 (%)	43.68	58.05	14.37	3.89	49.19	57.51	8.32	-2.16	49.72	60.44	10.72	0.24
of Household Head from 11 to 14 (%)	0.99	6.57	5.57	1.40	1.34	8.27	6.93	2.76	2.13	7.47	5.34	1.17
Income up to 2 mw (%)	47.39	35.28	-12.11	-4.41	46.87	40.66	-6.21	1.49	46.60	33.07	-13.53	-5.83
of Household from 2 to 5 mw (%)	47.30	52.15	4.85	0.61	45.28	43.52	-1.76	-6.00	45.51	50.23	4.72	0.48
Head more than 5 mw (%)	5.31	12.58	7.26	3.81	7.86	15.82	7.96	4.51	7.88	16.70	8.82	5.37
Households water (%)	85.64	99.82	14.17	-5.06	90.95	99.77	8.82	-10.41	70.26	98.39	28.13	8.90
linked to sewerage (%)	3.74	97.88	94.14	90.71	5.69	96.57	90.89	87.46	5.27	94.12	88.85	85.42
services of concrete cesspit (%)	13.94	0.54	-13.40	-4.51	20.61	1.32	-19.29	-10.40	7.53	0.70	-6.83	2.06
garbage collection (%)	65.35	99.74	34.40	5.75	70.06	99.77	29.71	1.06	84.46	98.75	14.29	-14.36
Owned Households (%)	98.10	84.84	-13.26	15.19	97.20	89.08	-8.13	20.32	98.30	78.44	-19.86	8.59
Rented Households (%)	1.02	4.40	3.39	1.09	1.46	5.78	4.33	2.03	0.81	5.90	5.08	2.78
Assigned Households (%)	0.78	7.79	7.01	1.99	1.22	3.82	2.60	-2.42	0.79	13.49	12.70	7.68
Other condition (%)	0.11	2.97	2.86	-18.27	0.12	1.32	1.20	-19.93	0.09	2.17	2.08	-19.05
Owned Land (%) ^b	1.57	32.41	30.84	16.72	7.12	30.20	23.08	8.96	11.76	43.81	32.04	17.92
Households (num)	8358	10947	2589		4255	6069	1814		5296	12416	7120	
Population (num)	36785	43633	6848		18855	24106	5251		23186	49648	26462	

IV. FINAL CONSIDERATIONS

The decade of the 1990s saw an improvement in some socio-economic indicators for the population living in slums. The data shows an increase in household income, years of studying, and urban infrastructure in poor areas. This advance in some social indicators can be explained, in part, by macroeconomic factors, as Brazil moved from high inflation to price stability from 1994 onwards. High inflation has a perverse distributional impact, as poor households see their real income reduced as prices increase.

In this decade there were several initiatives of slum urbanization in the MRSP, as well as in other Brazilian cities⁸. By the end of the 1990s, less than 10% of the areas in precarious situation of sanitation (A00, A10 and A20) remained in the cities of Diadema and Santo Andre, compared to 16% in Sao Bernardo. The latter, however, had initiated the decade in a worse situation than the other two cities. The city of Sao Paulo also made progress on the urbanization of slums, but by the year 2000 there were still more than 30% of areas with precarious sanitation. Therefore, the progress in the ABCD region was much more intense than in the city of São Paulo.

These different outcomes reveal that a greater capacity to raise tax revenues does not imply, necessarily, in larger investments in urbanization. Although São Paulo has the largest budget among the Brazilian cities, in the ABCD region there was more progress in urbanization during the 1990s, which can indicate a more efficient use of public resources. Another important point was the discontinuity of policies in São Paulo, due to the political dispute between right and left wing parties, resulting in losses on public investments.

The “differences in differences” analysis shows that, although there was a progress in the social indicators in the non-urbanized slums (A00), in the urbanized slums (A01, A02) the improvements were more relevant. The analysis of the results for each municipality reveals that this positive relation between urbanization and social indicators was stronger in the ABCD region (notably in Diadema) than in the city of Sao Paulo.

This difference in performance could be explained from the different urbanization approaches adopted by the cities of ABCD and São Paulo during the 1990s. A key aspect of urban policy in the ABCD region was the participatory approach, as the poor communities influenced in the definition of the priorities, in the implementation of the projects and, finally, in monitoring the results. Even though there were inequalities in education and income within the slums, people were able to overcome their differences in order to achieve a common goal. In contrast, the conservative administration in São Paulo (1993-2000) broke the ties with the communities and the social movements, as the municipality centralized the decisions.

Another important characteristic of the ABCD approach was that urbanization was accompanied by social inclusion policies, improving health, education and income on these communities. Urbanization was seen as part of a wider process, which included the economic and social integration of the slums into the city. On the other hand, the model

⁸ One of the most famous was the Favela-Bairro, in Rio de Janeiro. For an evaluation of this urban upgrading project, see Kanto (2005).

of the Singapore project in São Paulo only dealt the physical aspects of urbanization, without taking into account the sustainability of the community after the urban intervention.

In conclusion, the urbanization projects had a positive impact on the social indicators in the poor communities of the MRSP. This improvement was not sufficient to eradicate the differences between the slums and the rest of the city, but it was an important step to reduce the vulnerabilities of the poor communities. The paper suggests that the urbanization projects were more efficient when they accompanied by social inclusion programs, land regularization, and participatory mechanisms.

BIBLIOGRAPHY

- Amaral, A., 2002, Habitação na Cidade de São Paulo, São Paulo, Pólis/PUC-SP, Observatório dos Direitos do Cidadão, 4.
- Ancona, A. e S. Lareu, 2001, Avaliação do Programa Guarapiranga – Custos e Componentes de Infra-estrutura, São Paulo, Instituto de Pesquisas Tecnológicas, Seminário de Avaliação de Projetos.
- Baltrusis, N., 2003, Instrumentos urbanísticos e o acesso à terra urbana em Diadema: o caso das AEIS, Porto Alegre, Ambiente Construído v. 3 n. 4.
- Baltrusis, N., 2004, AEIS em Diadema 10 anos: a propriedade cumprindo a sua função social, Niterói, VIII Seminário de História da Cidade e do Urbanismo.
- Bueno, L., 2000, Projeto e Favela: Metodologia para projetos de urbanização, São Paulo, FAU-USP, PhD thesis..
- Denaldi, R., 2004, Santo André: urbanização de favelas e inclusão social, Porto Alegre, Ambiente Construído v. 4 n. 4.
- Ervilha, T., 2003, Integração e Cidadania - Avaliação e Monitoramento dos Serviços de Infra-estrutura em Favelas Urbanizadas em Santo André, Santo André, 33^a Assembléia Nacional da ASSEMAE
- Fix, M., P. Arantes e G. Tanaka, 2003, The Case of São Paulo - Brazil, Understand Slums: Case Studies for the Global Report on Human Settlements 2003.
- Kanto, S., 2005, An Evaluation of Favela-Bairro: a Development Project for Squatter Settlements in Rio de Janeiro, Brazil, London, LSE, MSc Dissertation.
- Larangeira, A., 2003, Estudo de Caso: Programa Santo André Mais Igual, Rio de Janeiro, Prêmio Caixa Melhores Práticas em Gestão Local.
- Morais, M.P., 2005, The housing conditions in Brazilian urban areas during the 1990s, Rio de Janeiro, IPEA, Texto para Discussão nº 1085.
- Neves, E., 2003, Case Study: Carminha Project - urban and socio-environmental rehabilitation of a watershed protection area, Rio de Janeiro, Prêmio Caixa Melhores Práticas em Gestão Local.
- Pasternak, S. and N. Baltrusis, 2003, Um Olhar sobre a Habitação de São Paulo, Projeto FINEP/Habitare.
- Pavez, R., 2006, Ação pública e transformação de vínculos sociais em uma comunidade segregada, São Paulo, CEBRAP, presented in the section: “Redes, organizações civis e ação pública”.
- Preteceille, E. e L. Valladares, 2000, A desigualdade entre os pobres – favela, favelas. In Henriques, Ricardo (org.). Desigualdade e Pobreza no Brasil, Rio de Janeiro, IPEA.
- Rolnik, R., 1998, Zonas de Especial Interesse Social, São Paulo, Instituto Pólis, Desenvolvimento Urbano n. 117.
- Unesco, 1998, Diadema: Consolidating Innovative Alternatives of Municipality Management Brazil, Most Clearing House Best Practices Database.
- UN-Habitat, 2002, Urban and Environmental Rehabilitation of São Bernardo do Campo Watershed, Best Practices Database.