
Original Article

What urban design has been practiced in Western Amazonian cities – The case of Marabá

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Abstract This article presents the circumstances of the urbanization processes some Brazilian Eastern Amazonian cities have undergone, and discusses official investments to improve the urban configuration of Marabá as opportunities to settle new paradigms for urban design and assure mechanisms of urban control. It also offers explanations for the diversity these cities display as compared to other Brazilian cities with regard to their strong dependence on external economic processes and their relationship with a unique environment. A set of interventions from both the federal and state governments in Marabá is used to illustrate recent struggles between mechanisms of participatory management and traditional forces that represent the interests of the elites, which impose on our cities limitations to a more sustainable development mode.

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Introduction

Eastern Amazonian cities deserve attention owing to the unique combination of urbanization processes and socio-economic dynamics found in this region. They are mostly located in Pará State, a development frontier opened up in the 1960s, when the Federal Government, under a military dictatorship, decided to integrate the Brazilian Amazon with the other Brazilian regions. The number of cities that have been founded over this time, and the rapid transformation they have experienced, has turned this area into an unfolded live laboratory for planners, urban designers and all related professionals, and challenged the federal and state governments to envisage strategies aimed at recovering the time wasted during a period of public management blindness about this area (Figure 1).

Many studies have been commissioned by the Ministry for Cities and National Integration, in which the cities are considered an important element for regional development, especially with regard to the distribution of population and services over the national territory (Bitoun *et al.*, 2005). Scholars have also presented evidence and

contributions related to the Amazon urbanization processes (Becker, 1999, 2001, 2004), and on conflicts between local and external agents against the globalization background (Acserald, 2002; Vainer, 2003). However, no expressive contributions are currently available to discuss the creation and regulation of built spaces in cities in such contexts, and to employ the available knowledge from the architecture, planning and urban design fields in order to speed up the necessary socio-spatial consolidation of these urban areas.

The Context of Amazonian City Development

The Amazonian dependence on river accessibility has historically conditioned the region's occupation patterns, and has created a clever combination of population concentration and dispersion. The largest cities had their importance boosted by their centrality. In addition, they have often played the role of important marketplaces. Until the mid-1900s, there were just a few cities in the region. These were strategically located at ports of

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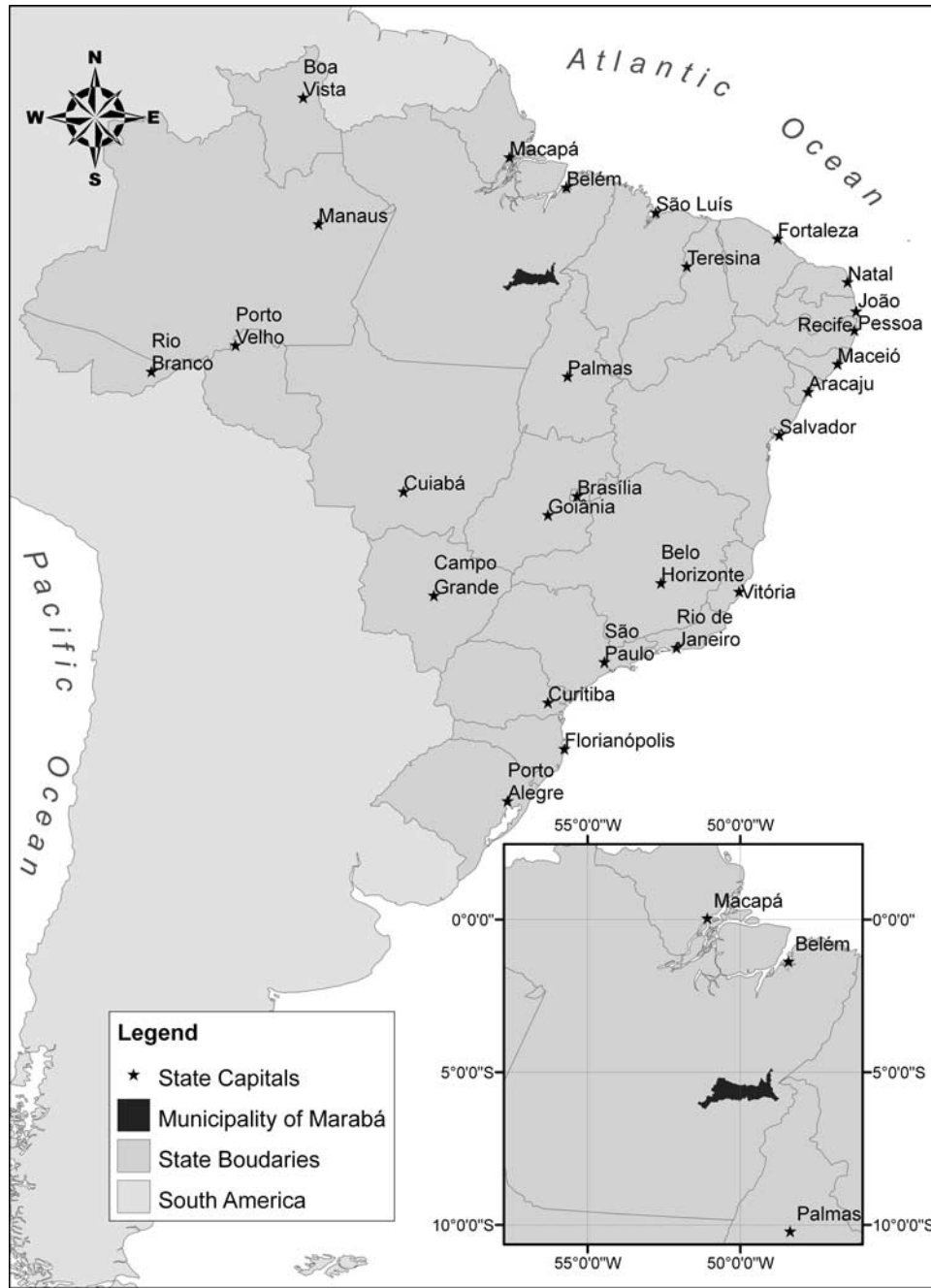


Figure 1: Brazilian Legal Amazon, states and state capital cities. Location of Marabá Municipality, taken as case study for this article. Elaboration: Anderson Carmo.

wide and long rivers, which used to define the pattern of population concentration in the region. Conversely, there also used to be smaller cities, villages and small localities scattered along rivers, which defined the pattern of population dispersion in the same region. Land was abundant then, and land tenure was not a concern at all. Moreover, the urban network was clear, and very

hierarchical (Corrêa, 1987; Cardoso and Lima, 2006).

However, along with the opening of federal and state roads, new communities were created and many new cities were formed, fostered by rural settlements, building sites, mining activities and exploitation of other natural resources. The urban network was redefined, and the traditional cities,

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which were reinforced by the arrival of roads to their ports, became important regional centres, while the newly born cities had their future dependent of local economic dynamics (Cardoso and Lima, 2006).

Up until the 1988 Constitution, urban and rural universes were administratively conceived of as different from each other, despite the federative nature of the country and the existence of municipalities as its smallest political administrative units. In the most populated Brazilian regions, this would not be a source of concern once the urban areas of the big cities completely corresponded with the territory of the whole municipality. The largest Brazilian cities, located on the Atlantic coast (for example Rio de Janeiro, Salvador, Recife and so on), sprang from the colonial ports they used to be. Their development was related to specific economic cycles. Other equally large cities are located at important road intersections (for example São Paulo and Belo Horizonte).

These cities were privileged loci of industrialization and had experienced growth at higher rates than ordinary cities, with a concentration of around 33.73 of the Brazilian population in their metropolitan areas (Motta, 2004). According to Campos (2002), as authorities had no means to control such growth, the local elites adopted a practice of commissioning professionals which had taken part in well succeed worldly experiences to develop master plans for selected areas, usually the city centres (for example plans of alignments, renovation plans). Conversely, the state-funded housing units that were built in peripheral areas through disconnected development plans subdivided the cities into well-integrated city centres and fragmented peripheries. This pattern was aggravated by the occupation of existing gaps within city centres and peripheries by means of land invasions and squatter settlements, owing to the insufficiency and inadequacy of social housing alternatives (Maricato *et al*, 2000). Conspicuous levels of socio-spatial segregation have made the discussion on access to land a priority for landform control. In the Amazon, other figures have prevailed. The extension of the Amazonian municipalities is still superlative, despite the increase in political administrative subdivisions throughout the 1970s and 1980s that followed the opening of new federal roads, and the establishment of sub-regions.

The 1988 Constitution has given political and administrative autonomy to local governments,

imposing the responsibility of managing the relationship between urban and rural territories on the municipalities. In the Amazon, the challenge was to handle different occupational processes initiated beforehand, when new social agents were introduced in rural and wild areas, sometimes ghettoized in urban enclaves, such as company towns, or on prosperous farms (Monteiro and Coelho, 2004). Globalization was first introduced in the Amazon through rural areas, as the region was rich in mineral resources and had very good potential for hydroelectricity generation. Therefore, islands of development were created that were related to electricity generation and to mineral exploitation. Meanwhile, the reverse side of this wealthy movement was slowly directed to both the traditional and the newly born cities, which have ever since received poor migrants in search of job positions and opportunities, following typical developing country processes (Gilbert and Gugler, 2000; Davis, 2006).

Over the decades, cities have not been a subject of interest of researchers and policies in the Amazon, as urban problems have been surmounted by conflicts and challenges found in rural areas, and common-sense knowledge has been successful in handling slow growth and environmental issues (Mendes, 1974). After the introduction of new social agents in the Amazon, new economic dynamics were created reinforcing the connection between local elites and rural activities. The rural wealthy elites have historically had limited interest in cities with low aggregation of investments, manifest in the transfer of profits to a regional pole rather than to the nearest city, although small cities are necessary to house workers and to provide basic services (Cardoso *et al*, 2007).

In this sense, while cities were growing and spreading in the Amazon, Brazilian authorities and scholars were concerned about metropolises. The movement for urban reform was a struggle faced by the Southern Brazilian cities – owing to scarcity of infrastructured land to house low-income groups – while agrarian reform was an ongoing process in the Amazon and its cities were still under formation, with no clear boundary between urban and rural realms. The urban reform movement addressed inequalities of access to urban land, and the right to the city and to its facilities (services, housing, job opportunities). It reached its turning point with the creation of the Ministry for Cities, in 2002. Equally important

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for the reform was the passing of Federal Law 10257/2001, known as the City Statute Law, which required all Brazilian municipalities with a population of over 20 000 inhabitants to develop their municipal participatory *Planos Diretores* by 2006. The law also reached the cities with smaller populations but that were under influence of economic projects, such as tourist areas or areas under the influence of electricity generation, or mining, for example (Cardoso and Queiroz, 2003).

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The requirements of the City Statute Law reached the Amazonian municipalities and, in some cases, provided the first opportunity to local inhabitants, authorities and researchers to understand their own urban contexts. However, as there are other concerns in the region – concerns related to land extension, presence of water, dispersion of human settlements, and environmental and social impacts of productive activities – the enforcement mechanisms of the City Statute Law were not sufficient to control land use and territory occupation. Other federal laws, such as the Forestry Code (4771/65), Waters Law (9433/97), National System of Conservation Units (9985/00) and Sanitation Law (11445/07), have to be consulted in order to guarantee a holistic approach to the profiles of the territories of the municipalities.

Before the City Statute Law, the Federal Law for Urban Land Development (6766/1979) was the main instrument to regulate the use of urban areas in Brazil, although it had been overlooked quite often. The Forestry Code was another important regulation instrument because it established the extension of the federal government domain along riversides – called permanent preservation areas (APPs) – according to river width. The Amazonian rivers might be kilometres wide and the APPs might comprise whole traditional cities. The APPs establishment criterion proved to be unrealistic for the Amazonian standards. A Federal Decree (311/38) established that cities are the seats of a municipality. According to Meirelles (1998), the urban territory is established through the donation of a league of land by either the state or the federal government. The donated area corresponds to where the urban settlement is built (usually a pre-existing village). This parcel of land becomes part of the city's patrimony, and might be increased through later annexation of public land, as prescribed by 6766/69 Regulation.

Over time, cities following this typical pattern of expansion could not complete their processes of land tenure regularization because this had

never been an issue of concern to the historic cities, which are built on river margins that belong to the Federal government. Other factors that explain the situation include slow bureaucracy and difficulties met by new cities, especially those boasting road accessibility. This has been so despite the fact that land regularization is a condition that the cities have to attend to in order to acquire the right to federal investments for housing and public equipment funding. In such a context, population increase was not followed by sufficient and adequate public policies related to housing and sanitation. Therefore, spontaneous settlements on invaded land and the provision of clandestine development promoted by land-owners became natural answers to urban expansion. This expansion is characterized by the lack of infrastructure, and by a negligence of environmental issues (for example disregard to land shape, soil vulnerability to erosion, river vulnerability to silting up resulting from deforestation of its margins). As scarcity of material provision and poor environmental facilities prevail, land prices in small cities of the region are unrealistic and follow speculative rationales based on levels of scarcity rather than on the availability and reliability of services and facilities (FVPP/UFGA, 2005; MPEG/UFGA, 2005; UFGA/FUNPEA/ELN, 2006; UFGA/PMM, 2006).

Despite the fact that most of the mechanisms of the City Statute Law are aimed at land tenure regularization and prevention of exorbitant profits from urban land transactions, they cannot be easily applied in such circumstances. In addition, design guidance usually does not go far beyond the establishment of a regular grid, following *Leys de Índias* tradition in central areas, and the action of topographers in peripheral land development areas. Flood plains, though they belong to the APPs, have also been occupied, usually in a spontaneous and informal manner (FVPP/UFGA, 2005; MPEG/UFGA, 2005; UFGA/FUNPEA/ELN, 2006; UFGA/PMM, 2006).

In small Amazonian cities, their built form is usually a collective product, and no specific laws are directed at regulating the urban form at the municipal level. Certain interventions depend on financial resource availability, usually transferred from either the state or the federal government, and are not articulated to a global approach to the city. Official settlements have been built since the 1970s and are heirs of the Brazilian modernist practice of building new cities (such as Belo Horizonte planned in 1984 and Goiânia and

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Brasília planned in 1934) (Kohlsdorf, 1985). Their built form is easily distinguished from those of other cities owing to attributes such as grid scale and dimension or plot parcelling. The campaign for *Planos Diretores Participativos* has reached 30.2 per cent of the Brazilian municipalities, and 59.5 per cent of the municipalities in Pará State, which is the most populated state in the Brazilian Amazon, and from where evidence had been collected in order to provide data for scholars to write about the Western Amazonian cities (MinCidades/CONFEA, 2007). From the Pará State urban universe, one city was chosen to illustrate most of the processes described here, because of its hybrid formation process and its relative location: Marabá. Marabá was born as a riverine village and has become a regional pole over time. It has a privileged location and is surrounded by rich natural resources. The city's economical dynamic is unique, and sensible discussions on how urban design has been conducted there have been held.

The City of Marabá and its Evolvement Context

Marabá was founded in 1912 based on its river accessibility. However, it has had a peculiar trajectory as a result of its distinguishing features such as facilities in communicating with neighbouring states, the municipality's high concentration of precious gems and minerals, especially iron, and the fact that two important roads cross the city, in addition to the existence of a railroad at its borders.

Marabá's original nucleus was built during the nineteenth century as a support locality for *caucho* (a kind of rubber) exploitation. It was an attractive centre for traders, who later requested its emancipation from Baião and its transference from Pará to Goiás State. As a reply to the request, Pará created a new municipality that had Marabá as the seat of one of its districts. The original site was vulnerable to floods. Nevertheless, it was consolidated with the creation of the municipality of Marabá in 1914 owing to the high concentration of *caucho* trees in that area, and the facility of trade of products through the waters of the Tocantins and Itacaiúnas rivers (Velho, 1972). The status of municipality demanded representatives for executive and legislative powers, giving political recognition to local economic elites, and straight access to federal and state funding and tax quotas.

When the rubber economic cycle came to an end, the Brazil nut tree cycle took over, benefiting from the existing infrastructure and again directed at the external market. These two economic cycles employed similar production strategies. The leader was the owner of the production means and provided the workers with transportation, accommodation, food and so on as they entered the forest for both rubber and Brazil nuts. This strategy was also used in commercial activities, which created a production chain in the region. Commercial traders in Marabá funded extractive activities and were funded by the richest traders from the state capital. Within this production system, most of the wealth created was invested in the state capital, some investments were made in Marabá, and nothing was used to finance improvements in the areas in which the workers dwelled. The Brazil-nut economic cycle was followed by cycles of mineral exploitation. The first of these was the diamond and gem exploitation cycle, which was followed by other non-metallic mineral exploitation cycles. However, mineral exploitation had its peak with the exploitation of metal, especially with the discovery of gold, iron and copper mines in the region. The mineral exploitation, fostered by globalization interests, has perpetuated the culture of social and environmental exploitation and reinforced the already existing migration waves towards Marabá, which has aggravated the already poor living standards in the city, villages and small localities scattered all over that region (UFPA/PMM, 2006).

Cattle raising used to be a secondary economic activity in the region, which at first was aimed at providing food for the workers involved in the previously cited economic cycles. It only became an economic activity in its own right after 1954, when specific funding was allocated to promote this farming activity in the region. This happened when commercial activities were declining, and Brazil nut traders started to deforest land to raise cattle, and to claim large portions of rural land as their property. The opening up of Belém-Brasília, a federal road, and the availability of financing from banks, promoted the independence of the local traders from Belém, the capital city of Pará, which reinforced the local elites (Velho, 1972). This economic trajectory was followed by a frantic territorial reorganization, with a set of political and administrative subdivisions, and creation of new municipalities. At the beginning of the 1980s, Marabá had 373.373 km²

of extension. By the end of the 1990s, however, it had 15.000 km².

Q11 After so many subdivisions and the arrival of new inhabitants, the city of Marabá became disconnected from its municipal rural area. Its rural population has been scattered in official rural settlements, mining sites and timber exploitation-based villages, and has always been poorly assisted by the local government. Over the last few decades, the city has concentrated most of the municipality population (80 per cent) and most of the available financial resources as well (UFPA/PMM, 2006). This situation provokes social tension in the rural area, which turns into campaigns for more subdivisions, as if the creation of new municipalities would magically provide the poor existing villages with infrastructure and economic viability, and turn them into cities, as prescribed by the Brazilian legislation. For further information on the figures of Marabá's population, refer to Figure 2.

Q12 During the 1960s, the city of Marabá came to the attention of the federal government because of its impressive population growth. The region was considered strategic by the Army because a guerrilla war was going on along the Araguaia River. This fact justified the establishment of Army headquarters on the city's outskirts, the provision of more services and the moving of middle-class population groups into the city. This new middle-class population held no rural activities in the region.

Q13 In 1968, a flood occurred that raised the discussion of transferring Old Marabá to higher land, contributing to the selection of Marabá city as the subject of study for the Rondon Project and

the Federal Service of Housing and Urbanism – SERFHAU. By this time it was already understood that the city had a remarkable geographic location to work as a regional pole, thanks to river and road accessibility, but its land shape was extremely vulnerable to floods, pressuring public and private sectors to reinvest money in mitigating flood effects on a regular basis. The partnership between the Rondon Project and SERFHAU has produced reports on Marabá city's socio-economic conditions, based on fieldwork carried out by undergraduates from Southeast universities. These products were associated with the conceptions of 'Rural Urbanism' devised by Brazilian Settlement and Agrarian Reform Institute – INCRA, the latter compromised with the hierarchical organization of cities, villages and localities according to agrarian development axis, completely dissociated from municipal boundaries, financial and human resources actually available to put plans into action. Marabá city was the starting point for the colonization of land along Transamazônica Road into Pará state, towards Altamira city. These actions were related to a broader action, the Program of National Integration (PNI), created in 1970, which funded the first master plan for Marabá city (Tourinho, 1991).

Marabá's Experiences of 'URBAN DESIGN'

The PNI was detailed through regional plans. The Brazilian Amazon was the subject of two Development Plans (PDAs) proposed to the Amazon Regional Superintendent of Development (SUDAM), with clear financial and physical goals to be met over that decade. In 1976, as part of the second PDA, a report entitled Urban Development Policy of Amazon was published by H.J. Cole Associates. This report classified existing urban nuclei according to development stage to assess the urban network, pointing out super poles and potential poles, such as Marabá, that should be reinforced, in order to assimilate migratory waves; extensive occupation and natural drainage-friendly solutions were given as main guidelines to urbanization and urban consolidation (SUDAM and Cole *et al*, 1976).

Meanwhile, SERFHAU had called a public bid for preliminary proposals to New Marabá city master plan, after a struggle among landowners and local government to define which area would be suitable for urban expansion. Joaquim Guedes

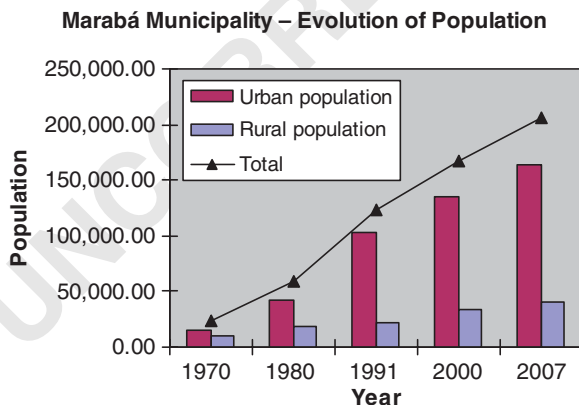
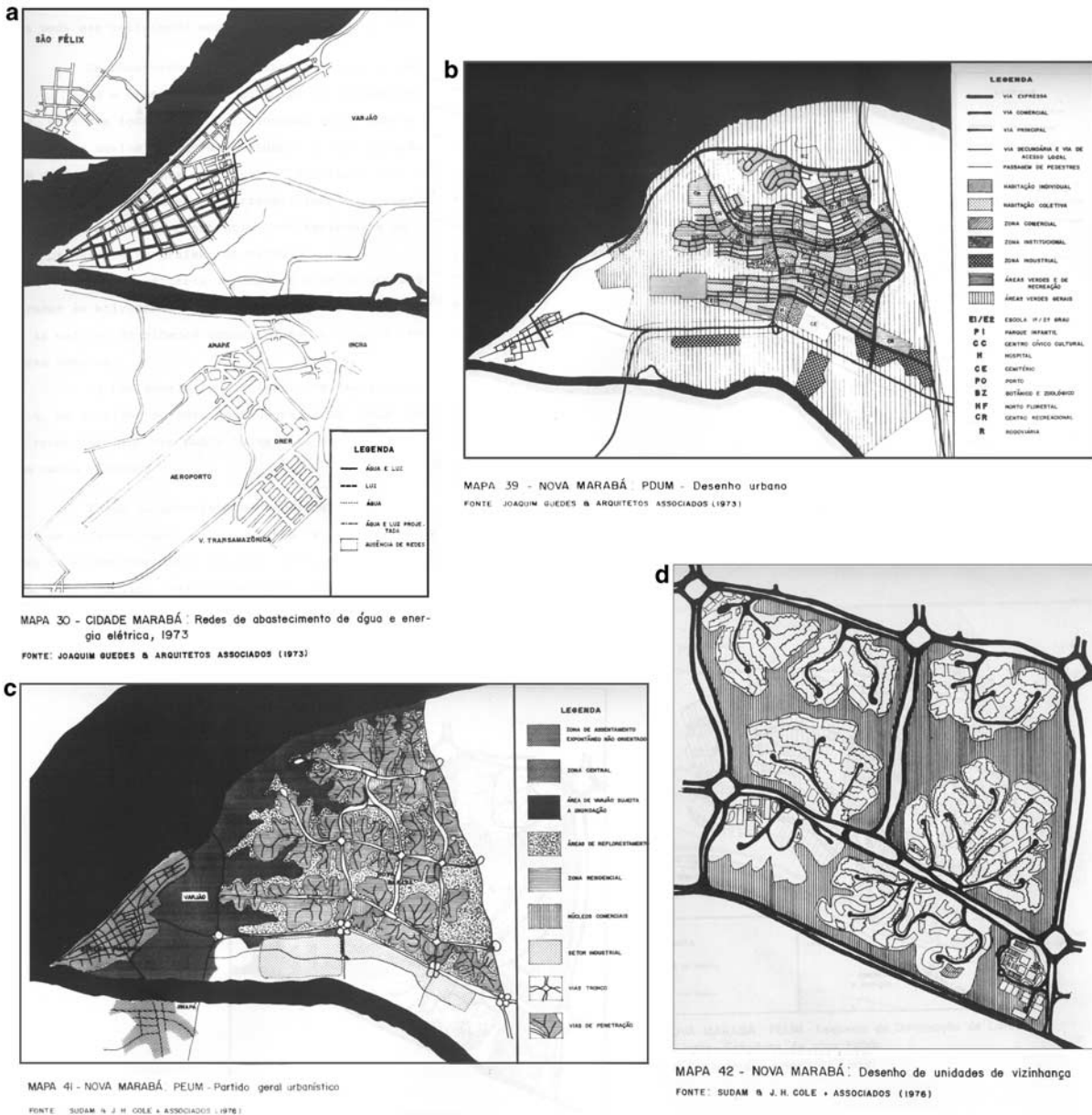


Figure 2: Evolution of Marabá's rural, urban and total population growth over the last few decades. Sources: IBGE (1980, 1991, 2000, 2006).



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Figure 3: (a) Marabá City in 1973; (b) Master plan of New Marabá by Joaquim Guedes and Associated Architects (1973); (c) Expansion Plan of Marabá City by SUDAM and Cole *et al* (1976); (d) Neighbourhood unit (1976).
 Sources: Joaquim Guedes and Associated Architects (1973); SUDAM and Cole *et al* (1976).

and Associated Architects were the winners; they commissioned a multidisciplinary team aiming to study the existing city and regional context, to define alternatives and to choose the site for the new city, to define guidelines for urban occupation and land use, to estimate population growth and distribution, and finally to conceive the master plan (refer to Figure 3) (Tourinho, 1991).

This first proposal was based on street hierarchy and definition of neighbourhood units.

Blocks were disposed linearly, with low and high densities disposed one after another in a row. Despite the previous concern about the vulnerability to flood, neither the replacement of the Old Marabá population nor the cultural background of the traditional inhabitants was a strong priority; the actual aim was to enlarge the city to absorb estimated migratory waves. The scale of change and the disconnection with the rhythm of everyday life have contributed to delays in plan

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implementation. When the idea of building a new city was sounding like no more than an official speech, Old Marabá city faced the most severe flood of its history, in the mid-1970s, with 80 per cent of its buildings covered by water.

Q18 Because of this flood, the federal government revisited the idea of replacing the city, delegating the task to SUDAM. The Superintendent's first action was to refuse the master plan already produced, and to commission a new one, by H.J. Cole Associates, the same practice in charge of defining urban policies to the region, under suspicious circumstances. The new nucleus was called New Marabá, and was built following a modernist urban plan, composed of cells, corresponding to neighbourhood units, again with very diverse spatial characteristics as compared to those prevailing in the old city (refer to Figure 3). This official action was carried out in a great hurry, justified by the need to house the victims of the flood. Reports and drawings were presented long after the building works had begun, revealing amateurism and naiveté with regard to production of urban space, but benefiting land-owners, who were compensated, as well as building industry entrepreneurs.

Q19 Building a new city involved meeting all guidelines brought about by regional studies, economic aims and provision of infrastructure logistics (for example roads, dams, mineral exploitation fronts), and quantitative and functionalist approaches, rather than building proper urban spaces – either by valuing qualities such as vitality, robustness and identity, or understanding public and private spaces as instances of individual and collective investment, with different degrees of resistance to change (Bentley *et al*, 1985; Brand, 1994; Lynch, 1999). There was a deterministic spatial approach, assuming that physical proposals would be followed by pre-established social patterns, which were not negotiated simultaneously with plans design, and even worse, could be defined by the city mayor through decrees (Tourinho, 1991). Note that the mixing of migrants from all over the country with immediate economic interests was incompatible with any social behaviour enforcement, or with the middle-class social paradigm of modernism, and would either remind us the any frontier occupation experience, such as of American Far West. The importance given to centrality at the regional level was not applied to the urban level, to the extent that urban expansion was expected to occur organically, through the addition of new

neighbourhood units, rather than following a city global structure. In 1981, SUDAM handed the responsibility of finishing the city building to the municipality of Marabá. From that moment on, the area was spontaneously occupied, which made it miss its initial technical specificities.

Q23 Unfortunately, this experience has not been locally assimilated as a turning point in urban control and regulation paradigms. To date, the only instrument that regulates city built form is a building work code that transfers the guidance to urban occupation from local regulation level to land parcelling federal regulation (PMM, 1987). As the spatial standards and area percentages for equipment and public spaces were considered overestimated, peripheries were formed around the Old Center and New Marabá through informal occupation. The land shape is a strong limit to continuous occupation. Flood plains split the two areas, and tend to be occupied by the socio-economically excluded population. This population comprises migrants from the countryside and from other states who cannot get a formal job and pay for land with infrastructure facilities. The problem that had justified federal investments in the city – the flood – has not been solved. Instead, it has increased in proportion and reached the adjacencies of both the old and the new nuclei. However, the city is crossed by the most important roads of Pará State, PA 150 – North/South axis, and BR 230 – East/West axis, and is bordered to the east by a railroad. In addition, there are bridges over the two rivers that cross it. Therefore, it has the possibility of spreading to the opposite margins. On the banks of the Itacaiúnas River there used to be a rural settlement that was quickly replaced by an urban occupation group, which generated a third urban nucleus in the municipality. The pivots for this third nucleus were the airport and the official state house. This third nucleus is called New City, and was formed through the amalgamation of the official house state and several private development areas. It was also surrounded by plains vulnerable to floods. Over time, a periphery has evolved around it (UFPA/PMM, 2006). For further information on the geography of the area, refer to Figures 4 and 5 and Table 1.

Q24 The absence of clear rules to guide city growth and built form leaves the agents involved in these processes with patterns that are rather too loose to observe. Elites can promote changes according to external references considered positive by real estate businesses, whereas the poorest groups can

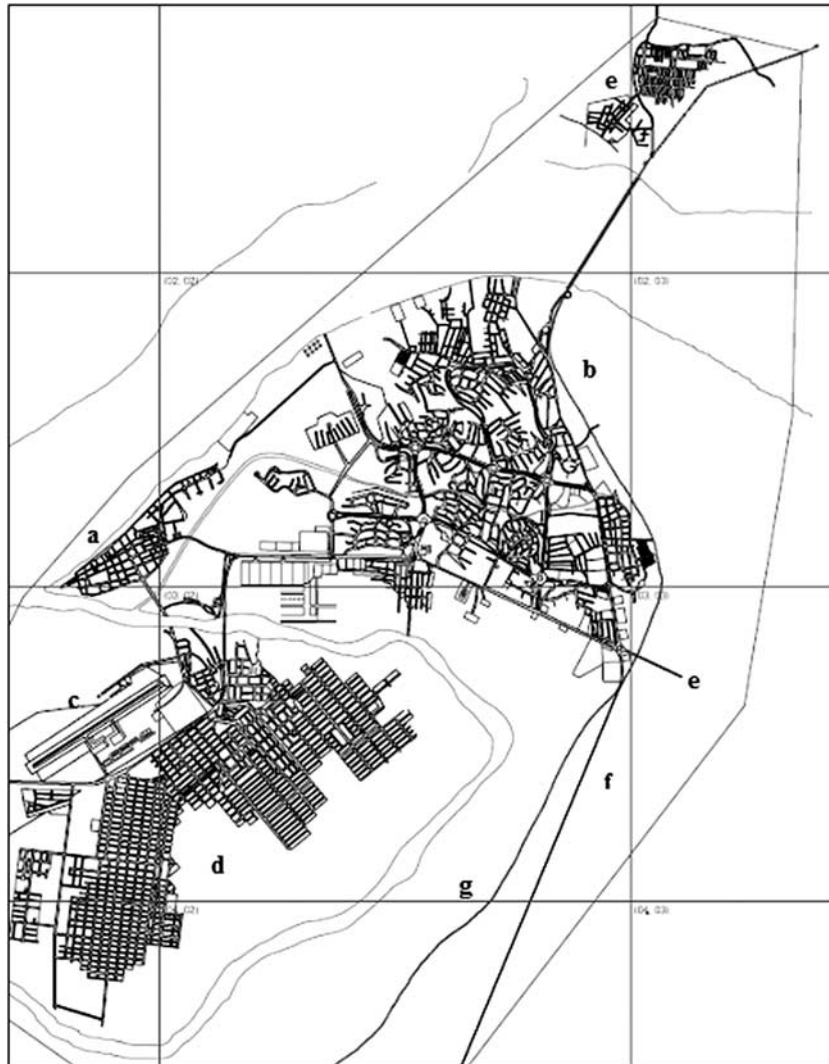


Figure 4: Marabá City. Key to read the map: (a) Old Marabá; (b) New Marabá; (c) Airport; (d) New City; (e) BR 230; (f) PA 150; (g) Carajás Rayway.

Sources: COHAB (1996); UFPA/PMM (2006).

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produce urban land through informal occupation and avoidance of demanding legal standards and land market prices. Design seems to be more conditioned by access conditions for funding (amount of money available, deadlines to submit projects) and administrative bureaucracy than by the commitment to either conceptual paradigms (socio-spatial or environmental) or agreement among interplaying agents. For the inhabitants, the registration of the land plot they occupy in the city cadastre is the main recognition of their rights to city facilities and services and the first step towards land regularization. Once registries do not always demand the attendance of built form regulations, the city is actually shaped by

occupation dynamics rather than by any planning rationales (Pena, 2007).

There is no regular investment in either discussing spatial solutions and strategies with different agents involved in the production of built space or commissioning projects according to a holistic approach to the city. The historic lack of care for urban form control and obedience to land parcelling regulations have created a context of infrastructure scarcity and favoured expectancy of immediate profits from real estate market among the investors of all social segments. Property and the full right to land use is a dream, but tax payment is something 'to be avoided' on a daily basis on the inhabitants' part. Such

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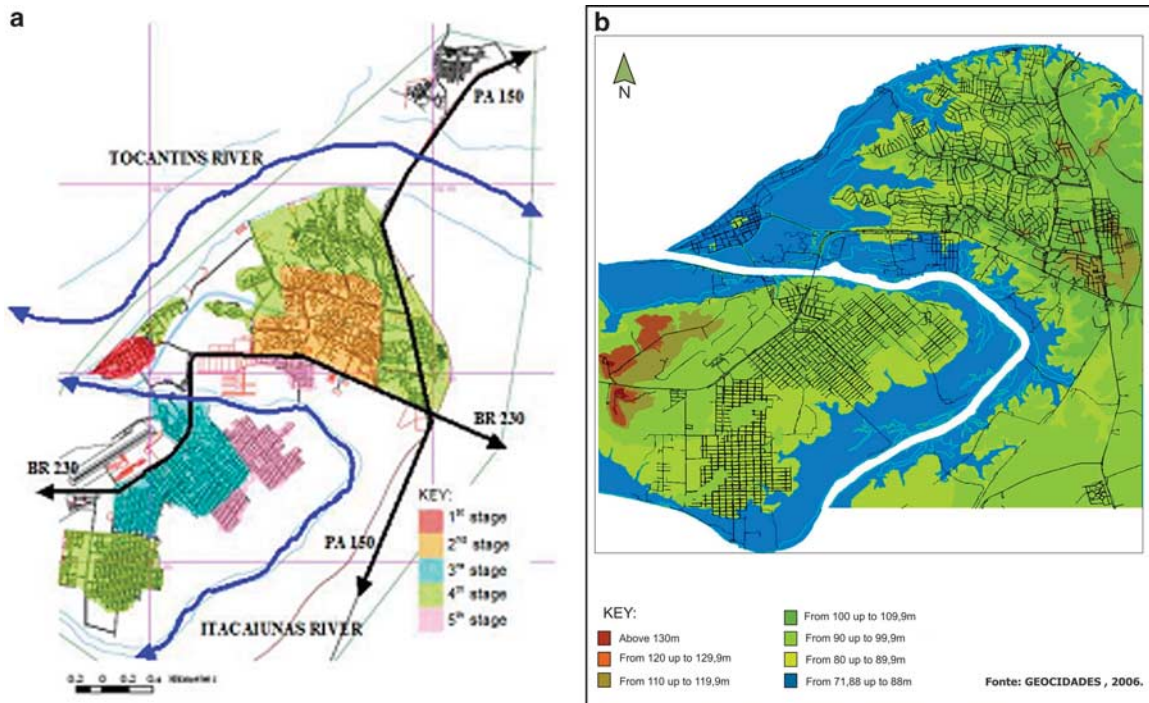


Figure 5: (a) Evolution of Marabá City; (b) Site vulnerability to floods (blue corresponds to the most vulnerable areas, and brown to safer areas).

Sources: ONU/MMA/PMM (2006); UFPA/PMM (2006).

behaviour limits local government tax collection, and, therefore, the money to fund service improvements and investments on social housing and infrastructure provision. In this sense, whenever access to external investments is made available, adopting well-succeeded alien 'formulas' seems to be faster and more effective than the designing of ground-based solutions (FVPP/UFPA, 2005; MPEG/UFPA, 2005; UFPA/FUNPEA/ELN, 2006; UFPA/PMM, 2006).

Instances of such a situation are the improvements made on the river frontage, as the project has not taken the traditional usage of riverfronts (fishing ramps, popular leisure activities, dish-washing, laundry, boat yards and so on) into account. Rather, it was inspired by the American experience of waterfront revitalizations, which had been reproduced in Belém, the state capital city (Goodfrey, 2007). Therefore, promenades and restaurants, based on middle- and upper-class perspectives of water enjoyment, have replaced traditional activities that used to take place in that area. This approach can be observed through the changes in the landscape seen from the river waters (the natural landscape formed by steps of soil and vegetation was replaced by a wall). Only

after protests were ramps and staircases incorporated, aiming at maintaining the relationship between popular social groups and the river (refer to Figure 6).

This river frontage improvement is part of the investments made by the Transport Ministry in order to stabilize the riverbanks. However, the project has denied the inhabitants' dependence on the river. The historic absence of global plans to regulate alignment, land occupation conditions, infrastructure provision and land use, in general, has continuously reinforced inequalities. In 2007, funding to extend river-front building works towards the poorest area of Old Marabá was approved. The area, nonetheless, was defined as an area of particular social concern in 2006 within the participatory municipal *plano diretor* of Marabá. The area was considered special because of the inexistence of sanitation facilities and the vulnerability of its inhabitants to waterborne diseases. This decision was made based on the reports of the commissions created by the City Ministry and the Environment Ministry (ONU/MMA/PMM, 2006). The diagnoses issued in these two documents have given inhabitants a global perspective of their socio-spatial circumstances

Table 1: Summary of Marabá's nuclei formation and evolvement

	<i>Old Marabá</i>	<i>New Marabá</i>	<i>New City</i>
<i>Formation stage</i>			
Agents involved	Traditional inhabitants, old elites, entrepreneurs	Federal government	Official institutions, state housing company
Characteristics	Deformed grid (1912–)	Highly hierarchical grid (1976–)	Amalgamation of regular grids (1980–)
Instruments	Popular occupation, commercial and residential areas	Modernist urban plan defining alignment and land use. Natural drainage was a design determinant.	Adaptation of rural settlements, private land development areas
<i>Previous expansion stages</i>			
Agents	Low-income social groups, private sector	Low-income social groups, private sector	Low-income social groups, land owners, private sector
Characteristics	Occupation of waterlogged areas, limitation to growth determined by inner valleys vulnerable to floods (working as fringe belts). Balanced mix of land uses.	Adaptation of original plans, occupation of areas vulnerable to floods (creeks margins) by informal settlements. Occupation of river margins by mineral exploitation activities.	Independent land developments, informal settlements. Disarticulation among development areas. Land eviction in airport adjacencies. Avoidance of expansion of private development in flooded areas.
Instruments	Building works code. Federal Land Parceling Law. Federal Decree 009/760/1946 (establishing areas under tide influence as Federal government properties). Forestry Code (defining length of Permanent Protection Areas).	Building works code. Federal Land Parceling Law.	Building works code. Federal Land Parceling Law.
<i>Present actions</i>			
Agents	Federal and local government, private sector	Private sector	Private sector, low-income social groups
Characteristics	Transformation of river frontage for leisure purposes, housing replacement through social official settlement, infrastructure provision. City main commercial area, low-income residential area.	Creation of a commercial corridor along main axis.	Consolidation of commercial centre, stratification of residential areas
Instruments	Priority Integrated Projects (Cities Ministry and State Government). River margin contention and landfill (Transport Ministry and Local Government).	Transfer of public land to private sector. Building works code. Federal Land Parceling Law.	Building works code. Federal Land Parceling Law.

and indicated conflicting interests between the social and the individual spheres of life (refer to Figures 7 and 8).

The low-income inhabitants who live close to the main commercial centre of Old Marabá benefit from this privileged location by earning their livelihood from the river and commercial and services-related jobs. The City Ministry's awareness of the impacts of riverfront extension on local inhabitants was an important factor in the allocation of federal and state funding to build social housing to relocate inhabitants who used to live along river margins reached by the project.

The funding aimed at providing sanitation facilities and land regularization in the area. The expectation is that this might offer conditions for the poorest people to stay in the area afterwards, as they earn their livelihoods from fishing, laundry, informal vending in Old Marabá's open market and streets, and from working in shops in the adjacent commercial area; they might be vulnerable to floods, and do not have access to sanitation or piped water, but they have shelter, do not need to pay for transport and have diversified opportunities to earn some money every day. Again, the funding opportunity came



Figure 6: Riverfront usage in Old Marabá: (a) improvised boat yards; (b) dishwashing; (c) ramp of access to boats and dishwashing; (d) new river front dedicated to leisure and contemplation. *Source:* Author's photos (2006, 2007).

before a master plan for Old Marabá was properly designed. Thus, the agents involved had to discuss the housing solutions in a hurry, and these were accepted because of a strong desire for improvements on the local inhabitants' part, without consideration of a mechanism to allow the maintenance of their livelihood strategies or to prevent speculative negotiation of benefited houses. Local Built Form control mechanisms are still based on the very limited Building Work Code, which has traditionally focused on minimum standards to building rooms without a more global view of the issue as far as the physical and economic dimensions of the intervention are concerned (PMM, 1987).

Final Remarks

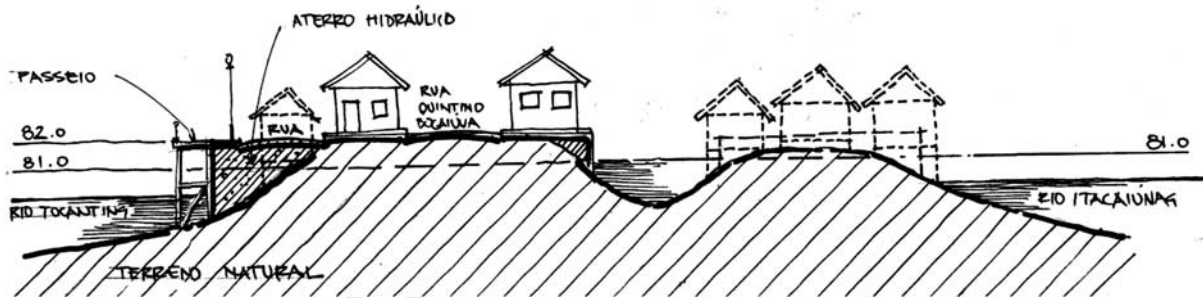
Despite the vulnerability of the riverbanks to floods, investments have been made because of the poorest people's permanent claims to stay in

the area, previous government regional interests and the present inexorability of the riverside transformation. In these cases, the agents' power to build (and rebuild) the city demonstrates that the correlation of interests is more powerful than any attempt at long-term planning or regulation.

The recognition that Marabá needs investments to improve its social housing standards on the part of the federal government has guaranteed it gradual investments. Recently, these investments were submitted to and approved by the National Fund for Social Housing, particularly aiming at tenure regularization. This has occurred without previous elaboration of the master plans for each nucleus. At the local level, private agents put pressure on local government to keep built control as it has always been, that is, not controlled at all, so that they can go on to profit from renting residential and commercial buildings. These premises usually have a high percentage of their area covered and paved. They also do not have setbacks and the number of



Q27 **Figure 7:** Detail of Old Marabá showing new road and embankment area along Tocantins River, and area of social housing investments to absorb relocated inhabitants (black outline, dark gray rectangles are two stories buildings).
 Source: SEDURB, 2007.



Q28 **Figure 8:** Vertical section of intervention area. Observe natural shape of soil, water embankment, promenades, level of new social housing (above 82.0 m).
 Source: SEDURB, 2007.

Q27 floor control, despite the poor infrastructure facilities available.

Without an agreement among agents on a common goal related to built form and land use distribution, there are no means to assure any level of sustainability. Many city hall technicians also have private practices to improve monthly income, and end up supporting private sector interests. Meanwhile, environmental problems have been aggravated once the vulnerable areas are being increasingly occupied by inhabitants who are socio-economically excluded (for example

APPs), the natural drainage solutions are endangered, and fresh water is contaminated

In addition, physical improvements are not sufficient to encourage a target population to live in a particular location. In other words, if no public schools or basic health assistance are provided to the inhabitants of these areas, if no actions are carried out to safeguard socio-cultural identity, and if no mechanisms from participatory master plans are employed to promote tenure regularization and differentiation in tax charging, the original inhabitants are not going to be able to

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stay in these areas. As a result of this process, these areas might then be easily taken over by other groups of people who have other plans for that area (for example building restaurants and hotels), despite the historic landscape and the political actions of the organized communities.

The difficulties faced by Marabá portray the struggle that inhabitants of many cities endure in Brazil. These include the aligning of the three levels of government and the private sector (which is used to operating freely and monopolizing local levels of government). One might conclude that it is not the lack of legal mechanisms that impede urban planning and participatory city management, but rather the actions of the local elites who have always benefited from the poorest people's capacity to introduce previously inadequate land into the real estate market. It is done so through the use of public funding once their actions are usually associated with amenities, such as the sun going down on a horizon defined by water.

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