

SUBURBAN SPRAWL IN THE METROPOLITAN REGION OF ROSARIO. AND SUSTAINABLE URBAN DEVELOPMENT?

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ABSTRACT. The Metropolitan Region of Rosario has historically developed according to the model of "extended city"; a model that has deepened during these last fifteen years. During that time new real estate projects emerged in most all the towns of the region. They are projects based on a simple pattern of low density (wider plots and more greenery than in the city) and on the use of the private car as mean of transportation. The widespread suburbanization in the entire region reveals the limitations of the model, moving away more and more of the purpose of a sustainable urban development.

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INTRODUCTION

A new inner population movement started in Rosario Metropolitan Area in the last decade of 20th Century that continues and deepens during this 21st Century up to now. In this region of about 1.500.000 inhabitants located on the west side of Paraná River, small towns close to Rosario (the core city of the region with one million inhabitants) have been chosen as the new place for living by Rosario's inhabitants, while they keep their jobs in the main city. New commuter communities are growing in various towns to the North, South and West metropolitan zones. The most important are those from the West which used to be a recreation place for the inhabitants of Rosario.

Pressure to urbanize the outskirts of Rosario has been very strong during the last years due to the limited availability of land for urban developments in the main cities. Large portions of the territory in the North and in the South of Rosario still remain as productive land and cannot be urbanized. The pressure is exerted mainly on that urban sector linked to regional routes and highways and with direct connection to the downtown area.

The Rosario West Side spreads towards the west in Funes and Roldán, two small towns that emerged as rural villages when railroad was built in the last decades of 19th Century. In the last two decades Funes, a traditional weekend and summer urban center of Rosario, has hosted Rosario's inhabitants who move there to live in, keeping their jobs in the main city. Therefore, Funes has grown very fast, mainly in the past three years. New neighborhoods are being built, expanding the

urbanized land in about 23 % in only three years!

New housing developments have been approved with average surface plots suitable to build only one family house with a small green area. They are sold at prices relatively low (compared to the prices of the land in the city of Rosario). Although making affordable housing for the people of Funes has been the argument to approve these projects, most of the new owners came from Rosario.

In the town of Roldán, that was not historically a recreation center as Funes was the urbanized land also expands rapidly. A town smaller than Funes, Roldán has increased its urban area in about 33 %.

This way, these two localities will see increasing not only its urbanized surface but also, and significantly, its population. Funes practically will duplicate its population and Roldán can go so far as to multiply it by three. And, this in a very brief period, which implies thinking about in what way the municipality will give services, how demands of school and health establishments will be solved, and, fundamentally, when and how the infrastructures will be built. To all this we must add that it has not been thought even to improve the public transport. For this reason, most of the interurban travels are done with private automobile.

This paper shows the effects of this widespread urban expansive model that seems to be very far from being sustainable. This is part of a research about the transformation process of Rosario Metropolitan Region during last decades.



Source: Bragos et al., 2016
 Figure 1: Rosario Metropolitan Region

LITERATURE REVIEW

Suburban sprawl is a topic which has been studied at different times and with different emphasis. We can go back to 1965 when, as stated by Salvador Rueda [1], Friedmann and Miller published a paper in the United States of America where the term “urban field” was used in a way that the sharp division between town and country was blurred so much from the physically and socio-economic point of view. Thus, the city no longer was conceived as a well-defined and visually attainable and understandable “physical artifact”, but as a complex system of locations and interconnected flows of people, information, goods and money. This means that in spatial terms, instead of a continuous urban area that grows according to the traditional "oil slick", we have now-a-days a metropolitan region strongly structured through different networks.

With the development of the economy, metropolitan regions –the portions of the territory that we can more clearly associate with this idea of “urban field”– other changes have also appeared: in their productive base (from a model based on industry or agricultural and cattle raising production to another one related with tertiary services and consumption); in their socio-cultural patterns (particularly in

the sphere of consumption); in their modes of management of urban space; in the ways to access to land and the appropriation of urban rents; and finally, changes in social structure and income distribution. All these changes result in a radical transformation of the landscape; and this situation are reflected in the aims of recent researches.

One line of research was guided towards the description and explanation of the configuration of new city models based on the concept of the diffused city. F. Indovina [2] attempts to describe and explain the process of formation of a city model not based on concentration but at low density. It is not a simple extension of suburbanization, but a transition to a new form of city. Indovina does not interpret the sprawling city as a result of the "spread", the "sprawl" or the "dissolution" of the compact city, but as a double process of densification of the city and, to a greater extent, the densification of the rural area ("*della campagna alla città diffusa*").

By other side, the idea of sustainability, sustainable development in particular, appears with the "Brundtland Report" prepared in 1987 for the World Commission on Environment and Development. This report argues that humanity holds in its hands making development

sustainable, i.e., ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. Of course, the concept of sustainable development implies limits. They are not accurate limits, but we know that technological development and social organization have their effects on environmental resources, and, by the other hand, the environment has a limited capacity to absorb the effects of human activities. Therefore, Ramon Folch [3] states that the concept of sustainability is not a value in itself; it is aimed at overcoming the dysfunctions of the current economic model, not only environmental questions. Thereafter, rethinking cities in terms of sustainability requires new definitions, considering that sustainability is not a dogma, it is not a theoretical, not a magic formula.

Salvador Rueda associates the concept of diffuse city with sustainability. For the author, the sprawling city sits on a false pillar, or in other words, an unsustainable pillar. The diffuse city is possible thanks to rising costs of resources and time and it is reasonable to think that this model will fail at the precise moment that some of the resources express their limitation. The idea of diffuse city resulting in the massive use of motorized means of transport has already failed: "the mobility network saturates and attempts to release congestion with more kilometers of network, lead to increased congestion and variables that are related: the diffuse city necessarily increases the emission of gases into the atmosphere, the surface is exposed to unacceptable noise, the number of accidents increases, the number of working hours lost, the failure of peripheral rural and natural systems [4]. In the same way, but from another point of view, Leon Krier [5] stated that "protest against the erosion of natural resources or the destruction of the cities and the countryside does not lead anywhere if you do not have a global alternative of urban reconstruction. Criticism without project is just another face of a fragmented society and an atomized city. Only a global project of ecological reconstruction can redefine the role of architecture and planning recovering its authority".

The emerging of metropolitan areas and, as a consequence of this, the "fading" of the concept of traditional city has also been studied by Oriol Nel·lo [6]. He has identified distinct phases in this process: first, the growth of the city as oil slick; then from suburbanization to periurbanization and last

from periurbanization to rurbanization. Monclús [7], in his work on urban sprawl continues with this argument stating that the most critical visions of the urbanization process, focusing on economic, social and ecological costs of the "new suburbanization".

The more contemporary works are those that aim to interpret the territorial transformations from analyzing the behavior of financial and real estate capital. In this regard, Ciccolella [8] and Vecslir [9] analyze the changes in the capitalist system, registered since the early seventies (new technological-productive paradigms, hegemony of neoliberal policies, globalization processes) and its impact on social and physical transformations of large urban areas, noting that these changes have, in turn, new tensions in such territories. These tensions point mainly to the difficulties of local governments to understand and metabolize recent metropolitan transformations and develop effective ways of city management.

METHODOLOGY

The study was not based on an experimental design, but corresponds to an approximation of the type "case study" where the objects of study consist of a number of locations in the metropolitan area of Rosario. In that territory certain aspects related to the development of new real estate projects, infrastructural and service demands that come with rapid urbanization and territorial policies (provincial and municipal ones) were studied.

For this purpose, in the localities selected as "case studies" four items were analyzed:

- transformation processes and trends (physical - functional and socio-demographic);
- urban management (land use planning, public transport);
- effects of the extended city (low densities, increasing education, health and transportation demands, energy waste); and
- alternatives to the extended model city.

The aim of the study was to show that fast urbanization recorded in locations of Greater Rosario is the result of an unsatisfied demand for land and housing for residents of the city of Rosario which found a response to their demands in the small localities of Rosario Metropolitan Region.

RESULTS AND DISCUSSIONS

Recent suburbanization in Rosario Metropolitan Region

Rosario and the towns of its metropolitan region have historically developed according to the model of "extended city"; a model that has been particularly deepened in the last fifteen years from the emergence of new real estate developments in most of the different localities that belong to that region. Until last decades, there were few locations in the metropolitan region where their urban areas started to grow (to extend) while new developments emerged, most of them to give place for the second house in weekend neighborhoods. The first towns to register these changes were those closer to the main city, except the towns with an industrial profile. Three main moments can be distinguished in the urban expansion of Rosario Metropolitan Area, each one with its own features (in projects, procedures and marketing).

The first "wave" of urban expansion in Rosario Metropolitan Region focused on three small towns: Funes, Roldán and Pueblo Esther. This first expansion of urban areas at the end of the sixties in Funes reinforced its role as a weekend and summer resort for the population of Rosario. This trend continued during the seventies in Roldán and Pueblo Esther. The main features of this sixties and seventies urban sprawl were:

- *Projects:* lotissements without infrastructures (only electricity and water supply) and urban services, except a square as public space usually located in the border with the rural area.
- *Procedures:* these real estate projects were approved directly by the provincial land registry offices, most of the times without the knowledge of local authorities
- *Marketing:* accessible financing for the purchase of lots was the main attraction of this real estate projects.

There was a second moment or wave of this suburban expansion during the nineties. It took place in these same towns but with different features:

- *Projects:* the new suburban areas were gated communities with their own infrastructures and sports and recreation facilities.
- *Procedures:* the projects were approved by local authorities according to municipal by-laws; some of these by-laws appeared in order to facilitate these estate investments.
- *Marketing:* greenery and safety places were the main attractions of the offer of these new gated neighborhoods.

In the first moment the target of new real estates was mainly the population of medium incomes. In the second moment, the target was the population of medium – high and high incomes and investors.

By the end of the century there was a great bankruptcy in the national economy of Argentina. All items of activities and almost all social sectors were affected by this large economic crisis. Construction and real estate were paralyzed and there was no project to develop during these critical years.

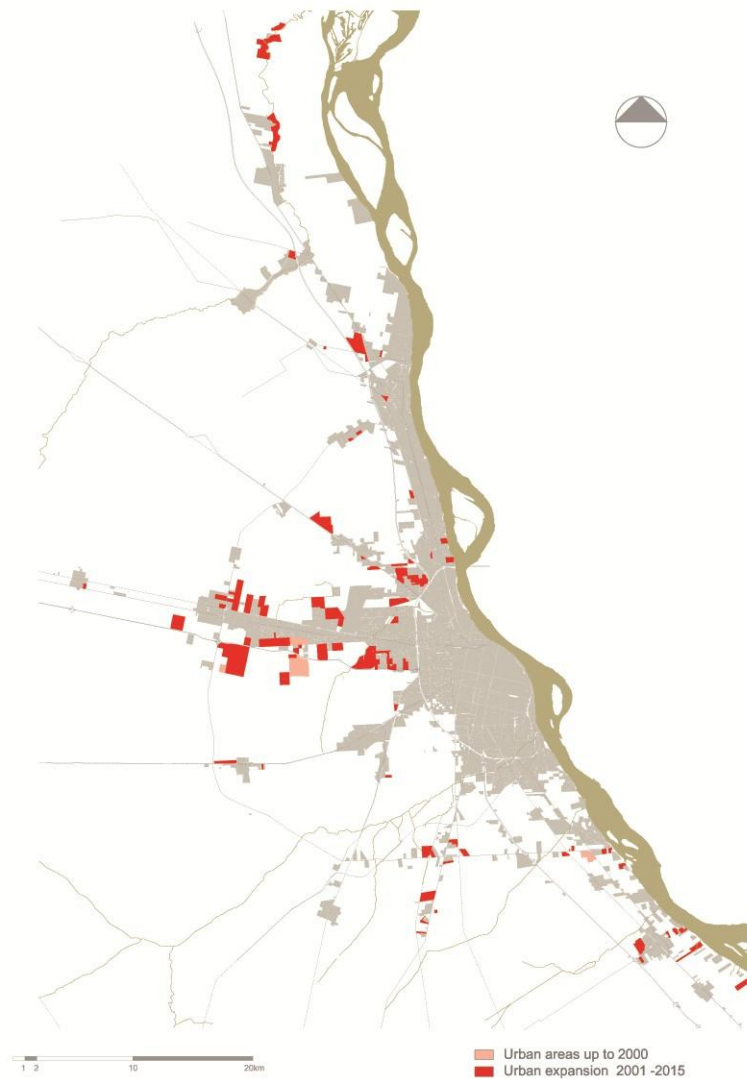
A rapid recovery of the economy with "Chinese growth rates" began in 2003 and with it a new chance for real estate development. The surplus capital from rural activities started to be invested in urban activities (new buildings, new urban land, and new estates). Distrust in the banking system at that time was such that the only possibility of investment and savings was the real estate sector. This was the reason why real estate became a financial active. On the other hand, family savings demanded to keep their value, and real estate offered safe and fast valorization. So, new buildings were built in the central area, new condominiums were developed in the old port area; and new neighborhoods (closed and "open") were appearing in the vicinity of Rosario.

Road connections in the metropolitan region got a great improvement with the construction of Rosario - Córdoba Highway, to the west, and the Rosario - Victoria Bridge, to the east (2003). The first of these main roads guided the location of most of the suburban developments. And thus the third wave of urban expansion began. A new period that has its own features that differentiate it from the previous two:

- *Projects:* new expansions are both closed communities and ordinary open neighborhoods with certain sports and recreation facilities. authorities create new
- *Procedures:* local au regulations for these new suburban areas, some of them with innovations in urban planning and also informal land value capture.
- *Marketing:* places in new neighborhoods were sold with accessible financing.

Other features of this third period distinguish it even more from the previous ones:

- *Sites of urban expansion:* this time, all towns in the metropolitan region expands their own urban areas.
- *Urban policies:* land regulation in Rosario is stricter while they are more labile in the other towns of the metropolitan region. This explains that the land demand of Rosario's inhabitants is solved in the towns of the metropolitan regions, where real estate can develop easier.



Source: Bragos et al., 2016

Figure 1: Rosario Metropolitan Region. Urban expansion in the 21st Century

In this third stage of the urban expansion process it is verified that the western towns continue as the preferred site for the development of new real estate projects. As

shown in the following table, the West area of Rosario Metropolitan Region concentrates 4/5 of the surface of the new real estates developed during the last fifteen years.

Table 1: location trends of new urban / suburban areas in Rosario Metropolitan Region. Period 2000/2015

Location	surface of urban expansion (hectares)	percentage
North área	341	13 %
West area	2,060	77 %
Southwest area	40	1 %
South area	235	9 %
Total	2,676	100 %

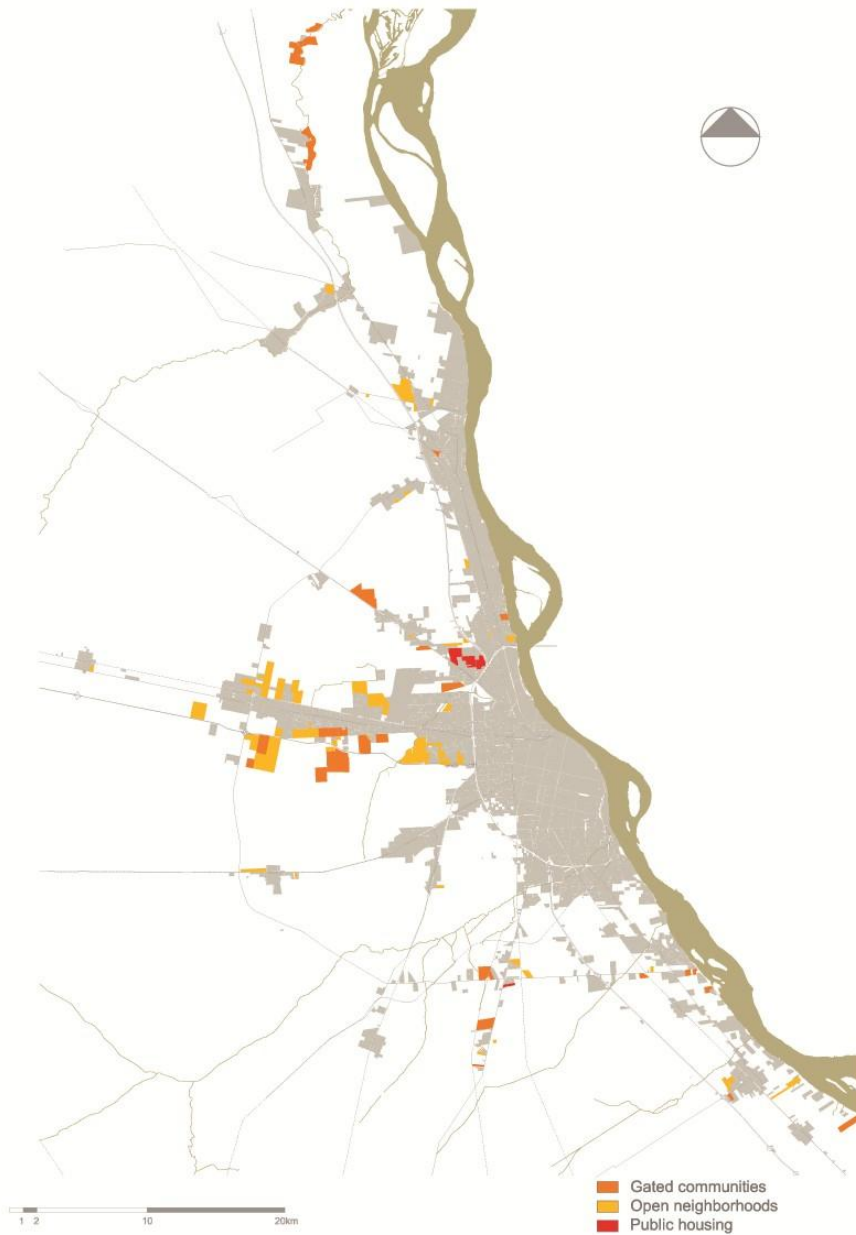
Source: Bragos et al., 2016.

The third stage of the expansion process of urbanized areas in the metropolitan region corresponds largely to the form of "residential enclave" (gated communities and country clubs). This type of real estate adds up to 48% of the surface of the new urbanized areas, while 43 % are simple lotissement and only 9 % belongs to public housing projects. In addition, this period is distinguished by:

- *Dispersion*: 45% of the new urbanized areas correspond to new estates that appear randomly without any continuity with the localities and 48% are contiguous to the urban areas of the different localities; while

only 7 % are new developments of inner vacant land in the towns of the region.

- *Low density*: only 6 % of the surface of the projects are multifamily housing projects in condominiums buildings of more than three floors each; 44% are estates only for family housing and the remaining 50 % are gated communities also for family housing but with bigger lots than the ordinary estates.
- *Low level of development*: only 26 % of the surface of the new developments in suburban areas is already fully occupied; 35 % have less than half of the plots with new houses and the remaining 39 % are newly approved or recently started.



Source: Bragos et al., 2016

Figure 2: Rosario Metropolitan Region. Public and private projects (2000 – 2015)

The creation of urban land and expansion control in Rosario

Since the beginning of the nineties a project for the urban borders of Rosario began to take shape. It was proposed to read the edge of the city in its articulation with rural areas as a "front", in the same way than the waterfront (the edge of the city with Paraná River). So, in the urban plan for Rosario one of the main projects for the city was the so called "Territorial Front". The following plans continue with this project which started to be developed at the beginning of 21st Century.

The new municipal authorities that began in 2004 launched various instruments of planning and land management; many of them were to be applied for the first time: special plans, detailed plans, urban agreements (between public and private sectors to develop new areas), residential parks, industrial estates, contribution for surplus generation, among others. Housing parks and industrial estates are related to the creation of new urban land for housing and the location of logistics and industrial activities. They were the main tools to build the Territorial Front.

As stated by Bragos et al. [10] the figure of "housing parks" was defined by local authorities in order to organize suburban expansion in Rosario. This figure was the result of real estate demands to develop projects in the edges of the city. The articulation between local authorities and major property developers led to improve municipal revenues with a series of public works done by the same developers as compensation for the benefits obtained. But at the same time also in building socially homogeneous areas since the target of the new real estates was the population of middle and high. On the other hand, the deadlines agreed with the real estate developers to implement their projects were very extensive. For this reason, most of these projects have not yet begun, leaving much land without being able to urbanize. So, the results obtained -the surface of urbanized land for new housing- is very little and that the generous deadlines may further delay the creation of urbanized land.

In this situation other social sectors have not the chance to build their houses in Rosario. Thus a demand originating in Rosario will find answers in other sites in the region; and this is one of the reasons that contribute to urban expansion in the small towns of the metropolitan region.

CONCLUSION: WHICH CITY IS BEING BUILT?

The most recent expansion process of urban areas in Rosario and its metropolitan region shows the formation of an urban region according to the model of the sprawling city. Model which is expressed with the emergency

of new urban nucleus and that ignores the social mix and the sustainability of urban development:

- limited connectivity between each other, but a strong connection to the main city center
- monofunctional character
- socially homogeneous neighborhoods
- low density

This situation demands other policies from the public sector and coordination between all locations to define the most appropriate tools for the creation of new urban land and the control of expansive processes. Not all the towns have their own urban plans, not the same policies and similar urban tools; anyway it is necessary to advance, as stated in common policies and instruments that can redirect the process of urbanization and recover the leading role of local authorities.

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