

Production of urban land use: The action of social and economic agents in the Island of the Santa Catarina/Brazil

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Abstract— *In order to understand the structure of urban space, it is first necessary to identify the processes that originated its spatial structure and the patterns they produce from it. Conzen (2009) emphasizes that the spatial patterns characteristic of a city are determined by the land use and by the types of constructions. Therefore, based on the unequal nature of urban growth, we intend to present in this research, the changes that occurred in urban land use that bordered the axis of SC 401 and SC 404 from the 2000s, as a response to economic cycles during that period in Florianópolis, a city located in the South of Brazil. Since the 1970s, the State of Santa Catarina Island has presented a series of public investments that have been determining the consequent and excessive capacity of valorization of urban land to the present day. The implantation of these investments directly reflects the production of the urban space, from the moment its location promotes changes in the morphological structure of the city, modifying the physical or built form, the interdependence of the plan, the urban fabric and the use of the soil, through action of the social and economic agents that shape and/or transform it.*

I. INTRODUCTION

The understanding of aspects and variables that are interrelated in the production of urban spaces from the implementation of public investments is essential in the search for better practices of intervention in the process they represent. This is because if “there is production of the space and production of the activities in the space, human activities are located differently in the space, creating a morphology”. (CARLOS, 2016, p.62). Yet, if the production “has social relationships as a content, there is also a location in the space” (CARLOS, 2016, p.62), which is different from the human activities carried out in the urban space.

This way, from these locations, modifications occur in the location urban morphology in their flows and displacements, as well as towards the worth (or not) of land use.

Therefore, location reflects directly in social relationships, thus the access to a “piece of land” will depend on the possibility of payment of the land area location that a determined population might afford. This location for itself will be linked to accessibility in relation to the privileged places in the city such as schools, health centers, leisure areas, or basic urban infrastructure network in the local (water network, light, sewage, pavement and transportation, among others). For Villaça (2001, p.333):

The dispute over locations is a dispute over optimization (not necessarily minimization) of energy and time waste. Segregation and displacement time control of individuals it allows are decisive in this dispute. However, men do not dispute while “individuals”, but

while classes and this dispute will determine the intra-urban structure in any modes of production [...].

In this process of spatial appreciation, the State plays a major role in the capital reproduction, because “it will indicate the modes of space occupation by the society, based on mechanisms of private appropriation.” (CARLOS, 1994, p.89).

Villaça (2001), shows that in Brazil, historically, the State action upon the control of the real estate market occurs mainly through the location of its instruments, that considering the highest layers of income, on the other hand, are followed by the commerce and private services first. Second, it comes the infrastructure production, distributed according to its institutional buildings, benefiting regions that concentrate higher income population, and at last, but not less impressive, the urban legislation.

According to Carlos (1994, p.192), “the State policies, which under the capital’s point of view are rational, are planned to serve the interests of the collective capitalism”. This way, “the State joins the capital, and at the same time in which it serves the ruling class interests, since it acts directly in the productive process. Such fact expresses in the space in such a different manner.” (CARLOS, 1994, p.192).

The State promotes urban improvements and controls the constructive potential, acting as a differential income generator in the land market, and the Real Estate capital, on the other hand, benefits, aggregating greater value to land - and, therefore, obtaining “differential appreciation of land use” -, besides limiting its access to the low income population by means of markup. (LIMA, 2011, p.255).

Villaça (2001, p.78) still states that, “the lots have different prices because their worth are different, and not because they produce different income”. For the author, “the appreciation of the vacant lot is a worth increase resulting from the production of the city and in the city. Vacant lots do not generate different income. The location, or “land location” has worth; its price, therefore, is the monetary expression of this worth.” (VILLAÇA, 2001, p.78). Yet, he says that, “the changes of use or urban changes do not generate different incomes, but land price adjustments or updates, and price ranging.” (VILLAÇA, 2001, p.78).

It is understood that, when it comes to urban structuring, road investments favor accessibility and promote the real estate appreciation. The same way, it is argued that the location of public institutional equipment, whether they are hospitals, schools or administrative buildings can be reproduced spatially from the moment they act as poles that generate the real estate appreciation of their contiguous areas equally. Therefore, they have an effective relationship towards these aspects.

The municipal Master Plan for itself represents the influence of the urban legislation in the planning of different periods of analysis, then, they reflect the action of the State under the perspective of the implementation of public investments carried out in the town, as well as guidelines for urban development. The implementation of the City Statute (Federal Law n.10.257 July 10th, 2001) and the compulsory Participative Master Plan was only implemented in the beginning of the 2000s.

Then, taking this into account, the relationship of the relevant legislation (Master Plans) versus the resulting urban form “as the construction of an individual and collective history” (CARLOS, 2016, p.64), in which “the material conditions of production materialize through the city plan, the streets layout, the roads design, the access lanes convergence, etc.” (CARLOS, 1994, p.97).

In order to understand the spatial process of the urban production and its importance in ordinary life, studies with morphological approaches appear to be an important tool for the analysis that try to identify changes in the physical context of urban plans, together with the investigation of the agents responsible for this process. This process, which reflects the reproduction of social relationships in determined time and space is carried out through the action of different agents that are producers of this space, whether they are production modes owners, landowners, real estate promoters, the State or social groups excluded. Their actions strengthen in the urban structure like modes of individual and collective appropriation that take determined time and space.

The understanding of this urban structure as a spatial result, has been discussed in the scope of urban morphology by authors Conzen (1960, 2004) and Whitehand (2011) from the English School of Urban Morphology. They encouraged people to read the city urban plan in their studies, by means of their physical spatial elements such as: streets, urban plots and buildings that together with the use of soil and issues related to the urban land appreciation reflect the structures that shape the urban tissue of a specific city, as well as the identification of the processes and actors’ actions, which are responsible for this transformation.

This research was developed in the city of Florianópolis, which is located in Santa Catarina state, in the South region of Brazil, due to a series of investments that were carried out from the decade of 1970 that clearly represent a “turning point in the intra-urban space”, “defining and consolidating the processes that had been administered for at least half of a century” (SUGAI, 2015, p.104). “Many of these social-spatial processes that consolidated in the decade of 1970 have already been noticed, even though timidly, in the last decades, and they defined the structuring of the urban space of Florianópolis.” (SUGAI, 2015, p.105).

In line with the data collected regarding the investments location and considering the social-economic data of the population residing in the areas analyzed, the first activity regarding the morphologic study of both regions was carried out with the survey of the primary elements of the urban form, using the historic geographic approach:

- a. Format and variation of the lot shape, observing the degree of differentiation used for the minimum plot of spatial organization, resulting from its format;
- b. Land use: identify the use changes occurred in the lots;
- c. Relative dimension, format, location (formal relationship with the urban) and the implementation (physical relationship with the land) of open spaces: verify the solutions used for these plans.

Activity 2 carried out the land market study with the identification of existent uses and the changes that occur in the tissue analyzed from 2000. For this to be done, two generic Plants of Values elaborated in the city in this period were considered when it was possible to identify the venal value of properties in order to verify their appreciation.

II. THE ACTION OF SOCIAL AND ECONOMIC AGENTS IN THE PRODUCTION OF URBAN LAND USE OF FLORIANÓPOLIS

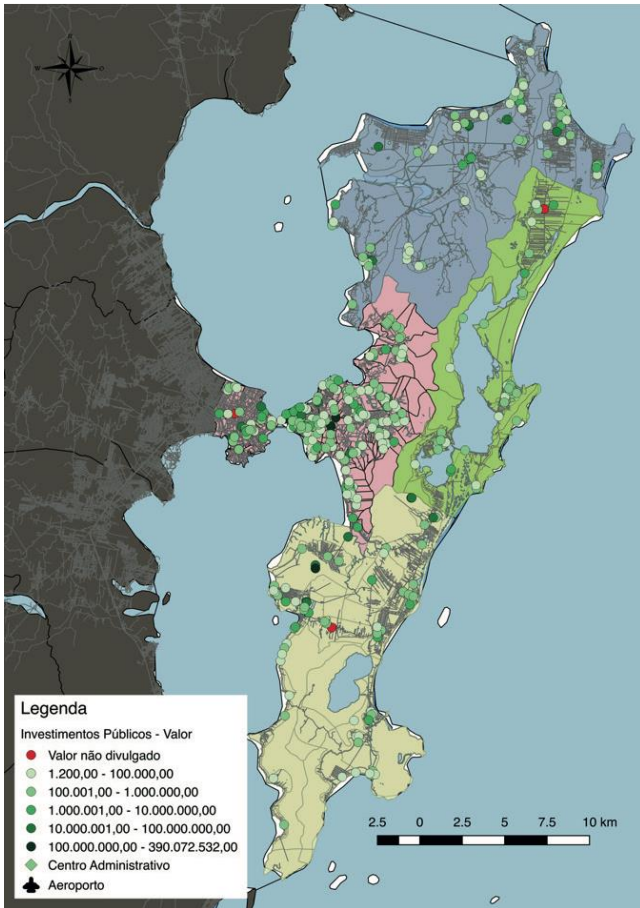
From the moment in which the State legislates upon land use and occupation, it is acting in the structuring and valuation of urban land. Therefore, does the analysis of the distribution of public investments in Florianópolis, “indicate the differences between the characteristic and the role these investments assume in the process of production and in the dispute of the intra-urban space” (SUGAI, 2015, p.183)? Yet, does it show the tendency towards the development for certain regions of the city? Do the investments and development occur in such an equal form?

Considering only the works concluded, the study identified 383 new investments in the city whose value is higher than half million reais (R\$ 593.043.385,00). The Municipal government was the public sector that made the highest value feasible for the city, totalizing R\$ 249.477.194,00 and the body that implemented the largest number of new works, that is, 300, distributed throughout the territory of Florianópolis. Followed by the Government of the State (R\$ 205.360.856,00 in 66 works), and in the end, the Federal Government (R\$ 138.205.335,00 in 17 works).

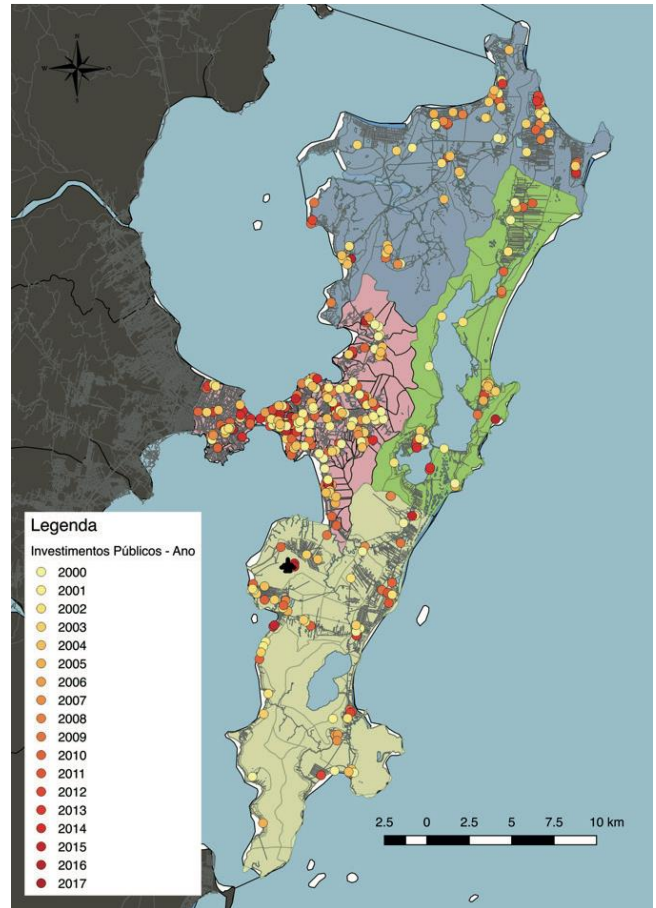
Evaluating its location by the administrative regions (Maps 01 and 02 and Graphic 01), it was observed that, regarding the number of works, the Headquarter region obtained the highest percentage of investments in the three public sectors. Yet, the Headquarter region, together with the North region, showed greater availability of resources by the State (the same percentage invested, 41%). By contrast, the East region was the least favored administrative region in both analyses, regarding the number of works as well as investments. If we analyze the Continent Headquarter administrative region separately from the Island administrative region, the data confirm what was presented in the end of last century. From the 444 works implemented in the city, only 39, that is 9%, are located in the Continent. Yet, if we evaluate the value invested, this percentage reaches a quite lower value. Only 7% of all resource available for the city was implemented in the Continent region.

This information corroborates the rates presented in the previous century (Sugai, 2015), which already indicated the lack of resources for the Continent region of Florianópolis, and its consequent segregation before the Island. For local communities in the Eastern and Continent regions of Florianópolis, the restrictions of these investments represent the limited scope of the State before any kind of investments for the population.

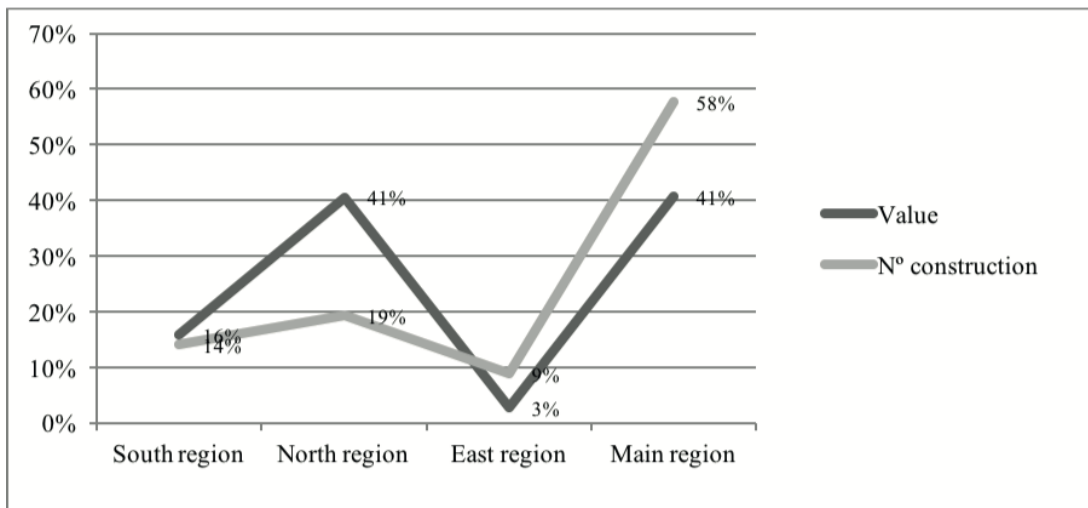
By evaluating the population dynamics of the city, it was observed that the Host administrative region shows the largest population in the city, that is, 249.477 inhabitants according to the data of Census 2010 (Table 01, Maps 03 and 04), together with the largest number of public investments in its three sectors, but it was the region which showed the lowest growth rate when compared to other regions.



Map 01. Public Investments in Florianópolis – data per value – 2000-2017. Source: Own elaboration.



Map 02. Public Investments in Florianópolis – data per year – 2000-2017. Source: Own elaboration.



Graphic 01. Distribution per administrative region of the investments carried out in the city from 2000, per value and number of works. Source: Own elaboration.

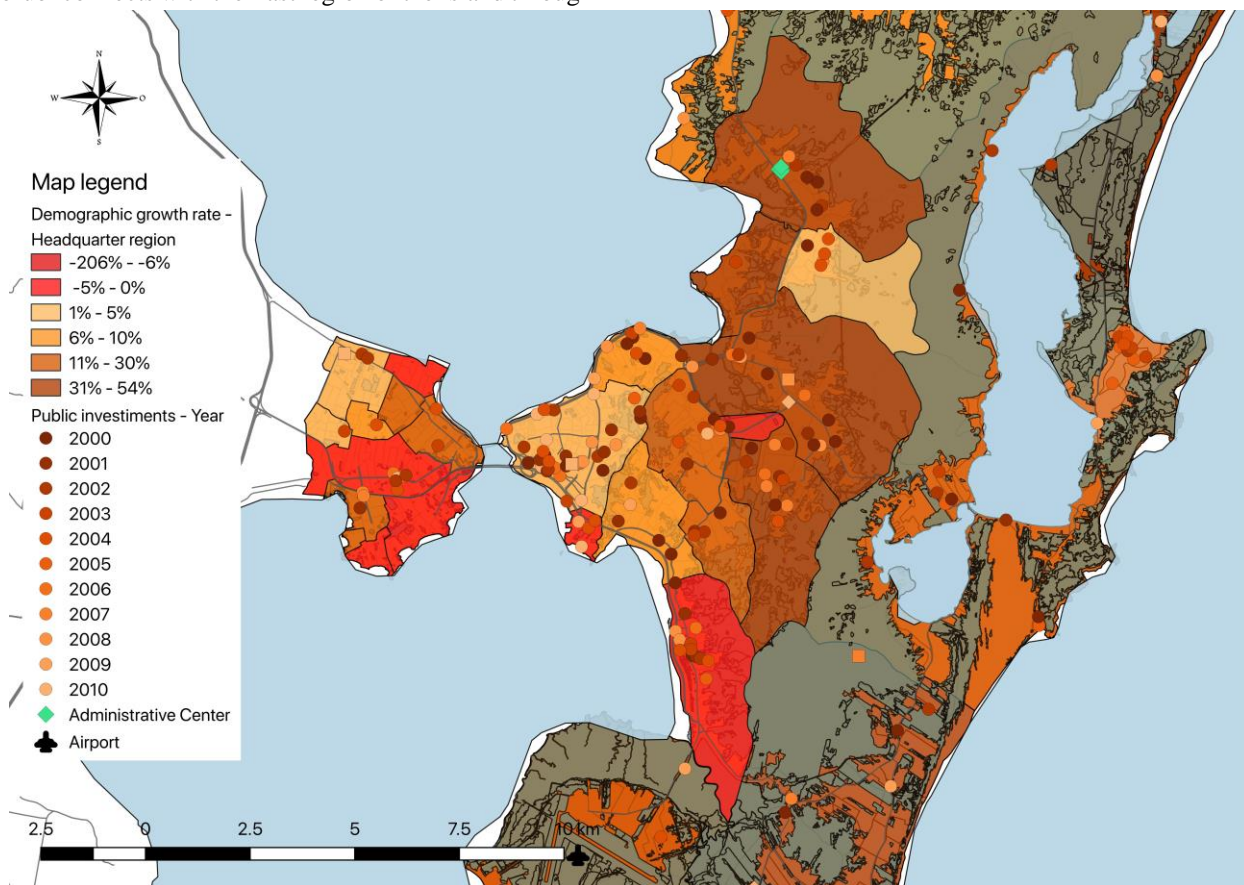
Table 01. Demographic growth rate x new public investments concluded – 2000-2010.

Administrative region / Districts	Population		Growth Rate	Average Income	Number of Works
	Census 2000	Census 2010			
Headquarter Region	228.869	249.477	8%	1.901	58%
East Region	18.434	25.882	29%	1.339	9%
North Region	42.353	67.795	38%	1.469	19%
South Sul	42.529	61.650	31%	1.287	14%

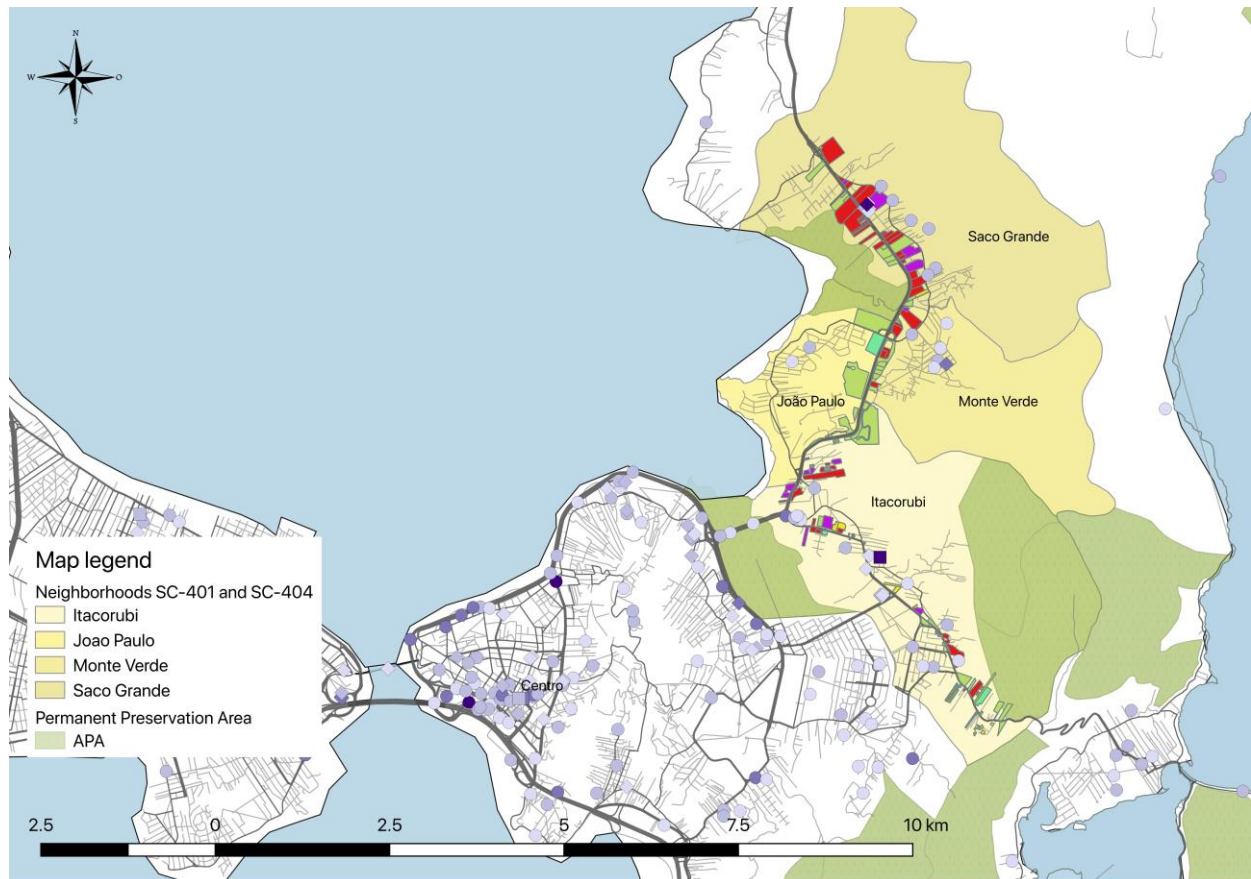
Source: own elaboration.

In the meantime, districts Itacorubi, João Paulo and Saco Grande (Map 04), presented a population growth superior to 30%, and their population have an average monthly income of 2 to 3 minimum wages. From these ones, district Itacorubi connects with the East region of the Island through

SC-404, and districts João Paulo and Saco Grande connect downtown with the north of the Island through SC-401, the least and the most favored regions by public investments, respectively.



Map 03. Demographic growth rate x new public investments – Headquarter region – 2000-2010. Source: Own elaboration.



Map 04: Demarcation of the regions selected for morphologic analysis. Source: Own elaboration.

Therefore, due to the characteristics found, the second stage of analysis was applied in both cases selected in the mapping of public investments: SC-401 (Road José Carlos Daux) in the pathway between Saudade Avenue and Haroldo Soares Glavan road, and on SC-404 (Road Admar Gonzaga) between Saudade Avenue and Condomínio Portal do Itacorubi Street.

SC-401 connects the north of the Island, which is the region the State favored the most in its three sectors. The axis where districts João Paulo (36%) and Saco Grande (34%) are located, the population growth was superior to 30% in the period between 2000 and 2010 (Demographic Census IBGE, 2010). On SC-404, which connects the East of the Island, and the least favored region by the State, district Itacorubi (34%), also presented a population growth over 30% (Map 03).

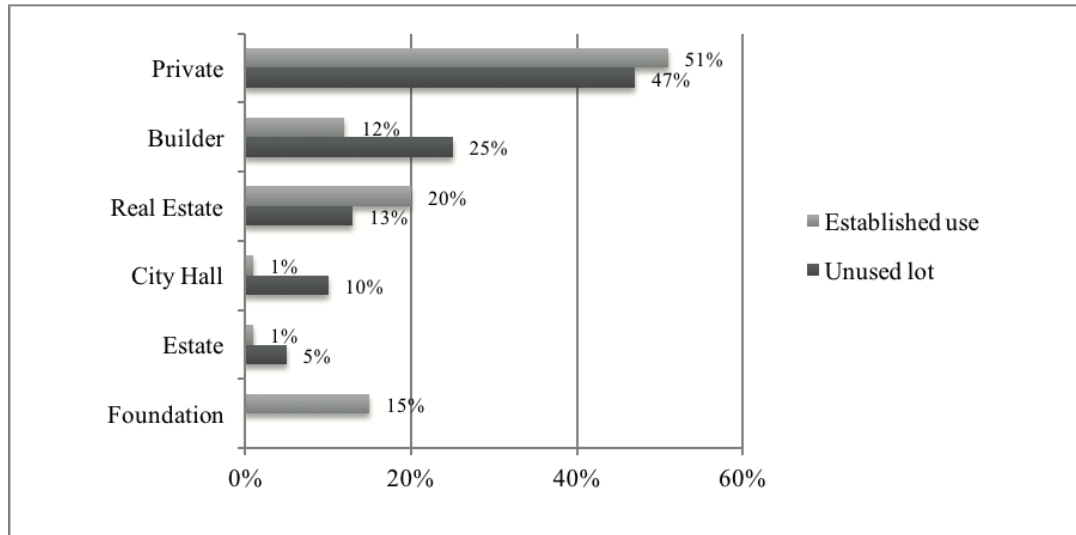
Based on the works developed by Conzen and Whitehand, in their studies on the changes of the city and its representation, the investigation of the resulting spatial arrangements was concentrated in the identification of land use of the plots that surround SC-401 and SC-404, thus these are the lots that face the two axes defined. In this

latest, 117 and 86 plots, implemented from 2000, were mapped on SC-401 and SC-404, respectively.

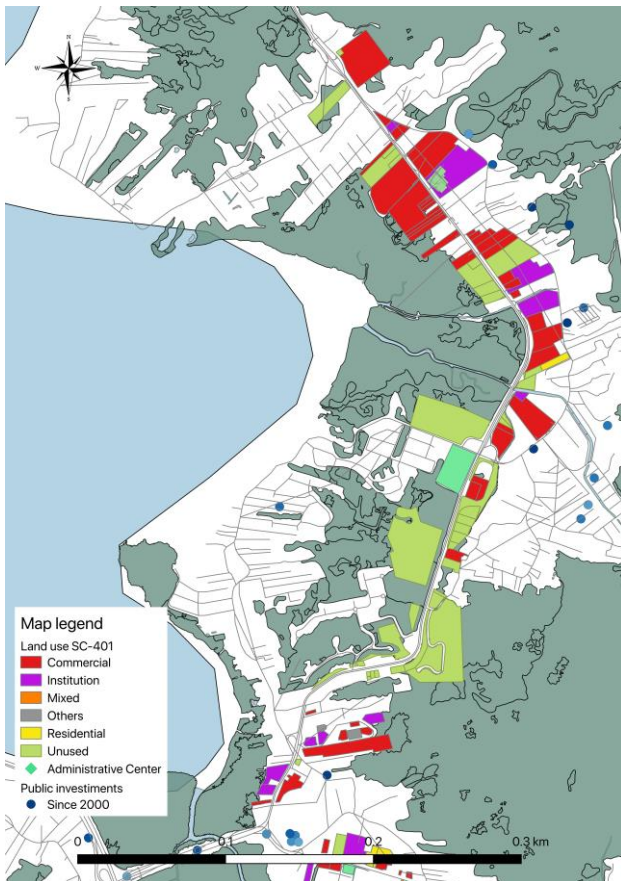
III. THE INFLUENCE OF PUBLIC INVESTMENTS IN THE CONSTRUCTION OF URBAN SPACE OF SC-401

From 117 plots identified on SC-401 (Road José Carlos Daux) in the lane between Saudade Avenue and Haroldo Soares Glavan road, 40 (34%) are non-used plots, 63 lots, that is, 54% are for commercial use, 10% are for institutional use and only 2% are for residential use (Map 05).

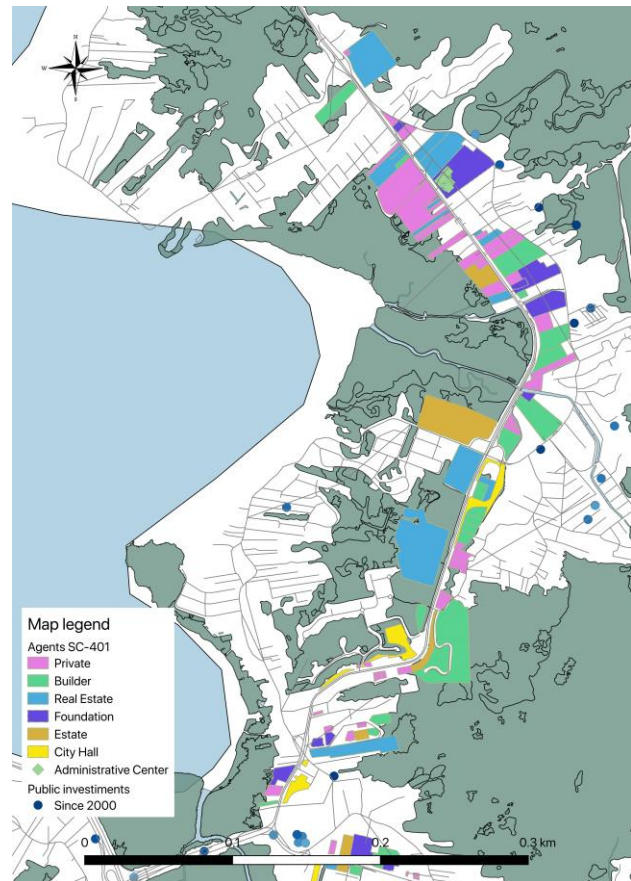
The majority of the agents responsible for the production of space SC-401 since 2000 were landowners, with 51% of production. Secondly, the real estate promoters, 20% only real estate agencies and 12% constructors and incorporators. The State, through Foundations/Institutions showed a representation of 15% in the production of the space in SC, and the City Hall of Florianópolis and the State Government showed only 1% each (Map 06 and Graphic 02).



Graphic 02: Percentage of agents in the production of the space on SC-401 since 2000 and future occupation from the possession of non-used plots. Source: Own elaboration.



Map 05: land use on SC-401 since 2000. Source: Own elaboration.



Map 06: Agents on SC-401, since 2000. Source: Own elaboration.

As a perspective of occupation, we can say that from 40 non-used plots, 47% are private properties, that is, belonging to landowners, 25% are the construction companies/incorporators possession and 13% correspond to

real estate agencies, totalizing 38% for the real estate promoters. 15% of the lots belong to the State, where 10% belongs to the City Hall and 5% belongs to the government of the state.

SC-401 owns only one investment implemented directly on the lane, the Administrative Center in the state of Santa Catarina. But only in this equipment, more than 20 million reals (R\$ 20.467.878,00) were invested, in different works that occurred from 2008 to 2017. There were several works and maintenance of the building of the old Bank of the state of Santa Catarina (BESC) so that necessary adaptations were developed for administrative activities of the state. In this case, the location of this equipment has always been institutional.

The use in the immediate surroundings of this investment is formed by plots entirely commercial, and yet, three non-used lots, that is, with perspective of being used. The landowners and real estate promoters were the agents promoters of the space, and the real estate promoters own the lands that are available for construction.

In addition, there was the construction, enlargement and improvement by the City Hall of three nurseries, together with the construction of a Fundamental School, a Professional Training Center and a Health Center for the residents of district Saco Grande in the region nearby SC-401. The only work related to infrastructure was the construction of sidewalks on a lane of Virgílio Várzea street.

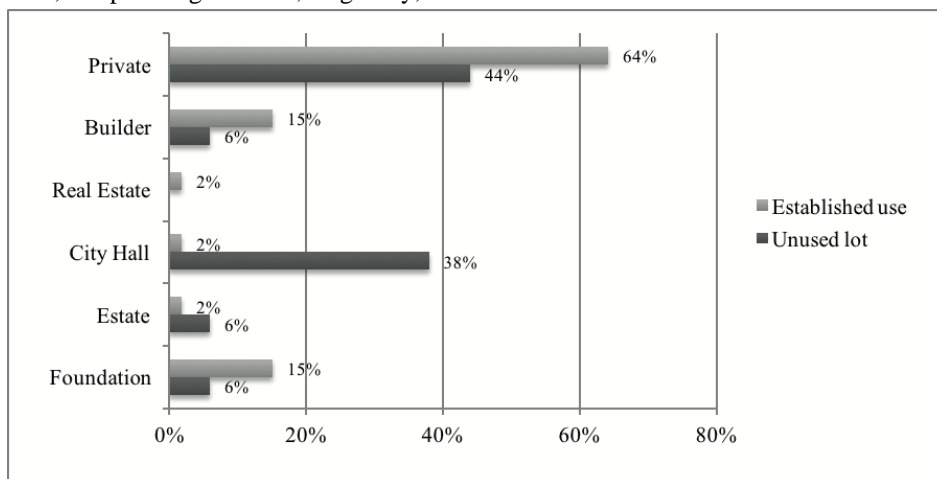
Overall, the plots of SC-401 have always had large areas. The plots mapped in the study have in average 12 thousand m² each, in areas that vary to 100 thousand m². In the case of the examples below, the plot in green had, originally, a

total area of 73.699,08 m². With its division in 2001, the plots were left with an area of 68.699,08 m² and two of them with an area of 2.500,00 m². But the plot in yellow, of a total area of 118.845,76 m², was demarcated in 2002 in five lots of approximately 2 thousand m² each, keeping a larger plot with 108.674,58 m². The first one belonging to real estate promoters and the second one to landowners.

IV. THE INFLUENCE OF PUBLIC INVESTMENTS IN THE CONSTRUCTION OF URBAN SPACE OF SC-404

On SC-404 (Road Admar Gonzaga) between Saudade Avenue and Condomínio Portal do Itacorubi street, 86 plots were identified, from which ones 19% are non-used lands, 52% are of residential lots, 21% are of commercial use, 6% are of institutional use and only 2% are of commercial and residential use (Map 07).

As in the case of SC-401, the main agents in the production of the SC-404 space, in century XXI were landowners, with a percentage of 64% (Map 08 and Graphic 03). But in the second position, it is the State that through Foundations and Institutions (15%), City Hall (2%) and the Government of the State (2%), was responsible for 19% of the production on the lane. With a little lower percentage, 17% is the production of the space carried out by real estate promoters, that is, 15% in the majority, implemented by construction companies/incorporators.



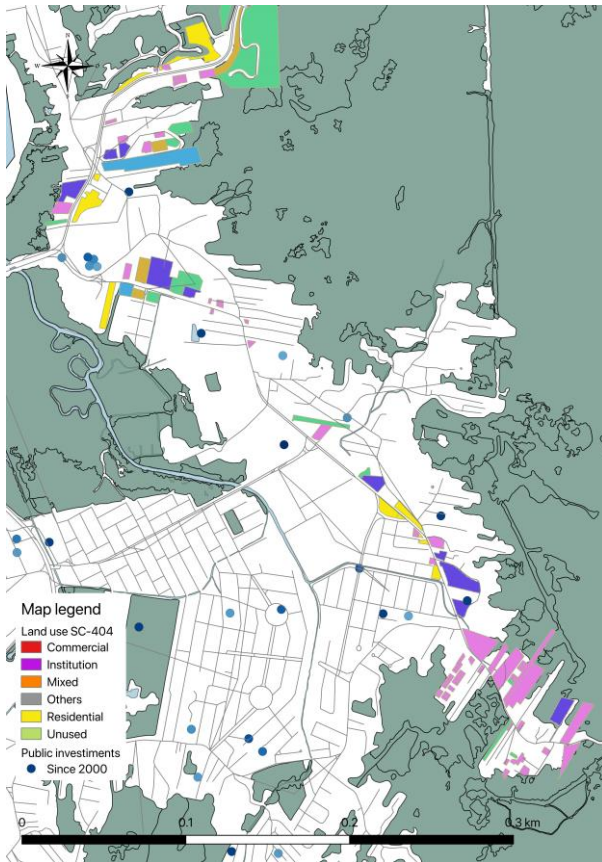
Graphic 03: Percentage of space production agents of SC-404, since 2000, and future occupation from the ownership of non-used plots. Source: Own elaboration.

Non-used lands on SC-404 totalize 16 plots. From these ones, 50% belong to the State, 38% to the City Hall, 6% to the Government of the State and 6% more belong to Foundations/Institutions. 44% belong to private owners, to landowners, and only 6% belong to real estate promoters.

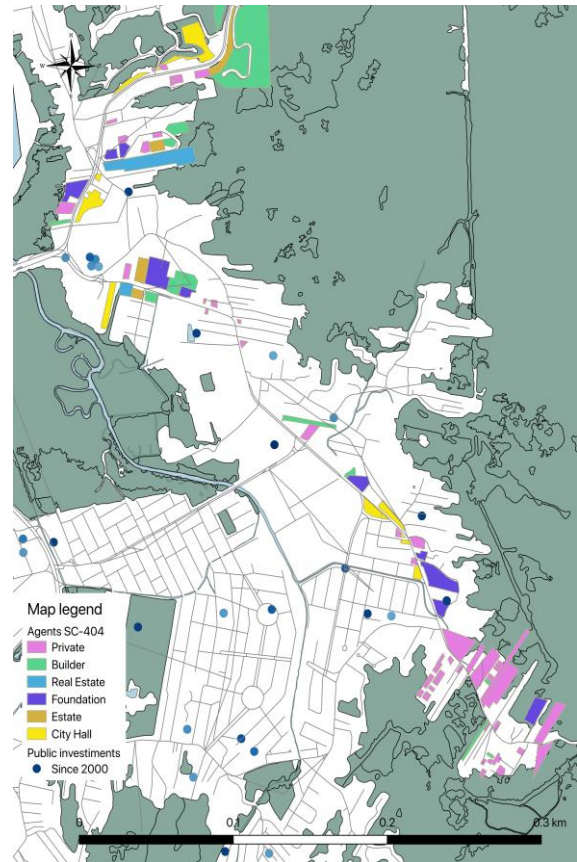
SC-404 owns more than one implementation of investment, that also totalize availability of more than 20 million reals in the region, as what occurred on SC-401, thus its location is distributed in different pathways. Except two main investments (described below), these are investments basically related to urban infrastructure, implemented by the

city, as the construction of channels to minimize the problems resulting from strong rain, the improvement of the sewage system and the implementation of a pedestrian crosswalk and the enlargement of the bridge. Besides these

ones, there was, for instance, the construction of computing labs and the coverage of a multi-sports court in a Fundamental School of the city.



Map 07: Land use on SC-404, from 2000. Source: Own elaboration.



Map 08: Agents of SC-404, since 2000. Source: Own elaboration.

The improvement of campus UDESC (University of Santa Catarina State) of the State Government, estimated in R\$ 115 thousand and the works of the town in the São Francisco de Assis cemetery estimated in R\$ 223 thousand, were the two main investments carried out directly on SC-404.

The immediate surrounding of this equipment was built in such a different manner, because of the type of equipment each of them represents for society. The region including the Cemetery presents the hotel, commercial, institutional and residential use. Yet, there is one non-used plot belonging to the State. The State, in its majority, followed by real estate promoters were the agents acting in this case. Just one landowner acted in the space production. But in the region which immediate surrounds UDESC, the residential use predominates, and the real estate promoters and landowners (constructor companies/incorporators) were the agents responsible for this process.

The Master Plan of 2014, Complementary Law n. 482, regulated the surroundings of the region where the

Cemetery, Community Institutional Area, following the tendency to the local due to the use that the equipment shows. Nearby, a Mixed Residential Area, allowing the construction of up to 5 floors and a Mixed Central Area of up to 6 floors were defined in its majority and other lands in order to densify the region.

The immediate surrounding of the University of Santa Catarina State, predominates the same way it does in an Institutional Community Area due to public buildings that already existed in there. The Mixed Central Area predominates on the other side of the lane, where buildings of up to 6 floors are allowed.

And regarding the size of the plots, in this demarcation on SC-404, as explained below, the original plot 45431,41 m² received its demarcation into four new lots of 8043,14 m² to 19145,74 m². But in average, the plots of SC own around 3.500 m².

V. FINAL CONSIDERATIONS

The axes of SC-401 and SC-404 are the lanes that mainly connect to the Northern and Eastern regions of the Island, and the second one is the most favored region by the action of the State and the least favored, respectively. The axes of these lanes concentrate three important equipment in which the State and Municipal governments act directly. In its surrounding, it varies as for land use and according to the characteristics that each investment presents.

SC-401, lane that connects the administrative region Headquarter to the region with the largest number of investments, in the North, presents in its axis of analysis, the implementation of a single public investment, an institutional equipment implemented by the State, which concentrated by itself more than 20 million reals. Its immediate surrounding is formed basically, by commercial and institutional plots, in which the landowners were the responsible actors for this development, followed by real estate promoters (real estate agencies and constructing companies/incorporators). The lots that have not been built yet, also belong to landowners, followed by lots that belong to the PMF, the State and Foundations/Institutions. In this case, the percentage of lots that can still be built reaches 1/3 of the plots, and from this, the State will be able to direct its actions.

SC-404, lane that connects the Administrative Headquarter for the least favored region by the state, in the East, has in its axis two main equipment where some works were carried out. All these investments totaled nearly 340 thousand reals. One of them, towards public service (cemetery), presents mixed surrounding with commercial and institutional functions mainly, where the commerce and institutional buildings are uses directly related, where the State and real estate promoters were the responsible actors in this production. The other one, an educational equipment State University from the Government of the State, presents a basic residential surrounding in which landowners and the State were the responsible actors for this development. 50% of the lots that have not been built yet, also belong to the PMF, to the State and to the Foundations/Institutions, that is, the spatial arrangement established on SC-404 had and will still have strong influence upon the State.

Regarding land use, on the Northern axis, the average land venal worth is R\$ 215,00, while on the Eastern axis the average land venal worth is R\$ 347,00. But the m² land average worth commercialized on SC-401 is more than 1 million reals, and on the Eastern axis the land uses worth are 40% lower than the ones practiced on the Northern axis, in which the m² land average cost is 660 thousand reals.

Therefore, the location of the investment is an economic variable, thus on the axis where the connection between the

regions that receive the action of the State occurs, administrative Headquarter and North region – SC-401, the landowners and real estate promoters acted strongly, and the State concentrates today great part of the lands which are still available for commerce. The land sale worth is twice the worth commercialized on the axis that connects the Headquarter to the East of the Island, which is the least favored region by the State. The location of the land, which is for a specific use is appreciated by its production and the regions that are linked to it.

Yet, the production of urban space developed from the morphological structure of the city demonstrates the interdependence of the plan, urban tissue and land use, through the action of social and economic agents that shape/change it.

The results found in this present study make feasible the comprehension of the reflexes of the State action upon the construction of urban space by means of its public policies and it shows if this process occurred in line with the plans proposed by land organization and, how this reflected on their implementation. More than encouraging the reflection upon its own planning process, it was possible to identify interfaces between different areas of intervention in the space of the city and in what proportion the local power has autonomy to determine land models, ignoring the political processes dependence.

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