NEW URBAN POVERTY AND WATER GOVERNANCE
IN SANTIAGO DE CHILE (1977-2008)

A morphologic and etnographic approximation to the transformations in the structures of dweling consumption in the frame of a neoliberal privatization

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6 / 2009

Topic, central research question and hypothesis

The history of the last three decades of the wastewater sector in Santiago de Chile, can be summarized in the globalization of the service, making it available to 100% of the population in great Santiago, in the neoliberal privatization frame. Such globalization had significant impact on strengthening the conditions of fragmentation and segregation of the social-spatial tissue in Great Santiago. With this verification emerges the possibility of exploring new forms of exclusion in the city associated with the transformation of the popular residential habitat. The privatization of this strategic sector has generated a direct effect on the consumption of physical units of water at home in the city as a whole, recording a steady decrease of the consumption. This gradual decrease in water consumption may be a key to interpreting this "new poverty" linked to the wastewater sector in the great Santiago. In this context, the central question emerges for this PhD research project: How the urban poverty has evolved in Santiago de Chile (1977-2008), based on the social-spatial transformation in the consumption structures, in the context of drinking water governance of neoliberal pattern?

Is then, a record of this transition from a traditional poverty determined by the disconnection habitat popular with the drinking water infrastructure, towards a new urban poverty as reflected in significant changes in the structure of household consumption. To achieve a first approximation to the transition of urban poverty, in this paper will present the initial results of a morphological analysis whose main idea was to construct a cartography that allows a reading of the market development of potable water in Santiago (1977-2008), with the goal of determining the spatial patterns of access to this basic good.

However, this doctoral thesis project aims to demonstrate the following research hypothesis, which states that: morphology and governance, form and power; two process superimposed in the same historical period, and analyzed based on the same case: the social-spatial transformation of the consumption structures in Metro Santiago; it can become a tool to understand the new urban poverty that happens in the contemporary cities, and to break free from the typical used methods, because of the new spatial patterns, and new adaptation strategies to the multiple exclusion ways that is imposed by the late capitalism of the beginning of the 21st century.

The discussion about drinking water in the city is not restricted only to people's access to a natural resource in an abstract sense, but responses to a long-term process, which Bates (1999: 25) calls the "conquest of water", a process that has enabled urban societies, to have "sufficient water and continuously without having to go to the well or closest river"; from classical provision systems, until the industrial city, and from there to contemporary megacities, supply systems have become increasingly complex, from a technical, economic, political and cultural point of view. An initial accuracy to initiate a theoretical approach to case study of this thesis, is understand that water, as a basic component of these Systems that allow the city to have a natural basis for their existence, is just a raw material. That is to say, in current drinking water urban systems, water has a very important role, but does not exclude many other processes and components become increasingly complex, as the phenomenon of urbanization is more extensive.

In line with Molina (2001: 58 y 59), urban drinking water is, then, more than a natural element, a juridical concept. This is very important, since it allows to understand that the notion of “drinking” responds to technical and political consensus that turns with the history of the cities; that is to say, for the contemporary city, with the accumulation of scientific knowledge we have, and advances in public policy and civil Rights, could not apply the adjective “drinking” to water was consumed in Rome in the first century, from any viewpoint. The city, from its technological and industrial potential has been able to build drinking water systems for human concentrations ever recorded in history, in geographical and climatic conditions very difficult; urban drinking water is an industrial product with a number of processes and value added, that now allows to talk, without fear of error, of an authentic urban economy of water. The market economy at this stage of capitalist development, in general defines to urban drinking water sector as an imperfect market or "natural monopoly" (Molina, 2001: 32 y 47)

This natural monopoly makes the city become a captive market, where users of that public service can not choose the offeror, creating an unusual economic environment in the capitalist economy, where competition is an essential component for the purposes of market regulation, of supply and demand. However, despite the provision of urban drinking water is approximately 6% of total global water market (Molina, 2001: 29), is able to generate economies of scale that makes this sector a very attractive niche for capital investment, due to its high profitability. A key element to contextualize historically the current phase of economic development of urban water systems is the way it manages in political terms. Molina (2007) refers to the consolidation of the water industry as the current state of

development of this strategic sector in the planning of the cities. Well, this water industry, “is not an island that is developed in isolation from what happens elsewhere in the country” (Valenzuela y Jouravlev, 2007: 57), and therefore it is manages from the political and economic criteria with which to manage the city as a whole; For this reason, the transformations that are found along the history of urban water systems clearly coincide with the twists and alternation in power that occurring in society (Molina, 2001: 32). Thus, in a context of market economy, in which the city, through public or private management models, generates goods and services necessary for the life of its citizens, they –to access those- must pay the price. In the frame of the process of globalization, water industry has had a special attention from the global capital market, and a sector that had traditionally been led from the public sector, from national or sectional governments, in the last thirty years has initiated processes to various management models, but with a clear leadership in the private sector.

Another important element to enhance, is that there is not a single framework for the privatization of urban water sectors. Each country and each city has come a particular way on the option to privatize the sector, indeed, there are cities that have not yet done so and have high levels of efficiency, but who chose this way, have achieved on the weaknesses or challenges faced, and sources of investment available (Molina, 2001: 32 y 33). For example, the specific history of United Kingdom and U.S.A. presents evidence about the differences between various models of privatization, however, they have something in common, globalization brought the creation of a transnational business highly interested in consolidating the global urban water market (Molina, 2001: 34). The main reforms to the drinking water sector are found in Chile as part of a military government that instituted a process of economic liberalization, supported primarily on the constitutional charter of 1980 which, among other functions, aimed to build an institutional framework compatible with the neoliberal ideology that dominated the political agenda of the continent. (Bauer, 2002: 54). In this constitutional context gives origin to the waters´ code, still current in the country, which at last introduced the ability to the private sector to operate and rent the country's water resources (Bauer, 2002: 15).

After this period, is beyond the idea of the state as a centerpiece of the economy and social inclusion; the principle of subsidiarity, applied to urban development implies a redefinition of roles, in which the private sector was able to control access to areas of urban management, that in the past were almost exclusive jurisdiction of the state and the public sector (Figueroa, 2004: 247). This principle of subsidiarity, in the case of drinking water, meant the emergence of a new power in terms of access to this basic good, and under a significant market leadership and investment of foreign capital, the operation of this strategic

sector was given almost entirely to private initiative. The new paradigm of water management in the city, under the rationale of the market, has meant a change in state functions, thus, but has delegated to the private sector the service provision, retains responsibility for regulating the discharge of the water industry, guaranteeing in this way, universal access for all citizens; indeed, De Mattos (2004) notes that the regulatory role of the state has strengthened when disappeared its skills as operator and marketer of the service.

Historically, the relationship between water and poverty has deep spatial roots, That is to say, the place where poor people live often has difficult access to drinking water in some phase of providing of this service. In the specific example of Santiago has been the case, and with greater force due to the role of the market in land policy has been implemented since the military government to the present. Pflieger (2008: 150 y 151), highlights the important contribution that has made the development of access to drinking water, in the definition of the urban tissue of the city of Santiago and its recognized realities of segregation and fragmentation. However, universal access to drinking water, has blurred the link between water and poverty,

Today the city has about a 100% coverage, and apparently the new realities of exclusion have indicators for measurement. For over 15 years, Rodriguez (1994) found this new field of water and poverty, because apparently, the universalization of drinking water infrastructure, emerged a new challenge in terms of overcoming poverty: equity in consumption. Apparently, the design of the new management model for the water sector, is functional to the market logic, but it is disjointed from the real capabilities of the demand. Rodríguez (1994: 34), reconstructs the relationship between water and poverty, apparently overtaken by the globalization of networks, and relocate the debate on what he calls the consumption breach, which, currently in full force, and questioned the regulatory capacity of the water market by the State in the context of this neoliberal privatization.

From this new understanding of the relationship between water and poverty, with a large space-based and focused not from the networks but on the capacity of consumption, it is important to note, on Swyngedouw´s reflection (2004: 35), that the substance of this debate continues the discussion on citizenship and the right to the city. It is in this theoretical context where is located this thesis, in the urban water commodification and how this is a sign of rationality that dominates the current urban development affecting the ability of those who live in the city to become citizens (Swyngedouw, 2004: 184).

Methodology

This is a preliminary report, where the initial idea is to build a mapping, from information of the last three censuses (82-92-02), that containing the evolution of drinking water market in Santiago, during the study period (1977-2008), and organized so that it can be "translated" into space language, the history of access to basic goods in a context aimed towards privatization, to establish the role of the water sector in the socio-spatial development of Santiago de Chile.

Methodologically, this is an initial review of secondary sources, recent academic studies, from a historical perspective, have recorded of socio-economical effects of water governance model implemented in this city in recent decades.

Then, from a spatial analysis begun by Pflieger y Matthieussent (2007) for 1982 and 1992 censuses, in which examines the relationship space-time of the process of access to the connection of water supply and sewerage in Greater Santiago, this investigation continues and completes the analysis, with geo-referenced information from the census 2002. Unit of analysis for this phase are the districts.

Next, is intended to build a methodological bridge that allow rethink epistemologically the focus of water-poverty relationship, from a poverty related to access to drinking water, to a new poverty poverty transforming the structures of dwelling consumption. Then, from a study of Cepal, which summarizes the record of the behavior of average consumption of drinking water in Greater Santiago, from the systematic increase in the rates; will begin a process of spatial disaggregation of dwelling consumption data, which are in the databases of the annual reports of the SISS.

This first disaggregation responses to the territorial division of the business operations of drinking water supply in Greater Santiago, and which also take into account the seven major concessionaires covering more than 95% of the demand of the population of the metropolitan area (SISS, 2007). With this first exercise is intended to establish how is distributed spatially the consumption capacity of the inhabitants of this city.

The water sector in socio-spatial development of Santiago de Chile

The universalization of the water service in the greater Santiago has been closely linked to the housing policy taken by the Chilean government in this study period (1977-2008). This assertion is based on the coincidence the partial and gradual disappearance of informal settlements (slums), with the mass construction of subsidized housing projects for these families. The housing policy implemented since the military government, was made on the basis of a liberalization of urban land. Indeed, in 1979 it was conceived the National Policy on Urban Development (PNDU), which ghanged the Intercomunal Regulatory Plan for Santiago (PRIS) of 1960, and that its most important components modernizers were: "The removal of the old boundaries of urbanization, doubling the area open to urbanization, from 35,000 to 100,000 hectares; and decreased taxes for real estate transactions"(Pflieger, 2008: 140).

This reform coincides with the improvement of the institutional frame of drinking water sector, which was able to recognize this new model of urban development, that deepened the option to locate solutions for the poor on the outskirts of Greater Santiago. The new city boundaries were not then constructed from the political consensus around a specific model of sociospatial development, but, were those who identified home networking utilities, including, without doubt, the most decisive was the drinking water. In other words, the city expanded during the last three decades as far as providers of public drinking water is permitted, and the evidence indicates that in the extreme periphery of Santiago, "the networks of water and sanitation were designed as the only links between areas strongly differentiated socially "(Pflieger, 2008: 135).

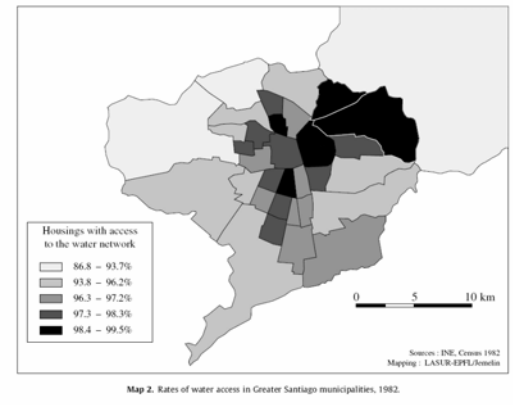
Then, universal access to drinking water had a significant impact on strengthening the conditions of fragmentation and tissue sociospatial segregation in Greater Santiago, and with this verification emerges the possibility of exploring new forms of exclusion in the city associated with the transformation of the popular residential habitat. That is, if it persists in Santiago of Chile realities of inequality in richness distribution, and it has a clear territorial expression, is possible to explore the implications of the universalization of drinking water and its relation to the consumption capacity of a service provided by a privatized industry, where the state has a predominantly regulatory role. Before turning to this point, the following sequence of maps shown what has been the spatial logic of universal access to potable water and sewerage in Greater Santiago. (See Figure 1)

Figure 1

Expresión espacial de la universalización del acceso al agua potable y alcantarillado por comunas en el gran Santiago (1982 – 1992 – 2002)

Viviendas con acceso a agua potable

1982

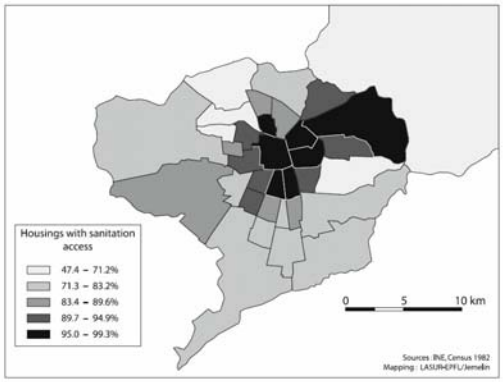


Map 2. Rates of water access in Greater Santiago municipalities, 1982.

Source: Pflieger y Matthieussent, 2007

Viviendas con acceso a alcantarillado

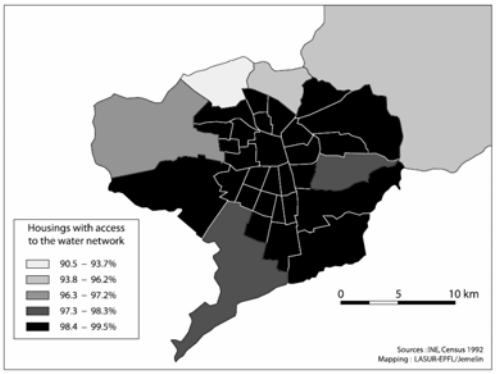
1982



Map 4. Rates of sanitation access in the Greater Santiago municipalities, 1982.

Source: Pflieger y Matthieussent, 2007

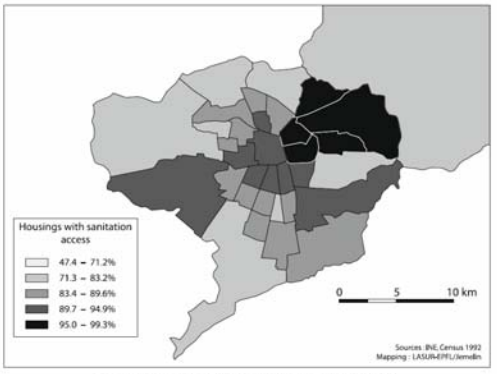
1992



Map 3. Rates of water access in Greater Santiago municipalities, 1992.

Source: Pflieger y Matthieussent, 2007

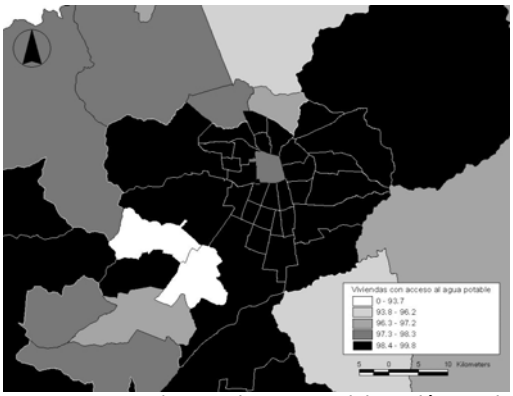
1992



Map 5. Rates of sanitation access in the Greater Santiago municipalities, 1992.

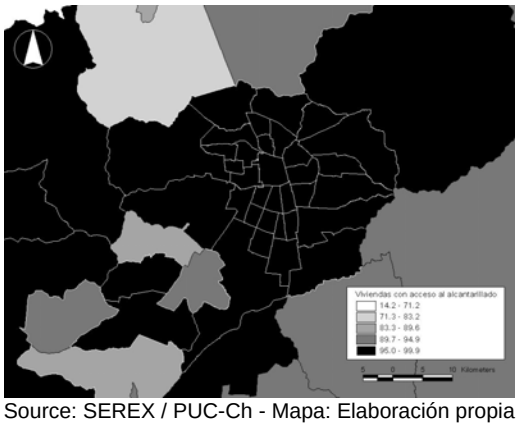
Source: Pflieger y Matthieussent, 2007

2002



Source: SEREX / PUC-Ch - Mapa: Elaboración propia

2002



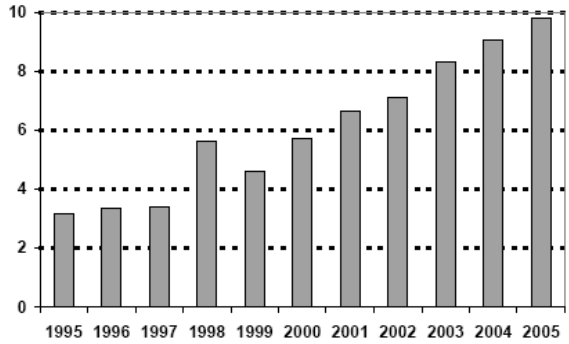
Source: SEREX / PUC-Ch - Mapa: Elaboración propia

From poverty linked to the access to drinking water, towards the new poverty transformer of home consumption structures

Figure 1 is convincing in demonstrating the capacity displayed by the policies of liberalization of the sector of drinking water and sewage, as regards the expansion of networks and home connections to this basic good. As the sector was gradually being transferred to the private sector, it was subject of enormous investments of transnational capital, which, in the phase of privatization (1994), was intended to cover the environment deficit, in terms of sewage treatment.

The modernization of the sector was based on consolidating an urban water market able to cover through the tariff structure, the actual cost of service production, the projections regarding the development of the industry and, of course, meeting the utility expectations of the investors. This, undoubtedly, meant for users of the service, a gradual increase in price, which have become effective before 1994, but with privatization it has been consolidated. (See Figure 2)

Figure 2
EMOS/AGUAS ANDINAS: Evolución de la cuenta típica en gran santiago (GRUPO TARIFARIO 1), 1995 – 2004
(Miles de pesos chilenos)

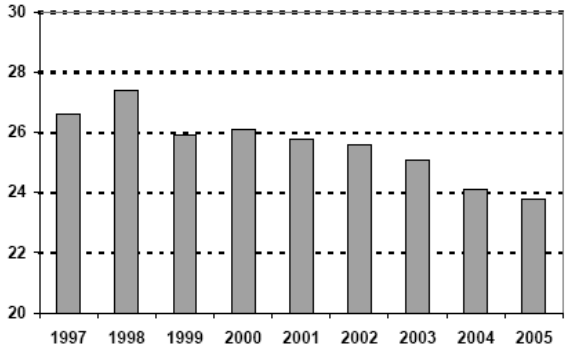


Source: Valenzuela y Jouravlev, 2007: 12

This situation generates a clear questioning about the relationship between the efficiency gained from the reforms to the sector and the legitimate expectation that it will be translated in a reduction in tariffs, "which has not happened so far" (Jouravlev and Valenzuela, 2007: 44). Obviously, the pricing system is accompanied by a scheme of targeted subsidies to the most vulnerable sectors of the population, which enables this sector of society which is unable to assume the real costs of the service to be supported by a percentage of the bill by social policies of the Chilean State.

However, despite this clear intervention of the State in a market almost completely privatized of the metropolitan area of Santiago, it had a direct effect on the consumption of physical units of home water in the city as a whole (See Figure 3).

Figure 3
EMOS/AGUAS ANDINAS: Consumo promedio por cliente, 1997 – 2005
(Metros cúbicos por cliente por mes)



Source: Valenzuela y Jouravlev, 2007: 12

This gradual decrease in water consumption may be a key to the explanation this "new poverty" linked to the waste-water sector in the greater Santiago. Figures 2 and 3 correspond to graphs elaborated by Valenzuela and Jouravlev (2007), based on aggregate data of the performance of the sector throughout the metropolitan area, as a result, there is a concern for exploring what kind of ties there are between the decrease in drinking water consumption and socio-spatial development of Santiago, fifteen years after privatization. Figure 4, begins to answer partially to this question. A first exercise of spatial disaggregation of the consumption data, from an analysis of the last ten years that actually account for that decrease, that on average for the metropolitan area does not go beyond a reduction of four cubic meters per client, but that analyzed from a territorial perspective, it is found the theory of Rodriguez (1994) called the "consumption breach".

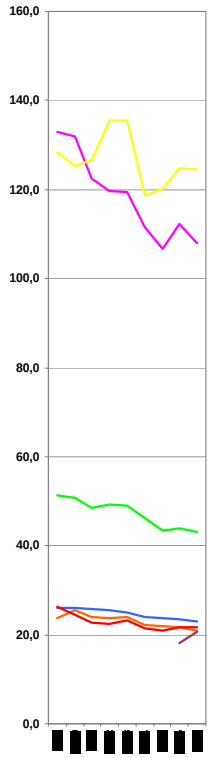
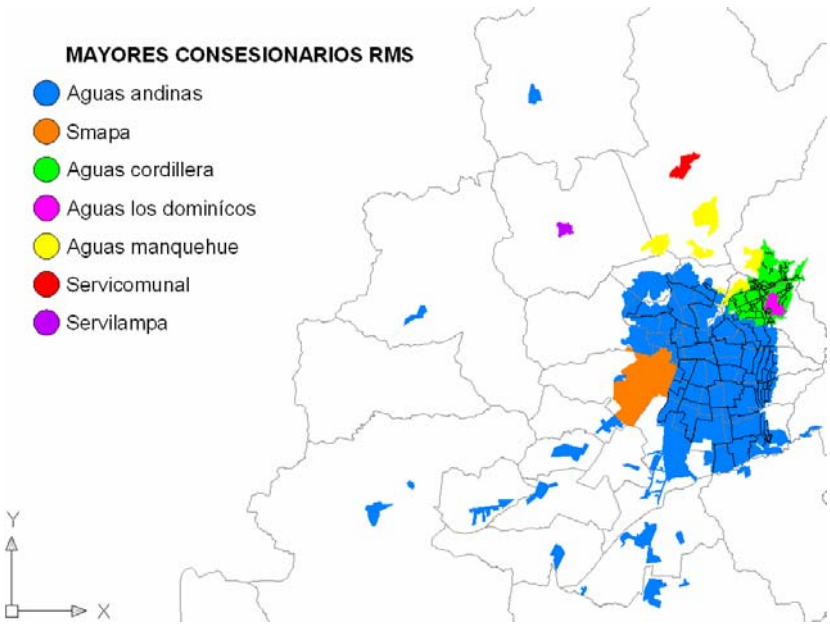


Figure 4
Consesionarias de agua potable región metropolitana de Santiago
Consumo promedio por cliente, 1999 – 2007
(Metros cúbicos por cliente)



Source: Superintendencia de Servicios Sanitarios SISS - Mapa: Elaboración propia

It is, then, observed, how the dealers located in high-income communities, the so-called "cone of high income", described high differential consumptions (over 100m3) in relation to other operators located in other parts of the metropolitan area. However, the average consumption of the largest service provider (Aguas Andinas) are the less of the entire region (approximately 22M3), together with the public company that operates in the district of Maipú (Smapa).

This first spatial approach does not still allow to have conclusive explanations regarding the reasons for the shrinking household consumption since the privatization of the sector, however it is orientating in terms of the possibility of continuing disaggregating these averages, that are still vast areas and highly heterogeneous in terms of economic and social point of view.

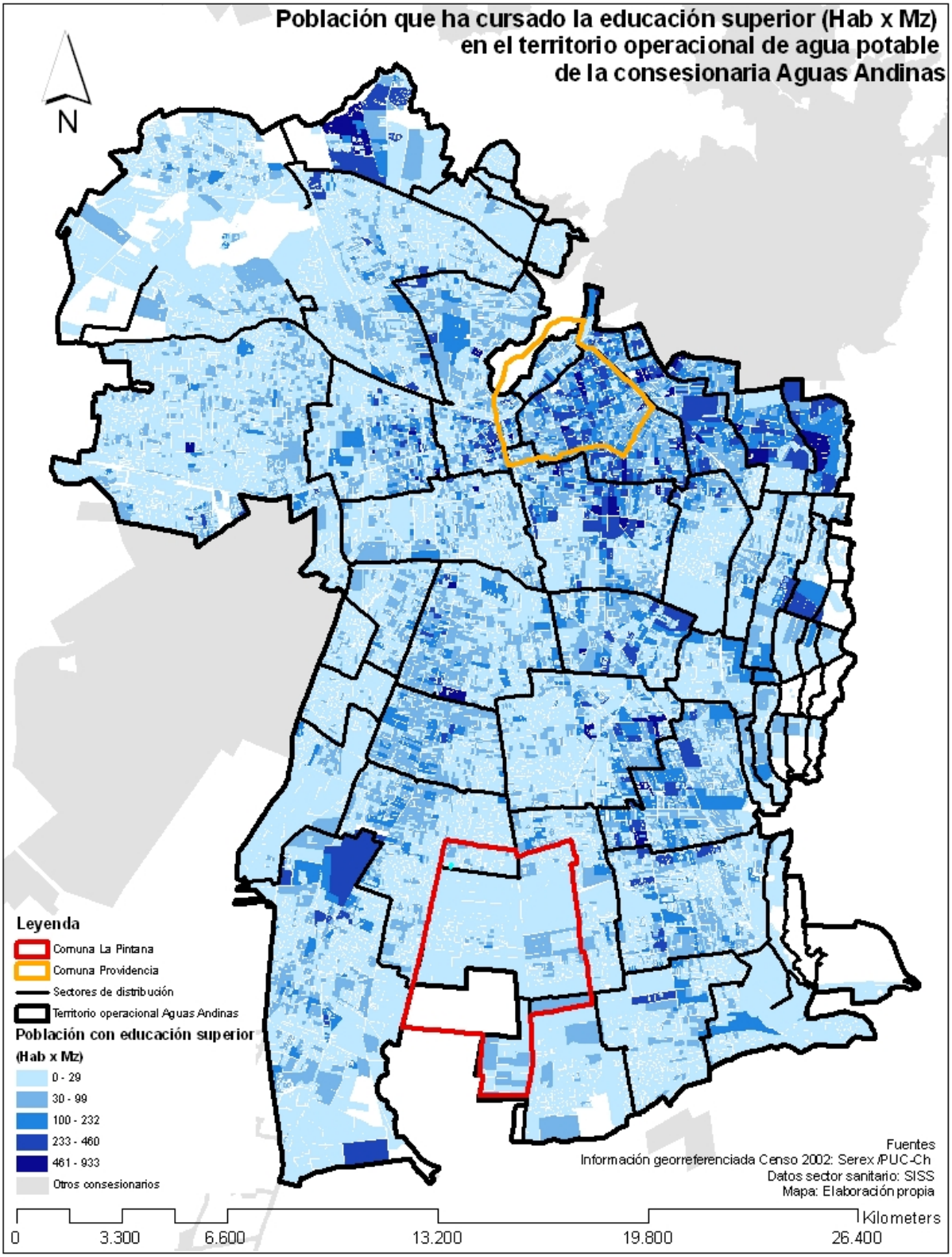
Perspectives/outlook and Open questions

In consequence, if in the whole region, the range of consumption in 2007 varied between 20M3 and 120M3; it will be very enlightening to determine within the operational territory of Aguas Andinas, what would be its particular range of consumption, if its average for the 2007 was 23M3?, how low can the bottom of that range be?, and what are their tempo-spatial patterns? These would be the challenges to be met when obtaining access to data, not by company, but by client, or otherwise, any grouping of this information that can break down the spatial distribution of consumption in the operational areas of the companies that provide the service.

As an example of it, Figure 5 is a proof of the heterogeneity of the operational area of Aguas Andinas (Santiago), it is a map that synthesizes data from 2002 census, in this case the population that has completed higher education (inh x mz), and in an arbitrary mode, the communities of Providence (high level) and Pintana (low level) are highlighted.

Under the assumption that the level of education determines the access to the labor market and consequently, the income level and consumption capacity of households, we could be facing the possibility of constructing a reading of the new urban poverty in Santiago, no longer dependent on the binary rates of connection, but linked to polyvalent realities from the structures of home consumption of drinking water. This will be the next task, to analyze how the lowest consumption sectors behave, where they are located, their stability over time, and their relationship to socio-economic composition of the territories where they thrive.

Figure 5


Población que ha cursado la educación superior (Hab x Mz)
en el territorio operacional de agua potable
de la consesionaria Aguas Andinas
N
Leyenda
Comuna La Pintana
Comuna Providencia
Sectores de distribución
Territorio operacional Aguas Andinas
Población con educación superior
(Hab x Mz)
0 - 29
30 - 99
100 - 232
233 - 460
461 - 933
Otros consesionarios
Fuentes
Información georreferenciada Censo 2002: Serex /PUC-Ch
Datos sector sanitario: SISS
Mapa: Elaboración propia
0
3.300
6.600
13.200
19.800
26.400
Kilometers

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