

Urban planning, environment and citizenship participation

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Abstract

This paper shows the procedures followed in 2003 to define urban guidelines for Ushuaia, a town of 45.000 inhabitants and capital of Tierra del Fuego Province, in the south of Patagonia. The unique features of the town, referred to as 'the town at the end of the world' or 'Land's End', were considered; these consisted of the area being the Antarctic gateway, with tourist development, improper land occupation, outstanding natural scenery and environmental risks.

During the planning process different steps were taken into account: citizenship participation and its involvement with environment protection, identifying social and institutional obstacles, urban and environmental analysis, social consensus for regional diagnostic, urban guidelines and definition of structural projects.

Focus was given to environmental facts taking into account high risks derived from three main questions: unrulid urban expansion, fast demographic growth and recent tourism development.

The planning process was ruled by five main criteria for city management and governance: articulation between day-to-day urban problems and community demands with long range urban planning; interdisciplinary approach (architects, urban planners, political scientists, economists), cooperation between public and private sectors, interconnection between different levels of government (local and provincial), economic development and environmental protection.

The paper ends with an evaluation of the present situation, three years after the urban guidelines were defined.



1 Planning challenge

Under the guidance of IGC staff, the 'Ushuaia Urban plan' was an attractive task being so close to Antarctica. The mythical city at the edge of the world, surrounded by lakes, snow, forests, islands, sea and mountains, is a picturesque haven.

Once there, we realized that there was another Ushuaia beyond the postcard. A city that grew with no rules, a society that is not ready to obey the same rules that inhabitants of other Argentinian cities and towns have to follow.

Urbanization process in the far south was fast and very disorganized, almost savage. At the end of the 1970s people from different regions of Argentina came to the small village that was not able to receive them. Municipal and provincial institutions were overtaken and the small town collapsed. There were no houses to rent or to buy, available rents were too high and public housing was not substantial enough in a region with severe weather during the long winter. There was only one solution: occupying public land, building a house and asking for services. For years this became a tolerated and accepted social practice known as 'occupation' (intrusion); a cross-sector social practice. Public land became a synonym of no one's land; that everybody was able to occupy, alone or communal, a piece of land to build his own house. And they still do it, even to build a weekend house.

This social practice proved to be too aggressive for the environment, and people realized that continuing this process for a long time would 'kill the goose that lays the golden eggs'; the natural environment, Ushuaia's postcard.

The attractiveness of working with the mythical city became a challenge:

- Would a plan work with a society too far from these practices?
- How to deal with people used to a no rule society?
- How environment could be protected and, at the same time, promote productive activities?
- How to involve population in this task?

Community participation was then a task to be developed. And it was done according with IGC methodology synthesized by Grandinetti [1,2].

2 Urbanization model

At a historical moment, factors of different nature cross themselves giving place to a particular urban / regional model. This process involves all social sectors of a community in different actions and processes: socio-economic trends, technological development, dynamics and behavior of market forces, development of government's institutions and civil society, decisions and direct interventions of government's different levels (national, provincial and municipal).

In that sense, urbanization process in Ushuaia's region has been conditioned by:



- Its strategic location in the southern end of the continent and its privileged position as Antarctica's gate.
- The value given by national government to such conditions.
- The presence of military garrisons and also extensive vacant surfaces owned by national organisms.
- The national policies to stimulate socio-economic development and demographic growth in the region.
- The explosive migratory process from other regions to the two small towns of Tierra del Fuego (Ushuaia and Río Grande) registered in last two decades.
- The accepted and tolerated social practices for urban and rural land occupation (appropriation / intrusion) and the subsequent building of houses.
- The action (and omission) of provincial and municipal governments in that occupation (appropriation / intrusion) process.
- The action of provincial and municipal authorities regarding land, dwellings, services and urban facilities.

The articulation of all these factors acquired specific peculiarities in different historical moments, giving place to a city and region which at present time shows distinctive and alarming features:

- disordered urban expansion;
- high cost for infrastructure and services;
- building in risk areas;
- landscape and the environment aggression.

Within this scope, future development of Ushuaia will depend on a wise use of its human and natural features; in other terms, in the way its territorial capital will be optimized; that is to say, tangible aspects (human capital, natural resources, landscape, infrastructure and equipment) and those intangible (forms of government, institutions, decision making procedures). These are the key factors to be addressed to analyze the development alternatives for Ushuaia.

High rates of demographic growth registered in the last decades, and growing expectations for subsequent years, indicate that demographic pressure will continue on housing and urban land. Until the present day, there was only one extension of urbanized areas, excluding areas of subsequent urban growth. This way of growth rules out other possibilities, for instance urbanization of interstitial vacant lands (big and undivided areas and vacancies that are inside urbanized area) and urban renewal (urban sectors with high degree of deterioration).

The result of this way of urbanization in the last decades is an urban strip too extended for the relatively small demographic dimension. This alerts on the question and makes the definition and adoption of a new urban and regional model imperative. A model that should be formulated starting from an adjusted measure of actual growth trends, in connection with expected scenarios. Namely, a strategic vision sustained in the principle of protection of environment and landscape local features.



The adopted urban / regional pattern is guided, therefore, towards a more compact city that intends a wiser use of infrastructures and public services; preserving at the same time the main and exceptional features of natural landscape. This means a dramatic change in the past and present trends and behaviors.

Urbanization in the far south region was signed in the last decades by a significant presence of irregular situations, a lack of consideration to public spaces, a high cost of services and aggression and risks to an exceptional and highly valued landscape. Avoiding this situation (and its reiteration) demands clear guidelines about two basic questions:

- The definition of urban expansion boundaries.
- The procedures to be followed for urban renewal.

3 New urban expansion areas

Identification of proper areas for urban expansion starts from a main idea: urban expansion must be controlled and clear limits have to be established. In other words not all the land will be allowed for urbanization, as was the case up to today. According to this, boundary points were established, beyond which no area was considered for analysis. Thresholds Analysis Theory developed in the 1970s by B. Malisz and J. Koslowsky was considered useful for this situation and adapted to Ushuaia's plan procedures, case studies of which can be found in Forte [1]

Those points were considered as barriers to urban expansion. In that sense, identifying barriers allowed to delimit areas, which were excluded for housing development, tolerating other developments with special restrictions. These urban expansion barriers were identified according to different and connected criteria:

Environmental, excluding those inadequate areas for urbanization due to present or future risks for population:

- +100 metres above the sea (for higher levels slopes are too deep and many natural drainage areas are found; modifying this system could derive in serious landslides);
- peat lands (these natural formations are water reservoir and resonance boxes during earthquake events);
- creeks and riversides, to avoid flood effects, mainly in spring and summer when snow is melted.

Landscape, excluding those areas of high value landscape, which also are the image of Ushuaia and tourism marketing, protecting them, allowing its public use and avoiding its illegal appropriation:

- forests and sites with especial vegetation;
- bay sides.

Danger and risk, excluding those areas with risks to health and life, such as areas with:

- power engines;
- gasoline depots.



Once those areas beyond barriers were excluded, urban expansion areas were identified. This supposes a classification of these areas according to different obstacles they present to urban development. These obstacles are considered thresholds with different cost levels. Therefore, the next step was the identification of those situations considered as thresholds, identifying factors with different costs to urban (housing) development:

- Land features**
 - a- deep slopes
 - b- rocky lands
- Urban services**
 - c- requirements for services networks extension

Land features and services extension possibilities represent different urbanisation costs according with different areas. So, identification of urban expansion areas according to “thresholds costs” was compulsory:

- **Urban extension areas without thresholds costs**
 - Areas with no deep slopes lands
 - Areas with no rocky lands
 - Areas with direct connection to urban services networks
- **Urban extension areas with (different) thresholds costs**
 - Areas with deep slope lands
 - Areas with rocky lands
 - Areas that need a new urban service network

Thresholds costs estimation are classified according to the “building capability” of every analysed area; i.e., the capability of each area to build new dwellings (number and type of dwellings).

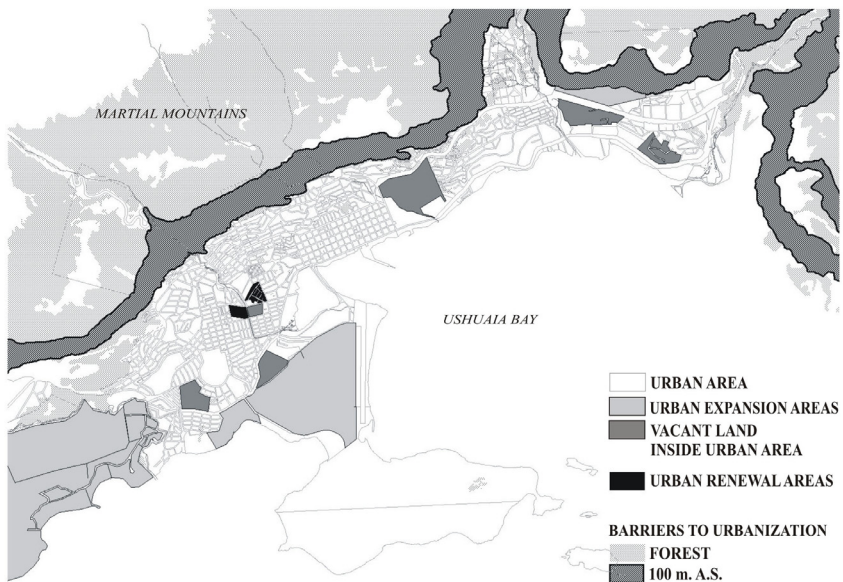


Figure 1: Map of Ushuaia with urbanization areas.

4 Evaluation of urban expansion areas

The purpose of the evaluation of selected places (inside urbanization barriers) was to establish a rank-order according to their thresholds costs and to their positive values.

Threshold costs ranking was carried out defining three values for different considered aspects:

- 0 – when there is no threshold cost
- 1 – when threshold cost is moderate
- 2 – when threshold cost is high

The sum of values awarded to each considered aspect represents the total threshold cost for each one of the selected places. This allowed identifying those of preferable urbanization because of smaller threshold costs.

Positive aspects for urbanization (residential use) were also defined by three values that act inversely to thresholds values:

- 0 – when positive factor is not found
- 1 – when positive factor is in a limited way
- 2 – when positive factor is in its best situation / conditions

The sum of values awarded to each considered aspect represented the whole of positive factors for each one of the selected places. This allowed identifying those of preferable urbanization because of bigger values of positive factors.

For each situation – ranking of threshold costs and of positive factors – technical specifications were recorded reflecting the opinion of the population in occasion of work meetings.

4.1 Ranking thresholds costs

The record table designed for evaluation of thresholds costs gave a qualitative approach to the problem, starting from opinions of local professionals (among them, those that belong to public services companies technical staffs or that belong to municipal technical teams).

Although an accurate cost study could be advised, this qualitative approach was very useful for going on with planning process.

For this evaluation three big questions were considered.

- Soil features, considering geomorphology of the place (slopes types) and its estratigraphy (land type, related with additional costs that implies building under those specific conditions).
- Conditions of infrastructure services, evaluating connection to existing networks and new connections demanded.
- Accessibility conditions, as long as existence of linking streets to different sectors in the city and its treatment and maintenance conditions.

4.2 Ranking positive factors for residential urbanization

Positive features for dwellings were then considered, and also the connection of selected places with urban structure. As qualities of the place, environmental



features (orientation relative to sun radiation and no or rare windy conditions) and landscape features (own landscape condition of places and visuals to urban and natural environment) are considered. On the other hand, urban location evaluation deals with present and potential connections with different sectors within the town, the relationship with Ushuaia's central area (commercial and institutional centre), accessibility to green and leisure spaces and accessibility to education and health services.

4.3 Ranking social acceptance of places to be urbanized

This approach was incorporated after one work meeting with members of the Planning Board. The objective was to measure social acceptance of urbanization of certain places (urban renewal areas, vacant land inside urban areas, vacant land at city borders).

4.4 Ranking procedures for areas selection

Ranking places for urbanization was carried out by collective discussion. Three instances of workshops were carried out with:

- the planning board;
- technicians of public and private companies linked to infrastructures, researchers and NGOs involved with environmental studies and protection actions;
- Architect's Council.

After these workshops the following definitions clearly arose:

- places (expansion areas) located beyond river Pipo (the farthest West Side) were those of higher thresholds costs;
- places (expansion areas and vacant land inside urban area) located in East Side were those that followed with high thresholds costs;
- places with lower threshold costs were vacant land inside urban area and expansion areas located in the West Side;
- those of higher value for positive factors for urbanization were vacant land inside urban area and urban renewal areas.

4.5 Building capability of selected areas

After urban expansion areas were selected, their building and demographic capability was calculated. For this purpose half of the available surface of selected area was considered (it was assumed that 50% of surface area are public spaces, such as streets, avenues, parks and pathways). Also, two dwelling types were considered according to different density conditions:

- Individual dwelling (parcels of 110 sqm).
- Individual dwelling (parcels of 220 sqm).

The same number of inhabitants per house that shows 2001 Population National Census for Ushuaia was considered.

With this criteria, when 110 sqm. parcels were considered for the fourteen selected places (expansion areas, vacant areas, urban renewal areas) they could



contain 102,561 new inhabitants (more than twice the current population of Ushuaia). On the other hand, when 220 sqm. parcels were considered, for the same number of places, the new population to be located was 56,408 inhabitants.

Finally, places selected for a first urbanization stage, were:

- vacant areas (Navy Base, “Vialidad”, Gallinero Hill); and
- urban renewal (Admiral Brown Estate, Colombo district)

In both places, 10,834 new inhabitants could be located (considering 110 sqm. parcels), almost a quarter of current population.

In the event that the peninsula expansion area would be added for urbanisation, 48,272 new inhabitants could be located, almost the same number of Ushuaia's current population.

5 Conclusions: urban plan and city management

Three years after Ushuaia Urban Plan was approved, evaluation of local authorities action shows positive and negative aspects. Plan elaboration procedures helped to institutionalize planning as a municipal policy and as a technical tool to organize the town more efficiently. Public involvement in plan elaboration, diagnosis agreed by consensus and projects identified by collective discussion, are tools that legitimate an urban plan. As a consequence, the urban plan became a social contract between community and authorities.

Now there is a stronger intention to exercise control on illegal land appropriation, mainly in those areas excluded for urbanization, as it is indicated in the Ushuaia Urban Plan. The plan is shown to be a useful tool to encourage authorities to do it. The Urban plan became a clear technical argument to assume political decisions.

Even though “intrusion” is a non-eradicated social practice and conflicts between provincial and municipal authorities help this practice to continue.

Ushuaia Urban Plan also helps the Municipality to get in contact with the Argentine Navy to look for a better way to urbanize the Navy Base, a big portion of vacant land in the middle of the town. A first meeting showed that both institutions are looking forward to negotiating the future use of Navy areas according to urban plan guidelines approved. A master plan for the Navy Base and dwellings for Navy staff in the Peninsula area are the main tasks to be carried out, but they have not started yet.

Urbanization of vacant land inside Ushuaia according to urban guidelines is the main objective of local authorities, but this is an enterprise still to come. Colombo district was recently appropriate for newcomers. The ‘Vialidad area’ is going to be sold in spite of a first agreement between local and national authorities to urbanize it.

On the other hand, revisiting Threshold Analysis Theory was appropriated for working with social sectors. It was a ‘scientific’ way, easy to be understood by the population, and became a proper procedure in this planning practice.

Lastly, planning experience in the last three years shows that an urban plan is useful as a technical reason for city management policies. But technical arguments or technical proposals without political growth are not enough.



In Ushuaia, the urban plan is shown to be useful, but without a serious agreement between provincial and municipal governments this initiative will be helpless, even unnecessary, to control and guide urbanization process.

References

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