

Name: Alejandra Salas

Institution: Pontificia Universidad Catolica de Chile

**THE ROLE OF SYSTEMATISED INFORMATION IN THE PLANNING PROCESSES
OF THE SANTIAGO METROPOLITAN REGION- (RMS): THE CASES OF THE 2008
PROPOSED UPDATE OF PRMS**

Efforts to build sustainable development indicators from the publication "Our Common Future" Brundtland Report (1987), have had in the world, different expressions that allow us to take a picture of phenomena, events and changes of development processes in certain moments and in different parts of the world. These indicators reflect rates in particular processes or figures, and allow you to construct scenarios to better plan development process. The experiences carried out show that from the perspective of sustainable development, it has been worth the systematization of information across indicators. These efforts have aimed to generate systematic information to provide input into the decision-making processes for development planning and the creation of new and appropriate targets to improve the quality of life. Understanding the value of information and the importance of planning in the development process the Chilean State has invested considerable efforts to create institutions that generate and manage information, such as the National Environmental Information System 1998 (SINIA), which aims to meet Law 19,300 of General Bases of the Environment, and maintain a national system of environmental information, the information broken down regionally, the public order, or the Center for Natural Resource Information (CIREN), which operates more than 45 years managing information natural resources, in particular: water, soils, climate, forest and fruit, and today in support of the Chilean Space Agency in the administration of information and interpretation of satellite images, and finally as the National System of Territorial Information 2006 (SNIT), which aims to improve the management of geographic and spatial information generated by various public institutions.

1 / RESEARCH QUESTIONS AND HYPOTHESES

Government institutions responsible for planning, there is ignorance concerning the map of actors and the transfer of information between different institutions responsible for generating an engine of change in the development process. It is not known, in general how far work on a joint or autonomous in generating information, and even if the information meets a demand as an input into planning processes (Zamora,

personal communication. 2009). The research will seek to clarify these ideas, focusing on the role of systematic information, and how those responsible for decision making, seek, receive, handle and use that information (Reveiz. et al, 1977).

The question that drives this research seeks to know whether, as indicated by the objectives of sustainability indicators and the objectives of the institutions mentioned above, the information used for the systematic decision-making processes. In this sense it seeks to determine the role of systematic information in planning the development of RMS. Taking as a hypothesis the idea that while the information is systematized in a process of planning, the political nature of decisions ends up defining the objectives of planning.

2 / FRAMEWORK AND CONTEXT OF RESEARCH

Throughout the history of civilization, cities have formed spaces of knowledge and transfer of information (Webber, 1968; Fathy, 1991; Ascher, 2002). However, since the second world war, the information acquired a role never before seen in history, positioning itself as an asset of the economy and spending to determine the technologization the production, distribution and the market (Hall, 1998) and becoming a cornerstone in the generation of surpluses by their nature based on knowledge (Castells, 1995). This phenomenon represents a dramatic breakthrough in the proliferation of information begins to generate mid-1980, a massive demand for an efficient way of managing this resource and orderly. While the need to make efficient use of information left in antiquity, is massed late last century by a need for the industry and eventually become a necessity of urban planning. One of the great pressure established for the efficient management of information on urban and environmental planning, arose from the need to build a better quality environment for the development of human life (FAO, OMM, UNEP, IUCN, CMMAD).

In 1983, the president of the United Nations responsible for Norwegian Prime Minister Gro Harlem Brundtland to chair the World Commission on Environment and Development, to manage the challenges of the global community regarding the development of human settlements. In 1987 the Report of the Commission, incorporated in its arguments to promote a more sustainable development, the idea that the speed with which they can manage information science and technology can help improve the quality of life through the study of systems prevailing in the land, understanding the Earth as an organism whose health depends on the health of their parts (CMMAD, 1987).

From this basic idea for this research, in which value information as a resource to improve the efficiency of the planning process is to generate a diagnosis to know how

the information is used systematically in such processes. What is intended through research is to know specifically what role the information meets the body of systematized knowledge as an orderly and continuous in time. How to help by providing information, records or data, to set development goals and objectives.

Through research, we try to deepen in the form of storing and managing information to determine how the systematic information, such as for example, the sequences of economic growth, urban growth, real estate development and many others, are arguments in the decision-making processes and setting objectives of planning. By this analysis attempts to estimate how, where, how and when to use systematic information on these processes. Understanding the decision-making processes as an area in which different logics and values exist, determining the confluence of action and in which different views are converging on the area and its processes (Catenazzi, 2007) and establishing information networks that generated among the public institutions, the relationship between process and outcome of the planning and the challenges that might be from this diagnosis if considered as a goal the sustainable development of the RMS.

Research aims to determine through cybernetic models, what the role of the systematic information in planning urban development, through an analysis of both processes and outcomes, identifying the different stages who are those involved and what are the sources of information, and exploring in this way, the organizational structure of institutions in relation to the use of information, coverage of their databases and how this information is reflected in the instruments planning. It is intended to close the circle of both public and private institutions involved in the development of the RMS. These first results are contextualized in the framework of empirical analysis of two contemporary planning tools: the Metropolitan Development Strategy -ERD and THE Metropolitan Regulatory Plan of Santiago -PRMS. In this case we analyze the explanatory memorandum of the final proposal for updating the PRMS.

3 / METHODOLOGY

Through the methodology is to know how to build the case for the determination of planning objectives in the decision-making processes. In this case, the arguments for updating the PRMS 1994 it wants to know the sources mentioned, what is the theme and provide input to the construction of arguments. Similarly, it was aimed to update the sources.

We analyze the "Explanatory Report Update PRMS", prepared by the Regional Ministerial Secretariat for Housing and Planning SEREMI - MINVU¹ in December 2008, using the following method:

- The analysis focused on the search for hard data provided by the document through sources cited and not cited. Likewise, those data were processed by the SEREMI - MINVU of how to establish the relationship between information provided by primary sources and the generation of data, provided by the document. The reason for considering quantitative data, such as percentages or numbers of people, acres, etc.. analysis is not subject to interpretation.

- The analysis is tabulated items or types of information that provided hard data was recorded and the amount of data contributed by each subject, so to quantify information from sources.

- A table that was generated slogan: sources, types and quantity of information data from the source.

- We generated a second and third table that applied the same criterion: the data source and had no new information generated by SEREMI.

- Out of the analysis are those provided by the new data set that SEREMI within the framework of possible scenarios, but the projections were estimated from primary sources, such as population projections and demand for land.

- It dismissed the citations referring to the use of survey data CASEN² and final report of the Planning directorate- DIRPLAN because they do not indicate the information provided. While there is data whose source is not mentioned and that could correspond to the CASEN DIRPLAN or were seen as "no source", does not have a source.

- For more than one data source as the survey of quality of urban life MINVU 2008 prepared by the MINVU and the National Institute of Statistics- INE that delivers 12 data, we study the possibility of adding 6 to each data source in the item, however because it is to use the transparency of information, was considered MINVU INE + as a single source.

While it is believed that much of the information provided by the memory, is plotted through the map, for the purposes of this analysis, only hard data are those provided through the document as an argument for the update. As we advance the study aims to create a methodology to incorporate this type of systematic information.

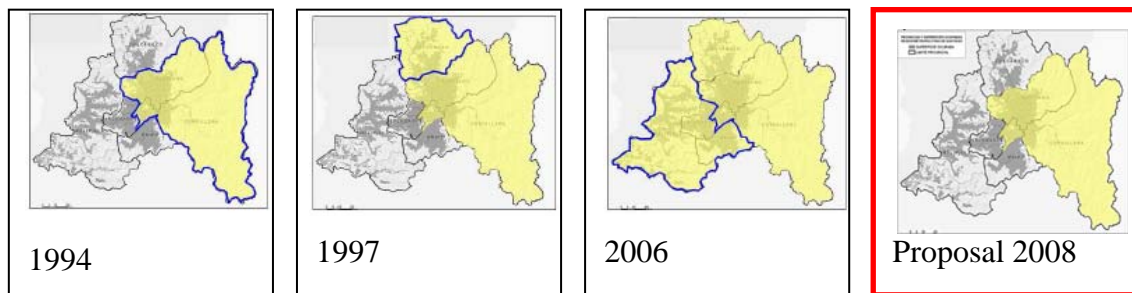
4 / FIRST RESULTS

¹ MINVU: Ministry of housing and urbanism

² CASEN: assessment survey of the ministry of planning

The PRMS is a territorial planning tool, of character normative, a policy which determines land uses and building conditions of the urban areas of the RM, which gathers 52 communes. Was enacted in 1994 and proposed 2008 update is limited to 37 communes that form the Greater Santiago metropolitan area also known as Santiago-AMS. The PRMS has undergone three major changes to that amount this year. The first 1997 incorporates Chacabuco Province and created the Urban Development Areas Conditioning- ZODUC. In 2003 a new amendment establishes the rules contained in the Urban Project of Conditioning Development- PDUC, and in 2006 SEREMI expands the area of action of the PRMS to the entire region. Its aim is to ensure a planned and responsible growth. The purpose of the amendment is to differentiate rural from urban areas, to define the trunk roads and express, identify green areas zoned as a general land use, identify areas of risk, priority development areas, to determine average densities and regulate occupation rates of soils.

Image N°1 / Territories included in each modification PRMS



Source: SEREMI- MINVU (2008).

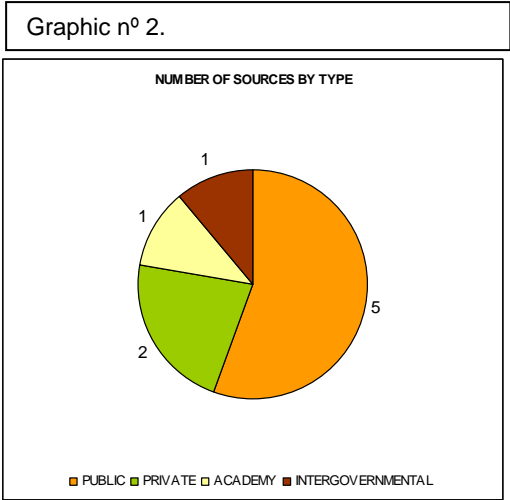
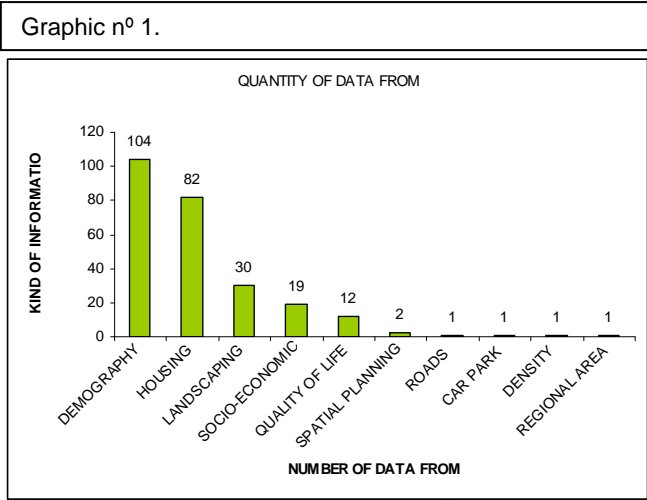
Table n° 1: Source, type and number of data founded.

ADIMARK SOURCE	KIND OF SOCIO-ECONOMIC INFORMATION	NUMBER OF DATA FROM
	CAR PARK	1
TOTAL		253
INE	HOUSING	80
	REGIONAL AREA	1
	LANDSCAPING	1
INE + MINVU	QUALITY OF LIFE	12
MINVU- PARQUE METROPOLITANO-GORE	LANDSCAPING	14
	LANDSCAPING	11
MINVU OBSERVATORIO URBANO	DENSITY	1
	HOUSING	2
MINVU- SEREMI	SPATIAL PLANNING	2
U. FINIS TERRAE + GÉMINES	LANDSCAPING	1
CONAF	LANDSCAPING	2
OMS	LANDSCAPING	1
MOP	ROADS	1

To determine the relationship between the proposed objectives and the information used, we show these initial results to determine how this relationship is.

Nine are the information sources that provide hard data for the construction of the plot of the 2008 update PRMS, these are: INE, MINVU, Regional Government- GORE, Finis Terrae University- UFT, Gemine Consultant, National forestry Corporation- CONAF, World Health Organization- OMS, Ministry of Public Works- MOP and Adimark Consultant. It should be

noted that MINVU reported across three states are: the Urban Observatory, the Metropolitan Park and SEREMI. The issues referred to the information from these sources are: demography, housing, regional area, landscaping, quality of life, population density, land use planning, road construction, automotive and fleet socioeconomic data.



Source: Prepared by Alejandra Salas

Demographics and housing are topics provide more information and for determining the location of new urban growth areas. Of the 253 data used for these nine sources, SEREMI build 110 new data on two new topics which are: land use and location of socio-economic sectors. The data source that does not explain there is only one precedent in the areas of drinking water infrastructure and sewer.

% OCUPACY OF LAND - The topics are generally covered by a single source with the exception of the housing issue is addressed both by the INE for the MINVU and the topic of green areas scattered in six sources of information: INE MINVU, GORE, UFT, AND WHO CONAF . The largest amount of data is provided by the INE and in some way by the MINVU. However, analysis of primary data, generates a large amount of secondary information

Table n° 2: relation between data and objectives

OBJECTIVE	DATA ANSWER
DIFFERENTIATION URBAN AREA / RURAL	-
MOTION EXPRESS roads and Trunk	2
DETERMINATION GREEN AREAS	30
ZONING LAND USE	253
DEFINITION OF RISK AREAS	-
ZONES OF PRIORITRO DEVELOPMENT	120
AVERAGE DENSITIES	2

which would be formed by the fountain MINVU, as this is who makes the proposal to upgrade. To answer to the objective of differentiating urban and rural areas, is clearly not a relationship between the data and the proposed upgrade, the same goes with the aim of defining risk

areas. To set the express roads and trunk only one source provides two data, although it is considered that the road projects and critical points, not to mention which of these backgrounds allow the proposal.

To determine green areas are used as many sources that provide a total of 30 hard data to make decisions. The largest amount of data used for those who would meet the objective of zoning or land use, since all the data to help determine the proposed use, but excluding the proposed density and% of land take, all the others have to do with zoning. As though all the data used to generate a proposal for zoning, there are no hard data to make decisions regarding the differentiation urban - rural areas and the definition of risk. To identify areas of priority development INE data is used to differentiate the areas of Greater Santiago Interior, the peripheral and the rest of the region, which together cover 102 hard data related to location, the series and projections of population and the historical ranking of population growth. Most of the findings in relation to this objective, resulting from the crossing of information with socioeconomic data from INE Adimark which creates a new item with new data generated by SEREMI. To determine the density are used 2 hard data of MINVU, concerning projected densities. In relation to the percentage of land occupation, not stated criteria, or used sources, or data. This is particularly curious given that the main objectives of the instrument are to determine land uses and building conditions, those conditions of a building is the definition of% of land occupation.

Early results indicate that the explanatory memorandum, use and builds a good amount of hard data in relation to land use, but does not reach all its dimensions. Not the case with the determination of land occupation.

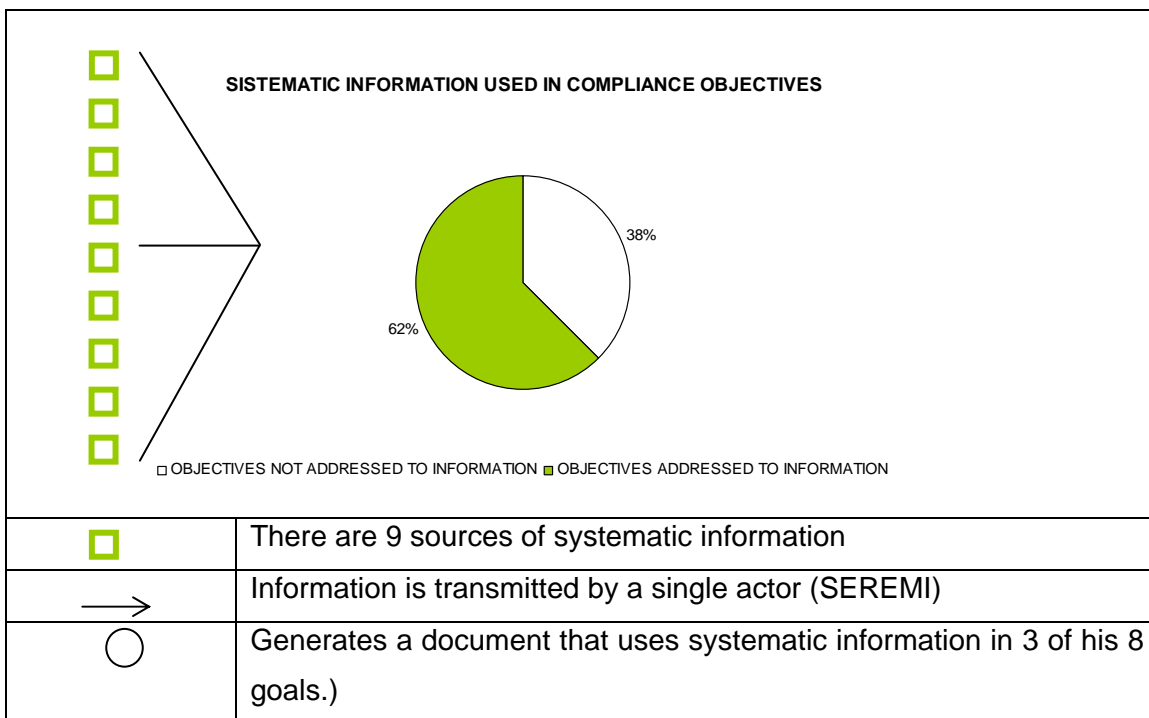
Large amount of data directly from the sources, is processed through calculations and computer programs to obtain new information that does not necessarily correspond to hard data. Additional mapping information is generated, such as cones of segregation of Greater Santiago. All this processed information to conclude that: it requires a more integrated city, with more landscaping and better connected. But to answer three of the eight goals set by the auto SEREMI no hard data are used and therefore, one wonders what criteria will be responded to these objectives.

Applying the theory of cybernetic systems and models, we can say that the information system of the explanatory memorandum of the Proposal Update PRMS is constituted as follows:

	Proposal 1994	Proposal 1997	Proposal 2003	Proposal 2003	Proposal 2008
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Components of the proposal				
<input checked="" type="checkbox"/>	Explanatory				

Source: Prepared by Alejandra Salas

From the model of Beer (1966), the schema that is generated from hard data from sources of systematic information is as follows:



5 / PESPECTIVE

The investigation followed over time could determine whether the information as a tool, is capable of reducing uncertainty, transforming knowledge structures of individuals and groups or to identify forms of organization and planning. At the same time, could serve as input for the generation of a strategy to implement an integrated information system as input to practical and operational progress toward sustainable development, for example, sites of administration and information modeling Internet EIA-Energy Information Administration or Gapminder Community. The goal is always the same: to define how information is or not an instrument of equity, in matters of common good,

which is particularly important if we are to move towards a more sustainable model of development.

6 / TOPICS FOR DISCUSSION

There are very few works that address the relationship between the use of information and planning processes and also link this issue with concepts of sustainability. In general the studies that they value the information as a resource for systematic planning are closely linked to economics and business administration. During the 1970s and 1980s developed a number of studies seeking to determine the role of information in planning processes. During the 1990s, virtually no work to realize this, but during the decade of 2000 the issue has returned to the research. Emerges as a topic of discussion, whether this phenomenon is related to the Internet, as a medium of mass communication that could have collapsed in many areas of knowledge information. This question provides the framework for the use of technologies for the efficient information management.

7/ BIBLIOGRAPHY

- ASCHER, Francois (2002). *Les Nouveaux Principes de l'urbanisme. La fin des villes n'est pas à l'ordre du jour*. Editions de l'aube. Francia.
- BEER, Stafford (1966). *Decision and control: the meaning of operational research and management cybernetics*. London Wiley. Londres.
- CASTELLS, Manuel (1995). *La ciudad informacional, Tecnologías de la información, reestructuración económica y el proceso urbano- regional*. Alianza Editorial. Madrid, España.
- CATENAZZI, Andrea (2007). *La Planificación Urbana desde las decisiones tomadas: un análisis de lo que esta en juego en las intervenciones que se concretan*. Ponencia presentada al 30° encuentro de la Red Nacional de Investigación Urbana llamada Pensar la ciudad: miradas y desafíos a la realidad latinoamericana. 17- 19 octubre. Puebla, México.
- CMMAD- Comisión Mundial del Medio Ambiente y del Desarrollo (1987). *Nuestro futuro común*. Madrid Alianza. España.
- FAO- Organización de las Naciones Unidas para la agricultura y la alimentación. En: http://www.fao.org/index_ES.htm
- FATHY, Tarik (1991). *Telecity: information technology and its impact on city form*. Praeger. New York.
- HALL, Peter (1998). *Cities in civilization. Culture, Innovation and Urban Order*. Weindelfeld & -Nicolson. Londres.
- MINVU- Ministerio de Vivienda y Urbanismo (2008). *Actualización del Plan Regulador Metropolitano de Santiago, memoria explicativa*. Recetaría Regional Ministerial.
- OMM- Organización de Meteorología Mundial. En: www.wmo.int/pages/index_es.html
- PNUMA- Programa de Naciones Unidas para el Medio Ambiente. En: www.pnuma.org
- REVEIZ, Edgar et. al (1977). *Poder e Información*. Centro de Estudios sobre Desarrollo Económico- CEDE. Facultad de Economía, Universidad de Los Andes. Bogotá, Colombia.
- UICN- Unión Internacional para la conservación de la naturaleza. En: www.iucn.org
- WEBBER, Melvin (1968). *La era postciudad*. En: Ramos, Ángel (ed.): *Lo urbano en 20 autores contemporáneos*. Universidad Politécnica de Cataluña. Barcelona, España.
- ZAMORA, Fabiola (2009). División de planificación y desarrollo regional- Gobierno Regional RMS. Conv. Pers. 17 Abril de 2009. Pontificia Universidad Católica de Chile.