

## Planning with Community Vision of Fontana (Argentina)

### 1. Introduction

The city of Fontana has 26,745 inhabitants and is part of Great Resistencia Metropolitan Area (GRMA) with 359,590 inhabitants (National Census 2001). It is located in the Province of Chaco –in the North East of Argentina- seven kilometres west of Resistencia, its capital city.

As a result, these cities together with Barranqueras and Puerto Vilelas constitute a solid urban region known as Great Resistencia Metropolitan Area (GRMA), physically and functionally integrated. According to data of the census 2001, Fontana has the highest growth rate of the area, absorbing a great part of the population increase rate between 1991 and 2001 (85.2%). See chart 1.

This town has grown over natural environment composed of two river basins: Negro and Arazá, together with other important components of natural ecosystem whose environmental situation is lead into flooding vulnerability. This situation leads into the loss of natural capacity of drainage, resulting in settlement developments on flooding surface of the rivers and lagoons, because people either fill some of them with different materials, close the natural linkage between them or pollute the water resources by diverse human actions. (Scornik C, 1998).

Historically, Fontana has had an important role in the economic development of the GRMR as an industrial zone promoting the urban growth, connecting the existing railway system to the road system. From its beginning, the city has grown around the tannin factory, next to Fortini lagoon. In 1916 the Spanish Fontana brothers arrived in this zone and settled down a tannin factory, originating the current urban downtown.

In 1931, the factory was bought by “*La Forestal*” (a multinational company) which closed in 1970, leaving an important historical heritage. In 1959 the Municipality of Fontana was created within a surface of 800 hectares. In 1970 the Industrial Park of Fontana was designed, promoting the location of small industries in the area, giving the industrial identity that it has today.

The characteristic vegetation of the area includes native subtropical forests called “Wed Eastern Chaco”, a part of “*Chaqueño Park*” with grassland and very high and low tree species.

The weather of the area is “subtropical, warm and humid”. The average temperature is about 21°C, oscillating between a minimum of 2°C below zero in winter and reaching a maximum of 43°C in summer. There is a rainy season from May to September and from November to March as well. The North wind is the most common in summer. It’s dry and warm, but in winter it is cold and comes from the South. Most part of the year it has a humidity of 80%.

Although these conditions are influencing the landscape, allowing the development of a wide range of natural species, some difficulties arise from the combination of hot weather and air pollution and it makes the habitability of the zone difficult, mainly in the sectors affected by the smoke of the brick factory, the dust from the streets, the smell from unpipe-sewerage systems, - which sometimes pollute underground water - and waste disposal in the

open without going through any process, etc. In other words, human activities contribute to have deep environmental impacts and degradation of the landscape.

The right hand bank of the Negro River is affected by the urban activities. Some of the causes of its pollution are: 1) The settlements located on both banks of the river drain untreated sewerage water, together with waste disposal; 2) the brick industry undermines its margins in search of land as raw material; 3) the housing market fills its margins with the consequent obstruction of natural water-drainages. Although there are some programs focused on environmental education to minimize those issues, the municipal garbage collection is not done periodically and there are not any waste containers available or they are not the suitable ones.

The population is composed by a high rate of people with low income level, (Trabalón, 2004). Concerning the economic activity, a great amount of informal occupation and unemployed people can be found, according to data of 1998. Meanwhile, people who have formal jobs are working mostly in Resistencia city as civil servants, construction workers, or cleaning staff. Very few inhabitants have jobs in Fontana itself, working in the brick and furniture manufacture or in sawmills. On the other hand, housewives or women in charge of families generally work in retail activities or they are unemployed and receive grants from the State. Finally just a few works on farms, that often generate products for their own subsistence and there are some isolated cases of activities such as scrap iron sale and recycling of plastic. See table 1.

Table1: Population activities

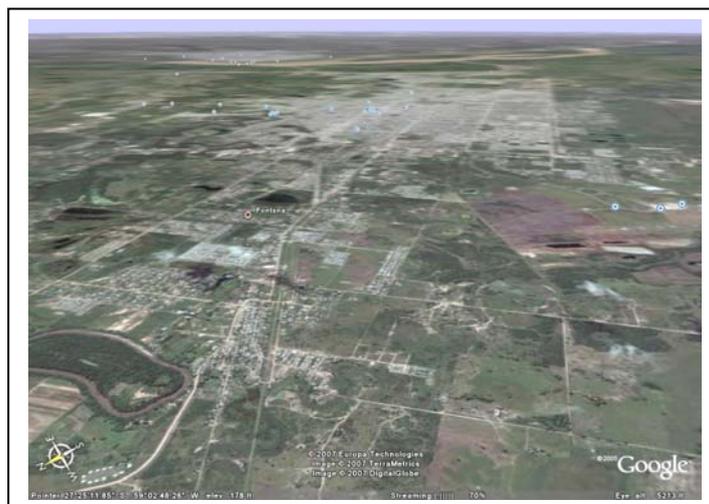
<b>Employment type</b>	<b>% Workers</b>
Employees	15%
Retail shopkeepers	1%
Retired	2%
Housewives	From 5 % to 10 %
Housekeeping	From 1 % to 8 %
Informal employment	More than 60 %
Unemployed	From 9 % to 15 %

Source: Diagnóstico Urbano Expeditivo del AMGR. 1998

Furthermore, “Fontana consists of approximately 800 hectares urbanized, 50 of which are used by the Provincial Industrial Park and remain 50 are rural land, with different productive activities” (Godoy, Scornik M, Trabalon, 2005). Its proximity to Resistencia city makes it a potential source of land market offer because this land is not affected by periodical flooding, suitable for urban expansion of GRMA. Besides, this situation will be improved with two new infrastructure projects of highways including the paving of two main accesses.

The coexistence of productive and residential activities within semi-rural areas is causing serious damages to the environment but according to Urban Ecology concepts, this phenomenon is promoting the creation of *“multifunctional landscapes, integrating ecology, people and the economy”*.

**Photo 1: Aerial views of Fontana**



Source: Google Earth web page. <http://earth.google.es/>

### ***Land Use***

The uses of the land show the urban expansion trends in an extensive way, led by the residential use mostly in low density: State housing plans (known as FONAVI) and other private developments, according to the availability of land more than the right use of it. The housing development is related to immediate housing needs without considering the natural environment and possible consequences.

According to the information provided by the Municipality of Fontana, 45% of the housing stock belongs to welfare housing programs, 41% belongs to private owners and 14% to informal settlements. These last ones are generally located in vacant or flooding plots of public or private owners, often related to subsistence activities, with no access to public streets or locate3d in railroad land. They also show a great environmental vulnerability because they are situated in areas polluted by smell, smoke and waste.

The public and private services with basic urban facilities are scattered all over the place because there is not an important administrative-institutional-commercial centre. Another problem found in the diagnosis process are the small scattered pieces of green land, whose size does not allow the location of sports and recreation infrastructure. This is the consequence of the traditional system of land subdivision used and also the pressure from the Real State market.

### ***Infrastructure and services***

Generally, the basic infrastructure networks are small and do not cover the whole urbanized area, overwhelmed by rapid urban growth. The location of housing development far from existing urban infrastructures, forces to extend the current services to remote areas, with additional cost of investment and uses.

On the other hand, several informal settlements are located in areas without basic public services and social infrastructure. Other settlements are usually connected to illegal water and electricity supplies. The black water is treated by a septic tank, or poured into the unpiped rain drainage contributing to environmental degradation.

The rain pipe drainage system does not work properly generally because of the impact of human activities. Most land is a flooding plane next to lagoons, or rivers such as the Arazá, affecting their natural drainage course. Furthermore, urban sprawl produces an excess of waterproofing on a built environment, increasing the rain water volume, overwhelming the capacity with the existing drainages.

The sewerage pipe system does not work properly either because it is also obsolete or the rapid urban sprawl of Fontana does not match the existing infrastructure networks. They not only need to have an integral sewerage system but also be connected to the main GRMA sewerage system of the Metropolitan Area.

The public transport system only covers a few parts of the urbanized area and consists of a fleet of urban vehicles and the line of Metropolitan Railway, both with little maintenance and offering few frequencies. This is why the population often choose taxis, mainly for the trip to Resistencia city and back.

The road system consists of a network of internal mud streets –laid out on a grid pattern– what makes the accessibility to most residential areas difficult on rainy days. These circumstances get worse around brick factory areas where trucks also ruin the streets. At the moment, the city has just only one paved avenue which crosses the town from East to West, in parallel to the railroad.

## **2. Background to the municipal technical assistance requirements**

Fontana shares the same socio-economic issues as the Great Resistencia Metropolitan Area (GRMA), with several external key factors in which local decisions have little importance in its development although different municipal administrations have done nothing to alleviate this situation, by defining suitable policies and strategies aimed to meet public objectives and achieve local development.

On the other hand, there is a sporadic coordination and actions between the local authorities and provincial and national government including associated organisms, whose decisions are made without any integrated regulation or public participation.

Because of the reasons mentioned above, the Municipality of Fontana lacks of urban planning practice aimed to address increasing urban expansion, including a land use regulation and a zoning code in order to allocate housing developments and related infrastructure systems. In fact, until now the new developments are addressed by a few ordinances, in some cases out of date, because they do not have a Planning Practice, a land use regulation, a rational plot division, the protection of the natural and built environment, among others.

As a result, in order to prevent further sprawl development and to control land use, the current Mayor of Fontana city, Mr. Clide René Briansó, has commissioned our University Planning team to formulate a new regulatory framework, containing a zoning code and a land use regulation, as a starting point to plan the urban region, trying to achieve a strong sustainable development. The project is supported by a University Program “*Universidad en el Medio*” approved by Resolution N' 495/05 CS. The planning team consists of professors, a young researcher and municipal employees<sup>1</sup>.

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The proposal is also related with previous studies:

- (FIVP-UNNE), (1973). "Plan of Physical Development of Resistencia and its Area of Influence" elaborated by the Department of Planning.
- Scornik, Carlos O. (1998). "Environmental Urban Diagnosis of GRMA". The "Regional Network of Urban Policies, Strategies and Local Development; the small towns of metropolitan areas through new demands of local development" (PICT NETWORKS N° 009). UNNE.
- Perez, Malena (2005). Econeighbours, Feasibility of Application in Environmental Vulnerability Zones of the GRMA.
- Otazú, Ines, (2006) Urban Infrastructure Assessment of Barranqueras and Fontana.
- Trabalón, José (2004). Urban Diagnosis of Fontana.

In other words, the purpose of the present project is to help the decision makers to take actions undertaken by the Municipality, including community participation techniques and expertise support, aimed to guarantee clear understanding of the "*key issues facing Fontana*" by establishing planning practice in partnership within the regional arena.

### 3. Methodology

#### ***The objectives:***

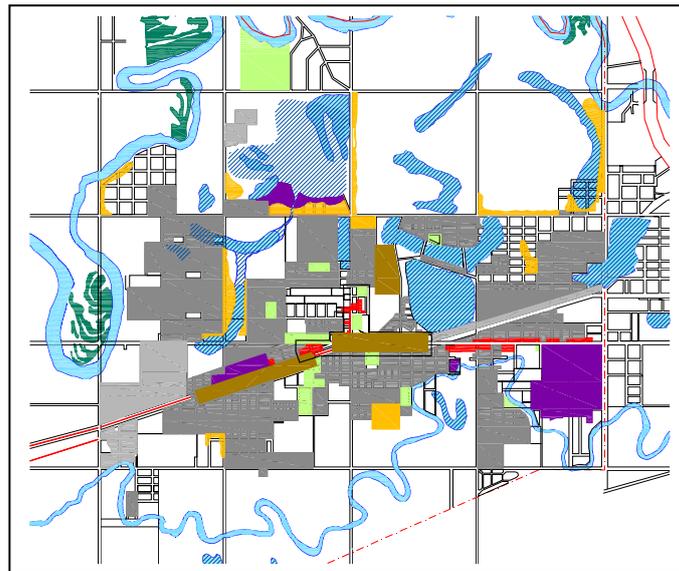
- a) To develop key strategies for effective urban planning practice.
- b) To design and discuss the definition of a Zoning Code and Land Use regulations aimed to control further development in the study area.
- c) To establish a baseline compatible with The "Provincial Planning System and Result Assessment" approved by Law number 5174 as a broad framework, by the House of Representatives in December 2002.

The chosen approach attempts to simplify the diagnosis stage, by using the information available in the Municipality, Provincial Government and Universidad Nacional del Nordeste files, such as:

- Settlement role in the metropolitan region,
- Foundation and development of the settlement,
- Demographic rate and projections,
- Characteristics of economic activities: commerce, industries, facilities and services,
- Infrastructure system: water pipe and sewerage pipe supply, pavement and railways system, energy,
- Land use and flooding areas,
- Waste collection, processing and disposal,
- Current projects, programs and investments,
- Appraisal of existing ordinances and regulations.

Further studies were carried out such as the revision of existing land uses taken into account as a baseline to discuss the physical urban patterns of the town with the citizen's help. The result is summarized in the following map:

### Map 1: Fontana physical urban patterns



Source: "Red de Políticas Urbanas"2005. (PICT REDES N° 009).

The planning team also revised the existing local and provincial regulations as a legal framework to address further actions aimed to achieve the sustainable development of Fontana city. The final proposal attempts to summarize land use regulations with some technical suggestions which must be fully discussed with Fontana citizens before being approved by the Municipality Council.

On the other hand, the proposal is also related to the "*Provincial Planning System*". It splits the provincial territory into 8 different regions, gathering groups of 68 municipalities with similar issues. The purpose is to diminish the administrative fragmentation. The Municipality of Fontana is part of the Metropolitan Region (N° 8), the most important in terms of economic, population and political issues, having 359,590 inhabitants<sup>2</sup> (36.63% of the provincial population: 984,446 inhabitants), with a density of 168 inh/km<sup>2</sup>, which means 2,16% of the provincial surface.

Finally, when our proposal is concluded, we expect the municipality to inform and discuss the results of this proposal with the citizens, so that they will be aware of the new strategies and regulations.

#### 4. Fontana Community Vision

The survey made in 2005, allowed the team to determine the first results of people's vision, followed by consultations and local authority's interviews. The next step was a new public consultation held on 31st May 2006 at the Social and Sport Fontana Club. See photos 2 and 3.

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<sup>2</sup> National Census of Population and Housing 2001.

### Photos 2 and 3: Public Consultation workshop



Public consultation. (May 31<sup>st</sup> 2006).

Public opinion was considered from the beginning as the clue to define a “*common vision*” of the city, as an important strategy to have a perception of the citizens about their community, activities and the town in general. This step allowed the identification of the needs, priorities, strengths and weaknesses of the community of Fontana for a strategic planning guidelines and a zoning proposal. The results of the first consultation process were evaluated followed by observations, corrections and adjustments according to the citizens’ expectations.

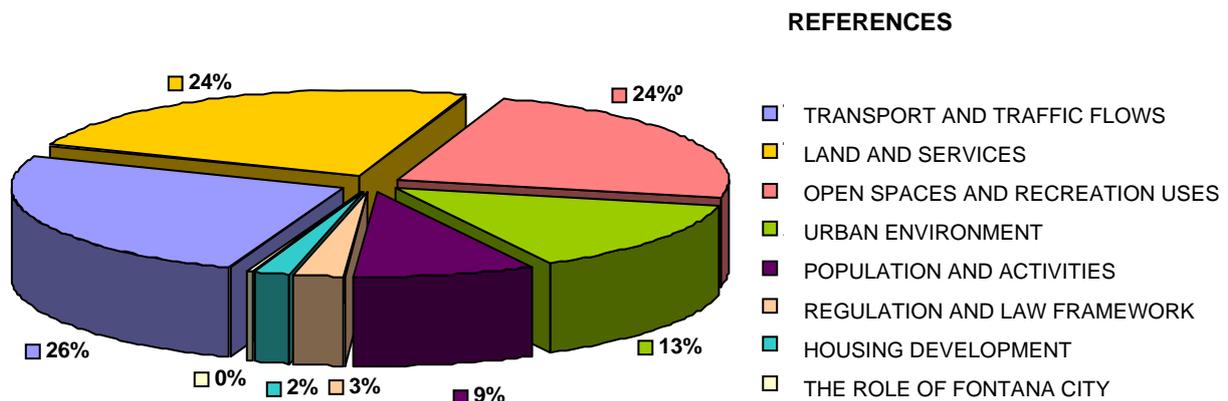
The chosen methodology combines the technical team with the inhabitants’ participation working in partnership, in the definition of their vision of Fontana, which is an innovative approach to this community. We are talking about a community with a high rate of poverty, where the key motivation is survival. For such reason, the resulting exercise must be analyzed as an important methodological achievement.

#### **Results of the survey**

From the public consultation of the University Project aimed to elaborate a zoning code, the following key factors emerged summarized in chart 1:

- a) **The role of Fontana city:** in relation to the Great Resistencia Metropolitan Area.
- b) **Urban environment:** analyzes the environmental situation of the City of Fontana, considering water supply, rain pipe drainage and sewerage pipe system, flooding areas, infrastructure and facilities.
- c) **Population and activities:** the population and its activities including education, job opportunities, economy and health.
- d) **Land and services:** analyzes quality of the services, including a pattern of current security and health.
- e) **Housing development:** affordable housing opportunities and informal settlements
- f) **Transport and traffic flows:** improvement of public transport services and road maintenance.
- g) **Open spaces:** the supply of open spaces for recreational and sports uses, including footpaths availability, urban facilities and historical heritage.
- h) **Regulations and laws framework:** municipal capacity of urban management, existing ordinances in the region area which are not enough.

**Chart 1: Main issues facing Fontana city**



Source: University Planning Team, 2006. FAU. UNNE.

***Suggestions and proposals from the public consultation***

In the consultation, Fontana citizens explained how they could help by getting involved in some issues already detected:

- Rain drainage pipes: working in partnership with the municipality to maintain the city clean and fixing drainage pipe systems
- Waste disposal management: by educating the population, telling them to respect waste service timetables and container disposal; suggesting to fine those citizens who do not keep their front yards and footpaths clean and their waste correctly disposed.
- To fine those citizens who leave their pets and horses in public spaces such as footpaths and streets.
- To improve job opportunities, increasing job diversity offers by providing construction workers to build the community service center of Fontana and also to refurbish their current building.
- To provide a training center for unskilled people who need to improve their knowledge and education.
- To tackle social issues by creating some policies focus mainly on people under the poverty line with unsatisfied needs.
- To build a new police station, located in a place where the crime rate is bigger.
- To improve health care, building a hospital, increasing the number of ambulances and controlling child abuse by sending social workers to places where the situation needs to be evaluated.
- To build shelters for the homeless, a community center, a nursing home, among others.
- To improve fire emergency equipment, by installing standpipes for underground hydrants before paving the streets.
- To increase urban facilities for the whole population.
- To improve roads and streets paving the main avenues, building a footpath along Alvear Avenue
- To improve the public transportation system, coordinating buses with the metropolitan railway and taxis.
- To place lighting equipment in public spaces where it is needed.
- To maintain the open spaces and create new ones.
- To renew the City Center and to refurbish the main historical buildings.

Finally, the public consultation attendants expressed their interest in participating in the following actions:

- As a part of the local community center.
- To educate other citizens in issues such as environmental hazards or attending different workshops.
- To improve existing roads and maintain them.
- To contribute with ideas and solutions.
- To use the media to persuade the Municipality to be aware of the main community problems.
- To prevent drug addiction among young people.
- To Inform the municipal authorities about the people's needs.
- Offer themselves as volunteer to work with and for their community, increasing the number of community centers, working in partnership with the municipality in social activities, helping to prepare some projects to apply for funding and grants, attending workshops and full participation in different community activities.

## 5. Conclusions

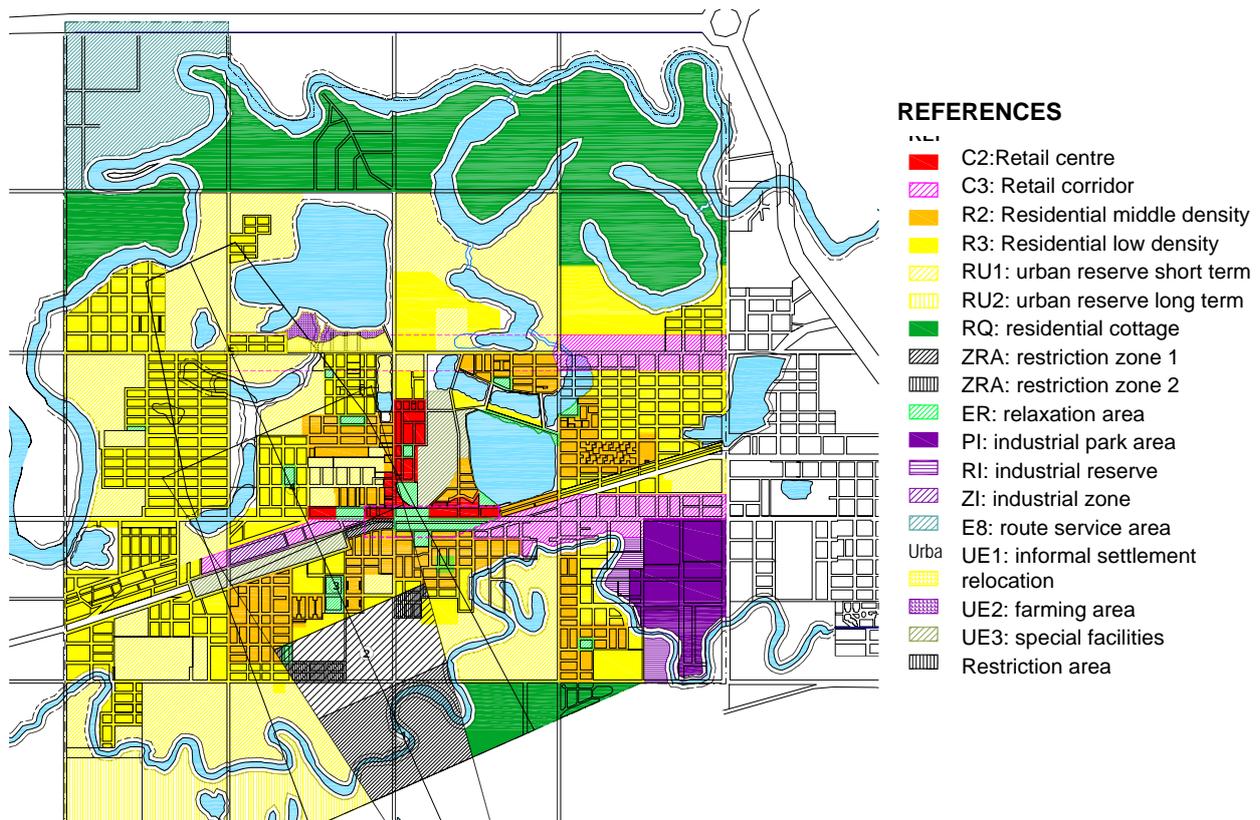
Public Questionnaires, interviews and public consultation were tackled aimed to involve every citizen of Fontana, including Non Governmental Organizations (NGOs), sport clubs and local institutions among others. The purpose was to identify the main issues facing Fontana and the possible solutions by working in partnership.

The analysis produced a visionary statement of what the community wants to be. This shared vision of the future provides a framework and a baseline for Land Use Regulations and Zoning Code proposals as a first step to start the urban planning process.

The community vision highlighted the secondary role of Fontana city within Great Resistencia Metropolitan Area (GRMA). They pointed out "*the excessive dependence from Resistencia*". For that reason, in the future, the residents of Fontana would like to have a city with job and work opportunities, reducing Resistencia dependence and improving health care facilities, affordable housing, infrastructure investment and improving the green belt, wetlands and open spaces offer, making the city livable for future generations.

As a result of the evaluation, a similar pattern of land uses were identified and summarized in a zoning draft map. At the moment, the proposal has to be revised by the Mayor, by local city councils and by public consultation as well. The referred map attempts to include the citizen and institution requirements to orientate urban growth and sustainable development. See map 2.

## Map 2: Fontana Zoning Proposal



Source: University Planning Team, 2006. FAU-UNNE

### Further considerations:

- Zoning code and environmental proposal, as planning strategies policies for Fontana Municipality, can be seen as a starting point to address future planning strategies processes claimed by the citizens.
- A set of tools and techniques were offered to the Municipality and the community, based mainly on the “citizen vision” and Local Agenda 21 approach. This could be the beginning of an innovative process for this region where public participation is considered as a key factor for urban planning practice and where there is not enough experience in this kind of community.
- Once the regulation is approved, the local authorities and the citizens will feel committed to develop further steps to put planning strategies into practice, to effectively work in partnership.
- The challenge for the community of Fontana will be related to strength public participation mechanism within the provincial and local planning system.

Finally, the planning team was able to detect some key issues facing Fontana, some of which will be tackled in a zoning code and land use regulation proposals. Meanwhile further issues must be analyzed in the future within a broad provincial planning system, mainly related to sustainable development opportunities.

## 6. References

- Assen De Oliveira, Lisete; Pesce Do Amaral E Silva, (2005) *Gilcélia: Nuevos Instrumentos Urbanísticos para la Ciudad Brasileña*. Revista Ciudades N° 66. Puebla.
- Blank, Michael. (2003). *Performing better than anticipated*. Development and Cooperation, Vol 30, N°6. Frankfurt,
- Caric Petrovic, Juana. (2004) *Gestión Ambiental de un Área Urbana Vulnerable*. Tesis de Posgrado. Maestría en Gestión Ambiental. Facultad de Arquitectura y Urbanismo UNNE, Resistencia.
- Fernandez, Roberto. Et. al. (1999). *Territorio, Sociedad y Desarrollo Sustentable, estudios de sustentabilidad ambiental urbana*. Ed. Espacio, Buenos Aires.
- Franchini, Teresa: Scornik, Carlos Osvaldo (1997) *Urban Settlements in Areas of Natural Risk - The Case of the Greater Resistencia Metropolitan Area, Argentina*. Working Paper en Risk Assessment and Management: Planning for an Uncertain Future. Ed. ISOCARP, Ogaki, Japan.
- Godoy, Susana; Scornik, Marina, Trabalon, José. (2005). *Ordenamiento y Gestión de Territorios Vulnerables, el caso de Barranqueras y Fontana*. Ed CIFOT, Mendoza.
- Maldonado Copello, M. Mercedes. (2005). *Recuperación de Plusvalías. Fundamentos Etico-Políticos, Enfoque Jurídico y Articulación con las Normativas Urbanísticas*. Ed Lincoln-Institute- INVICO, Corrientes.
- May, Peter. et. al. (1996). *Environmental Management and Governance, Inter governmental approaches to hazards and sustainability*, Ed. Routledge, London.
- Otazú, Inés. (2005): *Infraestructura Vial de las Localidades de Barranqueras y Fontana*. Ed. FAU-UNNE, Resistencia.
- Papparelli, A.; Kurban, A.; Cunsulo, M. (2003) *Diagnóstico Ambiental de Ecosistemas Humanos*. Ed. Área de Arquitectura Ambiental, FAUD, Universidad Nacional de San Juan. San Juan.
- Perez, Malena. (2005). *Ecobarrios Factibilidad de Aplicación en Zonas de Vulnerabilidad Ambiental del AMGR*. Ed. FAU-UNNE, Resistencia.
- Red De Políticas Urbanas. (2005) *Estrategias Regionales y Desarrollo Local, las pequeñas localidades en áreas metropolitanas frente a las nuevas demandas de desarrollo local y regional (PICT Redes N° 9)*, Rosario, Argentina.
- Schneider, Valeria. (2005). "Current Practices and Techniques in Urban Growth Management". NALARS-Jurnal Arsitektur FT UMJ- Architectural Journal Department of Architecture Faculty of Engineering University of Muhammadiyah Jakarta - Volume 4 Number 2, Pages 195-214- Jakarta. ISSN: 1412-3266
- Scornik, Carlos Osvaldo (1998) *Diagnóstico Urbano Expositivo del Área Metropolitana del Gran Resistencia*. Sub-Unidad Provincial de Coordinación para la Emergencia del Chaco y Secretaría de Asistencia para la Reforma Económica Provincial del Ministerio del Interior de la Nación: Programa de Protección Contra las Inundaciones, Resistencia, 3 volúmenes.
- Scornik, Marina (2003) *La Problemática de los Asentamientos en las Diferentes zonas de Vulnerabilidad Hídrica del Gran Resistencia y su Encuadre Legal-normativo*. Secretaría General de Ciencia y Técnica UNNE.
- The Royal Town Planning Institute – ECOTEC (1998) *Research and Consulting: Planning in Partnership, a guide for Planners*, London.
- Trabalon, José. (2004). *Diagnóstico Urbano de Fontana*. Exposición Primer Seminario de la Red Políticas Urbanas, Resistencia.

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