

Optimization of Use of Vacant Land for Urban Agriculture in the Municipality of Rosario, Argentina

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Introduction

This article describes the results of a process of baseline studies, participatory consultation and action planning developed in the city of Rosario (Argentina) with the purpose of providing poor families with secure access to vacant lots for farming. The process, implemented in September 2002, has led to the formulation and institutionalization of an enabling regulatory and legal framework. It was promoted by the local government of Rosario, non-governmental institutions, universities and the community. Currently, 10,000 families are involved in the urban agriculture program, and occupy more than 60 ha of private, institutional and municipal land.

1. Background

1.1 Context

The city of Rosario (Argentina), with 17,869 ha, lies in the core of the Metropolitan Area, which bears its name. According to preliminary data from the National Population Census of 2001, it is ranked third among the most populated cities of the country. According to the same source, it has a population of 1,164,800 inhabitants.

During the last thirty years, the systematic enforcement of neo-liberal policies and the opening of markets has led to the economic failure of most of the industries located in the area, as well as to the disappearance of a large number of small and medium enterprises historically relevant as important sources of employment.

The belt around Rosario grew over time as an area with irregular settlements, mostly inhabited by groups of poor families, as result of the level of unemployment in the region and a strong rural and urban immigration from provinces in the north of the country.

Unemployment and its effect on the lack of social coverage for growing groups of the population fostered activities conducted by several NGOs that progressively assumed a greater role in social development programs, with UA as one of the key axis of their work. On its part, the municipality progressively transformed its development experiences into social programs and policies aimed at tackling the situation of these sectors excluded from the formal labor market.

As in many cities in Latin America and the rest of the world, Urban Agriculture activities arrived in Rosario hand in hand with the economic crisis.

One of the strengths of the city for the development of urban productive activities is the existence of numerous public and private vacant lots that can become suitable production areas for groups of poor families. Within this framework, facilitating land access and tenure of these productive spaces to low-income sectors is a key in order to achieve their social inclusion in society.

1.2 The Optimization of the use of vacant land for Urban Agriculture programme

This paper outlines the state of advance of the tasks developed to meet one of the objectives set by the municipality of Rosario, being **“The Optimization of the use of vacant land for urban agriculture through participatory planning and management plans, to promote municipal food sovereignty and participatory governance”**. Resulting interdisciplinary proposals and policies, elaborated on the basis of the analysis and interpretation of present structures of land occupation and use, are aimed at including and promoting UA-related activities within the framework of local public policies.

The activities are promoted within the context of a project that is simultaneously being carried out in three cities in the region: Governador Valadares in Brazil, Cienfuegos in Cuba and Rosario in Argentina, promoted by the Urban Management Program for Latin America and the Caribbean (UMP- LAC) as part of the United Nations Program for Human Settlements UN-HABITAT and the United Nations Development Program (UNDP), the International Development Research Center (IDRC) of Canada and IPES – Promotion of Sustainable Development (Peru).

In the city of Rosario, the project is being co-ordinated by the Municipal Urban Agriculture Program, which is implemented by the Secretariat for Social Promotion of the Municipality of Rosario, the Center for Agro-ecological Production Studies (CEPAR) and the Center for Human Environment Studies (CEAH) of the School of Architecture, Planning and Design of the National University of Rosario.

Other community based institutions and NGOs such as Nacimiento, which has actively participated in the development of the participatory base line study and consultations, have also joined this initiative.

Within the institutional framework, the development of the project enabled the inclusion of several municipal departments involved in the management of urban land, such as the Secretariat of Planning through the Master Plan, the Public Housing Service, the Parks and Gardens and the Topography and Cadastre Offices. The strong involvement of the team of the Master Plan of the city has resulted in a notable boost of the project.

The work was accomplished out of a comprehensive point of view, by which the use of land in urban areas is considered as a dynamic and complex process, where many variables inherent to the various dimensions of social development interact in the same territory. An attempt was made to face the challenge represented by the optimization of the use of municipal land for Urban Agriculture with an open mind, analyzing the social and productive as well as the esthetic and environmental potentials thereof in the specific urban context of Rosario.

To achieve this objective it is worth noting that Urban Agriculture (UA) is seen as the spontaneous practice of diversified collective production, extended in most Latin American cities, and strategically integrated in European cities. It can co-exist with other kinds of activities (residential, recreational, educational, etc.) and fulfill a training function, preserving at the same time green areas that provide environmental services. In addition to the primary advantages related to providing jobs and food to poor social sectors, its main quality is that it is a suitable technology that can be appropriated by underprivileged groups, given the low inputs it requires and the fact that it makes good use of available idle resources (vacant land, unemployed labor, abandoned infrastructure, organic waste).

1.3 Vacant land in the city and its productive use

The city has a large amount of free or partially free land (in total 35% of the municipal area), much of which has the potential to be used for UA given its closeness to marginal settlements and existing housing projects. In fact, a high percentage of urban gardens –spontaneous or fostered by the municipal Urban Agriculture Program – are located in these areas and are managed by the population living in irregular settlements or shantytowns.

Most of the parcels currently used for UA were peacefully “taken” by the people (“peaceful usurpation”) or obtained from public entities or the municipality under an Ordinance that promotes the temporary assignment of public and private land for community and productive use.¹

The ordinance proposes the establishment of community gardens on public and privately owned land. In the first case user permits may be obtained from the relevant authorities. In the second case, owners are invited to facilitate the use of vacant lots in the framework of the Community Garden Program, to assign free of charge the temporary use thereof to the Municipality of Rosario, for the duration of two (2) years. During this period the private owner is exempted from paying property taxes over the land. (See the full text of the Ordinance in the Web page of RUAF (www.Ruaf.org/E-conferences))

However, we must take into account that many of these vacant lots have been degraded as a result of numerous urban productive and metabolic activities, that others have been allocated to future that prevent them from being used for UA or that limit such use, and, in other cases, that their location would make their social and productive efficiency unfeasible—at least in the short term.

Therefore, it is important to carefully analyze the situation of unused urban and periurban land, with the purpose of determining its potential for UA. To do this, we have to define –within the framework of the urban reality of each parcel– the variables of interest inherent to the issue of land for UA in its various dimensions, collect data characterizing them, and arrange organization and interpretation thereof. This has been done by developing participatory base-line studies which allowed to detect the situation of UA in the city, and studied the potential of using non-built up land to sustain such activities.

For Urban Agriculture to be considered in the formal planning of the city, we need to understand its logic and the dynamics of its management, location and operation, as well as its suitability and accessibility, in order to base implementation prospects on viable activities that will be socially, economically and environmentally profitable.

In order for new areas destined to UA activities to become urban productive spaces, we must have reliable and up-to-date information that will allow us to reach consensual decisions on the type of land to be used, and how and for how long it can be destined to UA activities within the framework of the present urban policy model.

It is worth noting that the magnitude, the dynamics and the positive impacts produced until now by the process of inserting Urban agriculture in physical planning and land use management processes in Rosario (both programmed and spontaneous), constitute important arguments to formalize the organic integration of UA as a public policy. The interest shown by municipal planning areas to become involved in this experience is an indicator thereof.

¹ **ORDINANCE N° 4713**
Municipal Community Garden Program (managed by the Secretariat for Social Promotion)

2. Diagnosis and planning of land use

2.1 Theoretical and methodological concepts

During the first phase of the work, urban and city planning information was collected and organized through participatory base line studies to serve as a basis for the definition of an Action Plan that would highlight new strategies for optimization of the use of land for UA. The following theoretical and methodological concepts² of reference for this land study were discussed and agreed on:

- **“suitability”** (whether or not the land parcel qualifies for UA), and
- **“accessibility”** (whether the management thereof is viable or not).

The characterization of the variables inherent to these concepts and the relations established between them will determine **“degrees of suitability and accessibility of urban productive land use”** that can change or be modified over time.

To define the **suitability** of the land, the following significant variables were selected:

- **environmental quality** (chemical and biochemical condition of the soil),
- **area** (based on technical agronomic - productive considerations),
- **uses** (current and previous—the latter only if used as dumps, or if they have been used for other polluting activities, as treatment plants, or other hazardous activities)
- **current regulations for land use,**
- **programmed urban and city planning projects,**
- **water supply,**
- **relative position** (with respect to population groups interested in UA)
- **ownership** (logic of occupation according to type of ownership).

Based on the suitability of each plot (defined by the characterization of and the relationship between the variables listed above), in order to plan the use of land, we need to analyze the **“degree of accessibility”** thereof. The variables considered relevant for the definition of the “accessibility” of land for UA are:

- **legal status of the land,**

To determine the degree of accessibility of the land according to the management possibilities it allows, we need to find out and interpret the ownership and administrative status of the plots that have been identified. In fact, a significant percentage of the real estate of the city is subject to juridical-legal proceedings (bankruptcy, unknown owner, etc.); others are part of the stock of public land (donations, expropriations), or –as in the case of land currently or in the past owned by the railway company– has been sold, leased or assigned to other institutions or persons. Each one of these situations can facilitate or cause difficulties in the management of the land and for this reason they must be studied.

- **current regulations of access and tenure of land for UA,**

The existence and scope³ of duly regulated ordinances that foster, promote and formalize the assignment of land for alternative productive enterprises– such as Urban Agriculture- is a significant factor for the determination of accessibility.

(²) These concepts and their corresponding variables were defined by consensus during the participatory workshops held with gardeners and municipal officials (see participatory consultation below)

(³) To the type of land to which each regulated ordinance refers.

- **fiscal debt,**

The identification of plots with fiscal debt is a significant resource to include in land management strategies, as –associated to appropriate regulations for access and tenure – it facilitates negotiation processes between the land owners and local government.

- **public policies,**

Within the framework of public policies, the following data are considered important:

With reference to urban projects planned in plots of interest for UA:

- validity of or changes in projects included in the Master Plan, in the Public Housing Service, in Public Works, etc.
- building spaces and areas destined for projected green areas, specific uses and locations,
- date expected for the beginning of works and phases thereof.

With respect to land policies:

- Location and status of land to be protected from illegal occupation.
- **Value of land,**

The characterization of this variable, besides being an indicator of the attractiveness of vacant land for the real estate market, is required, so as to enable all the planning areas to propose possible expropriations of land potentially useful for setting up strategic socio-productive enterprises, such as those related to UA.

2.2 Detection and characterization of municipal non-built up land

Non-built up land or vacant areas were classified on the basis of the types of ownership and a typology of vacant spaces, each one requiring different types of policy intervention:

Types of Ownership

1. Private
2. Municipal Public
3. Provincial Public
4. National Public
5. Railway company
6. Road company
7. Other

Typology for the classification of UA spaces

Private spaces	1. Private vacant 2. Private with fiscal debts
Green areas	1. Squares 2. Urban / recreational parks
Institutional spaces	Hospitals, Schools, Jails, Public buildings
Public spaces	Municipal Public
Areas not suitable for construction	1. railway tracks 2. river/stream banks 3. sidewalks/ roads/ quarries 4. corridors along highways /Beltway 5. Flood prone areas
Ecological reserves/protected areas	1. Ecological Reserves 2. Parks and forests
Treatment areas	1. Sanitary landfill

Unit of analysis

The identified lots have 5,000 square meters or more in Peripheral areas, and 2,500 square meters or more in intra-urban areas. The 5,000 m² area is determined by the following ratio; *collectively cultivated area that provides production possibilities that allow for commercialization*. The 2,500 m² area are considered as basic units in intra-urban areas.

Interpretation of photogrammetric mosaics

The identification of “non-built up” lots was made on the basis of the *interpretation of digitized photogrammetric mosaics*⁴ (July 2001, last photographic registry existing in the city of Rosario).

Elaboration of land use map

The vacant plots previously detected in the photogrammetric mosaic were identified using maps of the city of Rosario, discarding vacant areas with lots that belong to several owners, and those that do not reach the required dimensions of analysis (minimum 2500 m²). In this way a geo-referenced base map was developed, which will be used in the planning and monitoring of urban agriculture in the Municipality of Rosario.

- Verification and characterization of non-built up plots by type of ownership and by typology based on a survey of updated cadastral information. Quantification of areas of non-built up surfaces by land use type.
- Characterization of vacant plots by the other defined parameters for the determination of the accessibility thereof.

2.3 Participatory Consultations

The diagnostic process combined different participatory approaches related to the search and organization of basic information. The main sources of information were:

- Information on basic urban and city planning context,
- The Urban Agriculture Program attached to the Secretariat for Social Promotion of the Municipality of Rosario,
- Participatory workshops held with representatives of 70 community gardens located on the flood areas of the Ludueña and Saladillo streams (see below),
- Interviews with technicians, municipal officials and urban producers,
- Meetings with other municipal, institutional and community agencies (University, NGOs),

⁽⁴⁾ This material was handed over by the Office of the Master Plan. The scale of the mosaics is 1:3000 (scale which allows to clearly observe the level of resolution of the image). In total 182 mosaics were used.

- Consultations to food self-production programs such as Prohuerta (at national level) and Crecer (at municipal level),

At this stage of the study, based on the analysis of vacant areas and the land used for UA, and the characterization of potentially usable land, maps of non-built up land were prepared and **the types of more accessible land** were identified (see maps N° 1 and N° 2 in www.ruaf.org/E-conferences).

Participatory workshops with urban farmers

The first participatory workshop: “**Presentation of the optimization of land use project**” was aimed at socializing the contents and purposes of the project, sharing information on study areas and collecting data on the difficulties experienced by each group during the process of development and production of the gardens. Cartographic maps were prepared to show general information –on land use regulations, ownership and use– and served also for participants to locate their urban gardens and potential vacant land areas for UA⁵:

The Second Participatory Workshop: “**Status of existing gardens**” aimed at making an in-depth characterization of the gardens in operation, social groups that participate, management and working processes developed, and collecting supplementary information to determine the suitability and level of accessibility of identified empty lots.

Participatory land maps were prepared from the perception of social actors, detecting the restrictions identified for the integration/inclusion of UA in land planning, municipal programs and policies, and collecting practical solutions and strategies formulated by the social actors responding to the identified restrictions.

The Third Participatory Workshop, “**Development of proposals**” further developed understanding of the problems found in the process to gain secure access to land; to define the conditions or requirements that a group or organization wishing to benefit from the assignment of a lot must meet; to determine the feasible commitments that beneficiaries can assume and to collectively build on the recommendations that will be considered in the development of a municipal legal framework that will regulate the assignment of lots to be used in Urban Agriculture.

Inter-area workshops

The proposals made by the community were disseminated among several municipal departments, including:

- UA Program – Planning Area (Secretariat for Social Promotion)
- Master Plan (Secretariat of Planning)
- Office of Topography and Cadastre
- Office of Parks and Promenades (Secretariat of Public Services)
- Public Housing Service
- Strategic Plan for Rosario
- Municipal Legislature – Deliberating Council

During the two workshops, the community proposals were analyzed together with these representatives as to define the restrictions and possibilities of UA in Rosario. The workshops aimed at elaborating “Proposals for the organic integration of Urban Agriculture in municipal public policies in Rosario” (see chapter 3: Action Plan)

⁽⁵⁾ Based on this experience, it is recommended to use maps on a scale that allows good visualization of land parcels and the inclusion of street names. We therefore recommend to use maps at a scale of 1:1000, appropriately associated to general maps (area and city), indicating street names and names of neighbourhoods.

2.4 Diagnosis of soils with agronomic restrictions for Urban Agriculture in the city of Rosario, Argentina

The community workshops also led to the identification of the need to improve suitability of land areas for UA. Therefore a study was prepared, characterizing:

- Soil quality of land areas used for Urban Agriculture
- Characterization of each type of soil
- Proposals to improve soils with agronomic restrictions
- Practices to recover soil fertility
- Description of traditional farming practices
- Recommendation of crops appropriate for each soil type

On the basis of the study, a manual of techniques for the management and recovery of several soil types with specific restrictions was developed (lowland areas, former dump sites, flood prone areas, decapitated soils, etc.)

3. Action Plan

The Action Plan prepared in Rosario incorporates activities aimed at the design of vacant spaces for productive use, the improvement of the quality of soils to facilitate their use in UA, and the formulation and institutionalization of facilitating public policies.

3.1 Design

In June 2003, “**Comprehensive Design Workshops**” were created to enable the definition of program guidelines for the design of UA spaces.

These workshops provided a space for debate and proposals open to technicians working in the project and to members of municipal planning units, and resulted in:

- *Development of proposed Land Use Maps*
Proposed Land Use Maps represent plots of land suitable for UA, characterized by their degree of accessibility. These maps are useful tools in the planning of land potentially usable for UA.
- *Design of Garden Parks in public spaces or along banks of urban streams* (see 3.2)
- *Development of typology of organizational schemes for the design of gardens, according to land characteristics (soil type, location, orientation, relation with roads, flood risk, etc.)*

3.2 Proposals for the organic inclusion of Urban Agriculture in Municipal Policies.

“Urban Agriculture as a strategy of the Master Plan”

The Master Plan is a public municipal agency that works on two issues. On the one hand, it interprets the processes of change in the physical and spatial aspects in the city, and on the other hand it defines –based on that interpretation– land strategies, spatial and functional policies and programs and urban development projects to transform the city (physical projects / regulatory projects / management projects).

The exploratory nature of the activities developed by the Master Plan allow to insert the Urban Agriculture Program in overall Urban Design, taking into account the following issues:

- Transformation potential offered by UA,
- Need to include UA in urban policies and the public agenda,
- Need to generate a regulatory framework and guidelines to insert UA.

The development of these experiences in the context of the Master Plan includes the following points among its objectives:

- Integration of social and productive programs inherent to intrinsic aspects of gardens with city planning and environmental programs in order to recover landscape and re-habilitate neighborhoods,
- Promotion of active involvement of various actors in the implementation of these programs and projects,
- Linking these programs to other public activities and projects (green areas, equipment, housing, infrastructure, transportation, etc.) so as to strengthen the urban rehabilitation or renovation strategies of the Plan,
- Generation of a new typology of public spaces (e.g. municipal parks and forests) that could be called “Garden Parks”, whose configuration as a space with innovative characteristics (combining recreational, green and productive land uses) inside the city or in the periphery becomes a strategy for transformation,
- Consolidation of management process of Urban Agriculture, incorporating physical and spatial aspects as an inseparable part of its general program.

“Setting up a Land Bank for UA”

The objective is to carry out the permanent identification and inclusion of vacant land suitable for UA in the **Municipal Land Bank of the City of Rosario**, in order to facilitate the process of assignment of this land to UA community groups.

“Decentralized system for the management of vacant lots for UA”

The management and administration of vacant lots for UA has been centralized in the Secretariat for Social Promotion (which manages the municipal Urban Agriculture Program). In turn, the Secretariat co-ordinates activities with Cadastre and Planning Office and Parks and Promenades. Requests for the (temporary) use of vacant lots will be qualified and prioritized using several criteria defined in the participatory workshops, such as community commitment (to work as a group, to co-operate with other neighborhood organizations), the time the group of gardeners has been operating, their level of responsibility (to keep the land in good condition) etc., prioritizing groups of unemployed persons.

Annexes (see www.ruaf.org/conferences):

1. Municipal Ordinance for temporary allocation of plots
2. Map identifying the vacant lots
3. Map identifying lots that are most accessible for UA