Numerous studies point out as a new feature of the process of socio-territorial transformations in the new century, the intensification of inequalities and the increasing difficulty in accessing affordable housing in the cities. In Cordoba, Argentina, urban form is characterized by low densities, discontinuous expansion, increased segregation, and urban fragmentation. The paradox is that even in a context of economic growth (during the first decade of the 21st century) the housing deficit and urban informality enlarged. The objective of the research is to determine the way in which housing policy has influenced the production of new territories. The methodology seeks to integrate quantitative and qualitative approaches. The results allow us to recognize processes of urban fragmentation, as well as the conditions derived from the peripheral location of housing policy. In this way, we seek in this study to advance in the notion of more inclusive residential environments.

Key words: urban growth - socio-spatial inequality - informal habitat - housing policy

1. Socio-territorial transformations, physical expansion, and the growth of urban inequalities

In the last three decades, Latin America has become an essentially urban region. More than 70% of its population live on cities; and some countries such as Argentina, Chile, Venezuela, and Uruguay, exceed 80% of the urban population. The studies on the evolution of growth in the main cities of the region, as well as in cities of developed countries, indicate that the characteristic feature in recent decades is the extension of urbanization. The general tendency is the conformation of metropolitan areas with diffuse borders and regional agglomerations and the decline in densities of the built-up areas (UN HABITAT 2012; Angel, 2010). It is noted that the annexation of urbanized land accompanies the transformations produced in recent decades, in most of the cities of the region, even when population growth ratio has slowed. As Abramo (2004) points out, the extension of physical growth responds to different logics of spatial production (the logic of private capital, of state action and of necessity) that compete for a scarce resource: urban land.

Numerous researches indicate that the main characteristic of the process of socio-territorial transformations that cities have in the new century is the intensification of inequalities. Also, there is an increasing difficulty in getting access to worthy livable conditions, which affects an increasingly large number of urban residents in Latin America. Since the nineties of the last century, it is observed in most of the cities of the region that the socio-spatial forms in the periphery of cities are associated with a more divided urban-space. The different urban sectors are interconnected, yet are separated, either by functional divisions (residential areas, public spaces, industrial zones, etc.) or by social divisions. The areas in the city that different sectors of the population occupy, reflect, and reinforce conditions of inequality (Marcuse, 2000). Social inequalities, as main characteristic of urbanization in Latin America, are manifested in the urban form: dual and polarized residential areas, ones with luxury environments, physically differentiated and closed; and others, impoverished places that concentrate a highly vulnerable population and low levels of public investment in urban services and infrastructure.

The reproduction of inequalities within cities and the intensification of residential segregation among population groups with a much greater intensity than in previous stages, is evident when analyzing the possibilities of access to land and housing-markets for different social sectors. Growth crises, derived from the mismatches between the demand for spaces and the supply of land and housing in the market, translate into the lack of urbanized land. Following the hypothesis of Harvey (1989, p. 121) the market limits the possibilities that different social actors have to choose a location in the city, the dynamics of urbanization create a structure where individuals can choose, but cannot influence the production of urban land value. This process "can only be corrected through a public housing policy that goes beyond the pure and simple acceptance of market trends" (Castells, 1990, p. 37). Land and housing become essential assets for the development of urban life and are an essential component for overcoming poverty. The current context of financialization of land and housing, coupled with the accelerated precariousness of urban workers, has had a significant impact on the right to the city, in terms of access to a decent habitation for much of the population.
In a market economy, land and housing are acquired under commercial rules and those who cannot afford prices due to their low economic resources, must do so through subsidiary public policies or self-production and self-supply processes.

Numerous studies observe that more than half of the Latin American population does not have access to housing and basic services through the market or the state, but through informal processes. According to the United Nations, in 2016, almost 30% of the world's urban population and more than 20% of the Latin American population resided in slums. These neighborhoods refer to a group of homes that have at least one of the following four characteristics: a) lack of access to water supply; b) lack of access to sanitation services; c) overcrowding (3 or more people per room); and d) homes built with precarious materials. In this way, it refers to a residential and social precariousness in which a large part of the world population in general and Latin American in particular, lives.

Faced with this problem, it is possible to identify three types of interventions developed by the state in the case of Córdoba, according to the conception of the problem in different periods: 1) the final eviction; 2) on-site urbanization through neighborhood improvement; or 3) the relocation of population by moving them to new housing complexes, usually located in the urban periphery. The latter has been the most outstanding action in the city of Córdoba, especially since 2003 when a public housing policy began to address situations of urban informality.

2. Housing policy in Córdoba, within the framework of urban growth processes

Even though the public policy-driven housing programs implemented in the last decades in Latin America have had a significant impact in quantitative terms (as mention by Rodríguez y Sugranyes, 2005; Brain y Sabatini, 2006; Catenazzi y Reese 2016) the conditions of inequality in urban development persist, as well as residential segregation. Especially the peripheral areas present critical situations in physical-spatial and socio-territorial terms. Studies carried out in different cities of the region (Chile, Brazil, Mexico and Argentina) identify certain constant features of social housing policies, deepened by the weakening in the role of the State as guarantor of urban equity and the supremacy of the market real estate in the production of space. Increasingly, the location of housing projects is peripheral, which has resulted in deep problems for the relocated population, such as: the increase of distances from institutions and places where urban services are located, the weakening of social networks, the construction of socially homogeneous territories, reducing the possibilities of interaction between groups, and increased difficulties faced by low-income sectors, in their strategies of social reproduction in situations of poverty, as a consequence of the greater distances to centrality (service centers, social facilities, provisioning, consumption, among others) and the increasing costs of mobility in public transport systems.

The case of the city of Córdoba - Argentina, which we consider as a regional metropolis (in its condition as provincial capital and second city in terms of population size in the country) is significant, as it presents a particular demographic transition and in recent decades, a tendency to the deceleration in the rhythm of population growth. At the local level (Peralta C., and Liborio M. 2014, Marengo C., 2008) have studied population growth of the city in different inter-census periods, observing the dismiss of residents located in consolidated neighborhoods and the migration towards peripheral areas. Thus, a process of territorial expansion that is linked
to demographic changes (decrease in the size of cohabiting households) but is also associated with physical-spatial variables and the new forms of urbanization (in natural and protected environments) promoted by the market. The expansion of urban growth is thus linked to decisions of individuals who choose peripheral locations and with economic variables linked to what, De Mattos C., (2010) defines as "commodification of urban development".

The increase in the amount of population living on the outskirts, the decentralization of activities to the periphery, the materialization of large commercial, recreational and residential projects in the city borders, produce a development with greater physical and functional dispersion in the urban structure. The discontinuous and significant expansion of the urban form in the last decades is attributed to the lower intervention of the State in the regulation of urban growth, to more flexible regulations in order to facilitate private investment, the development of large urban projects, and a public housing policy that resulted in an increased polarization of the social structure.

In Latin American cities in general and in Cordoba in particular, one of the characteristics of the growth process is the increasing value of developable land in the market. High values on urban land make difficult the affordability to housing by large sectors of the population in consolidated city-areas, expelling to living in increasingly distant locations. By this way, the process of urban-metropolitan expansion accentuates. (Fig 1).


Some particular dynamics associated with the sprawl model are identified as: a) the intensification of residential segregation, b) the physical fragmentation in the pattern of land-occupation, where the open grid of plots and streets is replaced by closed and discontinuous plots (Fig 2) and c) the sustained growth of informal settlements (Monayar, 2018). The loss of
population in the traditional and consolidated neighborhoods of the city occurs simultaneously with the migration to the periphery; this leads to a decrease in the densities of built-up areas from the city center to the outskirts (Fig. 3). Added to this situation in the city borders is observed the concentration of social problems in certain areas with critical housing conditions.

Different housing policies were developed in the first decade of the 21st century in Argentina. After the recovery of the 2001 crisis, housing policy is considered by the national State to revitalizing economy. A Federal Housing Construction Plan (PFCV) was implemented, aiming at not only contributing to reducing the deficit but actively participating in the revival of the economy. (Falú and Marengo, 2015). Although some programs of the PFCV were built in Córdoba, the greatest impact of housing policy derived from the implementation of the Mi Casa Mi Vida (MCMV) Program, partially financed by the PFCV. Between 2003 and 2009, the government of the province of Cordoba implemented a program, (MCMV), which meant the transfer of numerous shantytowns located in consolidated city-areas to new neighborhoods located in the outskirts. It was financed through a loan from the Inter-American Development Bank (and some neighborhoods, with federal funds as mentioned above). The objective of the program was to provide housing to families located near the water courses (as Suquía River and irrigation channels) subject to flooding, emphasized after the floods that took place in 2001.

Given the commercial logic for the acquisition of land to carrying out the work, and the rush for the use of resources financed by the Inter-American Development Bank (IDB), the implementation of the program was carried out in peripheral lands, away from the consolidated urban area (Fig. 4). By this way, in most cases was required a change of urban legislation and norms to allow the location of dwelling in areas affected to rural or industrial land-uses.

![Image](https://gn-idecor.mapascordoba.gob.ar/maps/10/view)
Fig. 3 Densities (dwellings/hectares) Source: Cordoba Municipality, Urban Planning Direction.

Fig. 4 Relocation of slums to the periphery. Source: Cordoba Municipality, Sub-direction of urban regularization 2005.
3. “Mi Casa Mi Vida” housing program (2009-2019) and the production of residential peripheral areas

One of the components of the public program was housing rehabilitation, aimed at restitution of a home, as a definitive solution, for families affected by floods. It was pointed out that the houses should be located on a plot in an adequate environmental area owned by the National, Provincial or Municipal State. It also ensured the provision of services and infrastructure, access to minimum social equipment and public green areas, according to the scale of the new housing complexes.

The execution of the program resulted in urban complexes between approximately 20 and 650 housing units. Those called “city-neighborhoods” (that include more than 200 dwellings units), have community facilities: primary and secondary school, kindergarten, community centers, police station, plazas, and commercial areas. In relation to infrastructure, all new neighborhoods have provision of water, electricity, street lighting and paving in the main access. The city-neighborhoods also have a sewage collection network and a sewage treatment plant. The accessibility in terms of public transport system is covered by at least, one public transport line.

On the other hand, the dwellings delivered (more than 10,000 serialized and standardized) are characterized by a compact type that includes in a minimum area, a living-dining room, kitchen, bathroom and two bedrooms. The built area is 42 m2 in lots of 250 m2 (Fig. 5 and is delivered with proposals to build future expansions contained in a user manual.

The target families of the housing policy are original inhabitants of shantytowns. Studies conducted in recent years at the local level (Buthet et al 2010; Techo 2013; 2016) indicate that the average number of family members in these informal occupations exceeds four persons. In this way, it is verified that the built-area of the dwelling initially provided is less than 10 m2 per inhabitant, which is not enough to comply with the requirements of the Building Code of the Municipality of Córdoba (Municipal Ordinance 10741/04), which indicates that residential buildings consider that permanent housing must have a minimum area of 12 m2 of built-area per inhabitant.

If the overcrowding index (more than two inhabitants per room) or the critical overcrowding (more than three persons per room) is added, the proposed typologies of dwellings do not resolve the qualitative deficit. This data is verified by Marengo and Elorza (2018), who analyzed the housing conditions from the latest census data (2010), on the larger city-neighborhoods, and pointed out that 56% of the population resided in overcrowded conditions. The same study also indicates that 42% of the population corresponds to people under 14 years old. Although the data is about ten years old, the fact that it is represented the initial condition of the program, suggested that the expectation would be an increasing trend and the aggravation of the overcrowded situation at present. Even when the size of the plot makes possible to expand the dwellings or build another housing unit on the same property, this is not always feasible given the complex social conditions of the inhabitants (personal and coexistence conflicts, situations of violence, structural poverty, insufficient economic resources, unemployment, among others, etc.).

Another factor that is noteworthy is the peripheral location of the housing complexes. In most of the cases the new areas to the relocation of inhabitants were lands previously devoted to rural or industrial use according to current municipal regulations. This condition implied a
lower initial cost of the land, but also a requirement to change the land-use from rural to developable land. This change in land-uses defined by norms is necessary condition to enable the relocation of the population in the new housing complexes, but also to make possible the extension of infrastructural networks (as electricity or water supply by private companies) and the provision of public services, as transport. The modification of the norms made by the local government affected in all cases only the plot where the housing complexes were located. An important omission is that do not prevent for open spaces (as buffer areas) to mitigate conflicts in land uses. This situation caused, among others, the conflictive adjacency of rural and urban-land uses and the lower environmental quality nearby some city-neighborhoods because of the use of agrochemicals. In some cases, the social conflicts in land uses takes to the cessation of the agricultural activity. The owners of the land stay waiting for a change in land-use patterns (and retain the supply of land in the market) and this increases the speculation on land-values. By this way, is impel the process of sprawl (by leapfrogging) leaving vacant land for future valorization and conditioning the possibilities of locating housing policy more and more far away. (Fig. 6).

As we have mentioned, the location of the housing complexes in the periphery and in most cases without continuity with the urban tissue, modified the dynamics of the areas in which they were inserted. Although they are dispersed throughout the peripheral city-ring, most of the neighborhoods are located in an arc between the north and southwest axis of Cordoba city and in the opposite side where are located high-income neighborhoods promote by the market. In previous studies (Marengo and Elorza, 2016) we have been able to verify that the location of the public housing complexes coincides with the areas that present the highest levels of socio-economic residential segregation intensifying, in this way, the conditions of social homogeneity in poor environments that already had conditions of high social vulnerability.

An effect derived from this process, is the growth of informal settlements, (slums) most of them located in the immediate vicinity of the “Mi Casa Mi Vida” dwelling program. Some examples of informal occupations are those built nearby the neighborhoods: “Ciudad de Mis Sueños”, “Obispo Angelelli”, “Parque Las Rosas”, “Sol Naciente”, “Ciudad Evita”, among others. (Fig. 7 and 8) (Fig. 7 and 8)

This phenomenon -that shows the increasing of informal settlements nearby a public housing programs- shows the lack of prevision of a public policy to access to land and housing. The greater difficulty in formal access to urban land that vulnerable population has, as well as the lack of state support for improvement and expansion of the minimum built-up residential area provided; the effects of overcrowded conditions on homes and the new families formed in this period (given that it is a young population in a high percentage of cases, as revealed by the Census 2010) as well as the availability of land in proximity to the housing program MCMV among others reasons explain the new informal settlements nearby.

The recognition of the existence of a relationship between the location of some housing complexes of the “Mi Casa Mi Vida” program, and the informal access to land in certain peripheral sectors of the city, would generate what Rodrigo Hidalgo Dattwyler (2007) calls (for the case of Chile) "precariopolis". In these territories, although some indicators of quality of life have improved (health, education, quality of housing construction materials, among others), overcrowding levels, urban monofunctionality, social homogeneity, etc. are increased. The lack of relationship between housing and land policies that guarantees improvements in access to
this indispensable asset by those who are “beneficiaries” of a policy is expressed not only in the fail to provide an adequate response to the needs of the families of the program, but also, as Smolka (2002) says, the "solution" becomes part of the problem.

Fig.5  Dwelling typology of the Housing Program “Mi Casa, Mi Vida” Government Province of Cordoba

Fig.6  Location of Housing Program (2010). Source: Social Development Ministry. Province of Cordoba
4. Conclusion
The case of the MCMV program implemented in Córdoba Argentina has made possible to understand the production and evolution of the outskirts territories and to account for the effects derived from the urbanization process itself, in this case promoted by the State and materialized through the peripheral location of public housing policy.

The urban growth that the city presents in the last decades, shares features with other cities in the Latin American context: the process of commodification of urban development is embodied in an urban model of an exclusive (closed) and fragmented city, where urban land production modes and patterns of use are restructured. Urban residential areas are increasingly
extended and show a model of territorial stratification that responds to the possibilities that each social sector has to access urban land. These processes also have an impact on the land market, with high speculation rates derived from the accelerated and discontinuous growth of the urban area and low densities in the built form, among other features. Greater urban expansion means higher infrastructure costs and service provision, aggravated by a pattern of discontinuous land occupation. Socio-territorial inequalities, and the reduced possibilities of access to developable land, (and decent housing conditions) for large vulnerable sectors of the population, drive informality in urban development, which is seen as a constant of the growth model of the Latin American city.

The Cordoba case shows how housing policy has reconfigured uses in the urban periphery (from rural or industrial uses to developable residential land offer). The location of large-scale housing complexes (called “neighbourhoods-cities” because they are integrated with more than 250 housing units, some up to 500) has contributed to intensify the processes of physical fragmentation of urbanized areas. These are housing complexes located in edge sectors, (with different degrees of isolation from the built-environment) and where the dwellings appears discontinuous from those located in the consolidated city areas.

The relocation of population from shanty towns and informal settlements to the new “neighbourhoods-cities” has intensified the formation of a homogeneous population profile (of high vulnerability) in some areas, that present critical housing conditions such as overcrowding. This is due to the formation and evolution of the initial family nucleus, and the limited possibilities of expanding the dwelling built-up area provided by the public program.

The intensification of social-spatial inequalities in access to land and housing, is evident in the increasingly peripheral location of public housing programs, with an increase in distances towards central city-areas, and higher costs for the population in the daily mobility by public transport. Conditions of peripheral location, which prevail in this type of programs, (even when the “neighbourhoods-cities” have schools, plazas, commercial areas, among others in urban facilities with proximity) mean a strong isolation to the population that does not have resources for daily mobility to the central-city. The possibilities of accessing labour, educational and social opportunities that take place in the city-centre, are reduced. It is observed a process of physical fragmentation of space and the intensification of socio-economic residential segregation, derived from location in peripheral places and isolation.

The mercantilist logic in urban growth, which is expressed in a scattered occupation of space (leaving vacant areas subject to speculation and future valuation) and in the increasing of land-prices, imply serious limitations for access to quality-land for urbanization, in the case of public housing programs. This logic impels processes of changes in land use, and modifications in planning regulations, to access to low-cost urban land to locate subsidized housing programs; even when it requires the extension on service provision and infrastructure networks that entails. Thus, the absence of a public policy of access to urbanized land for sectors of high social vulnerability, which could counteract the effects of increasing commodification of urban development process, leads to an increasingly peripheral location of the programs promoted through public housing policy.

Another effect derived from this condition is the growth of informal settlements, which are located on the edges of the public housing complexes. Undoubtedly, it is the most significant effect registered in the temporal evolution of the peripheral territory analysed. This condition
poses a paradox, given that new informal conditions are produced contiguous to public housing programs, even when one of the goals of the policy was to overcome informality. This condition led us to question ourselves on the right to the city and the conditions to access to urbanity that are reached through this type of programs. Overcoming the conditions of socio-spatial inequality in the urban growth process will not be possible as long as a process of extensive and dispersed occupation of the urban territory continues. It is necessary to promote planning processes that contemplate future locations of public housing policy and that expand the possibilities of access to land for those highly vulnerable social sectors, an increasingly pressing condition in our cities.

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