

# Paths To Urban Regeneration in Chile



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## Introduction & Literature Review

### A. Introduction

The socio-economic and spatial transformations of many Chilean cities in the last 40 years have caused physical deterioration and social segregation in numerous central and periphery neighborhoods. In the 1980s, the country was facing a significant housing deficit. Affordable housing complexes were built massively and homogeneously in the outskirts of major cities. In most of these new developments, the city did not consider necessary public goods, services, and public infrastructure. There was not adequate access to public spaces, education, health, jobs, mobility, and transport. Despite the significant increase in affordable housing stock, the lack of investment in public programs and basic infrastructure led to the deterioration and functional obsolescence of many central and periphery neighborhoods. (PNDU, 2014)

Yet how could Chile, one of the most prosperous nations in Latin America' have reached such inequality levels in housing and access to urban amenities? In only 30 years, Chile passed from being a mid-size economy in Latin America to having one of the region's higher GDP per capita (Reynolds, 2021). However, despite the progress made, there has been persistent urban inequality and social-spatial segregation. While wages rose and poverty dropped, the disparity between the rich and the poor persisted (Angelo, 2021). Chile boasts one of the highest GDPs per capita in Latin America, but its inequality indicators remain in the median for the region. This situation has been aggravated by the pandemic and recent economic crisis, deepening intra-urban disparities, which have caused more significant impacts on the most vulnerable and middle-class families.

The social and political crisis manifested in Chile in the spring of 2019, and the COVID-19 pandemic effects have become a steppingstone for politicians to address at a national level the implications of housing problems and urban deterioration on the quality of life of Chilean families. The relevance of the urban

issues in the current political agenda is an opportunity to develop and propose new and improved regeneration programs and policies to transform deteriorated urban areas into neighborhoods with better transport, housing, open spaces, and public infrastructure.

Addressing the increasing housing deficit, neighborhood deterioration, and social-spatial segregation in Chilean cities has become a national priority and an urgent need for equitable, prosperous, and sustainable development of cities. New and improved regeneration programs and policies are needed to transform deteriorated urban areas into neighborhoods with better transport housing, open spaces, public infrastructure, and opportunities for residents and local communities. In this thesis I will study urban regeneration programs in Chile through interviews, quantitative and historical analysis and do cross comparative analysis among urban regeneration programs. My findings will detail how the regeneration initiatives in Chile engaged, overlooked critical social factors and infrastructure needs that enable equitable development and social mobility. I plan to draw from these findings to propose a more nuanced framework for Chile and Latin America regeneration initiatives. With an immediate policy focus on cities in Chile's more deteriorated neighborhoods that are under pressure to quickly develop more housing and urban infrastructure for vulnerable residents and new waves of migrants coming from other Latin American countries.

## **B. Chilean Urban Context**




### Housing Deficit

Housing access is a problem that has been increasing in recent years. Chile has a population of 17.6 million where 2 million people have no access to adequate housing (Deficit Cero, 2022). Although, between 1996 and 2015 there was a drop in the housing deficit (Casen, 1996-2017), from 565.000 households to 390.00 households this trend was abruptly reversed in 2017 reaching a total deficit of 640.000 households in the year 2022.

The crisis has been associated with various factors: the growing preference of families for residing in central locations; the increase in housing prices due to the lower availability of urbanized land in metropolitan areas; the rise in mortgage loan rates; increasing rate of external migration; demographic changes that multiply the rate of household heads, such as the aging of the population and the formation of smaller households.

The social outbreak that Chile faced in 2019 and the economic crisis caused by the COVID-19 pandemic have made visible the overflow of housing vulnerability that Chile faces, generating an increase in camps and homeless people outside the rental market, and putting an urgency to the need to rethink a new public housing policy that provides timely solutions to the hundreds of thousands of families that today need to improve their housing and neighborhood conditions.

Table 1: Housing Deficit Evolution

	<b>Year</b>	<b>Housing Deficit</b>	<b>Description</b>
	<b>1996</b>	<b>565.000</b>	High proportion of camps in Chile
	<b>2006</b>	<b>435.000</b>	Important social housing projects are developed without access to goods and services in the peripheries of the city.
	<b>2015</b>	<b>390.000</b>	A real estate market for the middle class is consolidated with hyper densification projects in cities central areas.



Informal Housing in Santiago

**2022 640.000** Chile returns to an unprecedented housing deficit.

Increase in housing prices of 62% vs. real wages in the last 10 years (INE, CChC)

### Services and Infrastructure Deficit

As important as the housing crisis Chile currently faces, there is an even more significant deficit regarding access to services, urban infrastructure, and public transport options. According to the SIDU index (Indice IBT, 2020), 3 million people live without adequate access to basic infrastructure, services, connectivity, and equipment.

The city's opportunities only reach some territories because they are concentrated only in some areas. This situation is accentuated by a disparate distribution of goods and services the state provides. For example, if we analyze the 35 largest cities in Chile, it is observed that only 18 of 117 municipalities meet a standard of 10m<sup>2</sup> of public green areas per inhabitant. Very far from meeting the standard (below 5m<sup>2</sup>/inhabitant), are 7.6 million inhabitants (SIEDU, 2019) with an urgent need for green areas in their neighborhoods.

### Socio-Spatial Segregation

Chilean cities are highly socially segregated. To measure how the city can become a meeting space for diverse socioeconomic groups, the SIEDU index (Indice IBT, 2020) proposes estimating the percentage of vulnerable families (quintiles I and II according to the Social Registry of Households) that live in each neighborhood unit in large Chilean cities; establishing the 20/60 standard: below 20% there is a concentration of high income and above 60% there is a concentration of low income. Currently, no

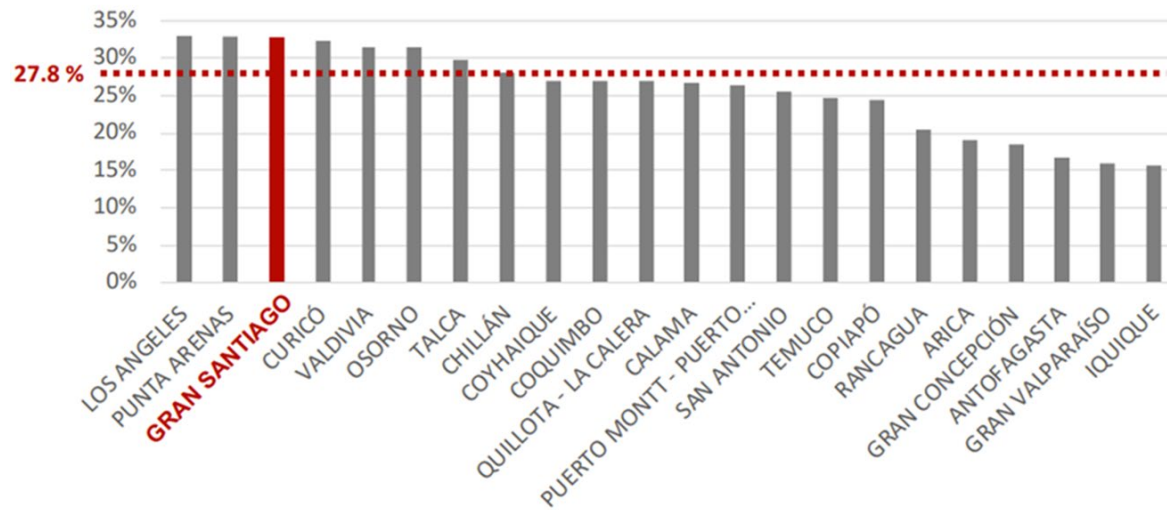
municipality in the country complies with all its neighborhood units within the 20/60 standard; and only 5 of 71 are close to complying (SIEDU, 2019)

Transportation Deficit.

Considering the National Chilean Committee of Urban development standard that at most 90% of the trips generated in a municipality take more than 60 minutes, only 7 of 44 in Greater Santiago comply; moreover, there are municipalities where that measurement exceeds 120 minutes (Indice IBT, 2020). One variable that explains this data is the sizeable territorial concentration of commercial activities far from residential centers. Also, there are municipalities where a large percentage of their trips are destined for other municipalities, which lengthens the trip's duration.

Table 2: Percentage of population per city living in priority investment areas according to the IBT index

3 million people live without adequate access to basic infrastructure, goods and services, connectivity, and equipment. (Indice IBT, 2020)





### **C. Literature Review**

#### *What do we understand by Urban Regeneration?*

According to the Chilean Urban Development Council urban regeneration should be understood as a highly complex process, where physical, economic, and social objectives must converge. An urban regeneration process seeks to recompose structural, physical, and social elements of deteriorated areas and ensure access to better housing, infrastructure, and urban integration. This process must involve all stakeholders, including the public sector, the private sector, and the community of the intervening neighborhood. The collaborative relationship between these actors constitutes a fundamental foundation of the urban regeneration process. (PNDU, 2021)

#### *Urban Regeneration Objectives:*

The National Urban Development Policy is clear in stating, "The State must ensure that our cities are inclusive places, where people are and feel protected and incorporated into the city with access to public spaces, education, healthcare, job opportunities, security, social interaction, mobility, culture, sports and recreation. This goal must be a national priority" (PNDU, 2014).

In this context, an urban regeneration process may address areas of industrial obsolescence, central or peri-central blighted areas, slums, segregated neighborhoods, neighborhoods with high crime rates, or others. Each type of neighborhood requires an adequate proposal for each reality, protecting and preserving their cultural heritage. All the efforts that can be made from a sustainable mobility point of view are essential to ensure the connection of the regenerated territories with intercommunal facilities and services with the rest of the city. (CNDU, 2021)

Objective 1: Rehabilitate Neighborhoods, with all their urban attributes, in those marginalized, segregated, or deficient sectors in terms of housing, goods, public services, and equipment. These neighborhoods are usually located in the peripheries of Chilean cities.

Objective 2: Reverse Neighborhoods Deterioration experienced by city sectors that, meeting conditions of good location and integration into the city, have undergone processes of functional or material obsolescence. These neighborhoods are usually located in the central areas of Chilean cities.

**Rehabilitate Neighborhoods:**

**Peripheries**



Bajos de Mena, Puente Alto

**Reverse Neighborhood Deterioration:**

**Central Areas**



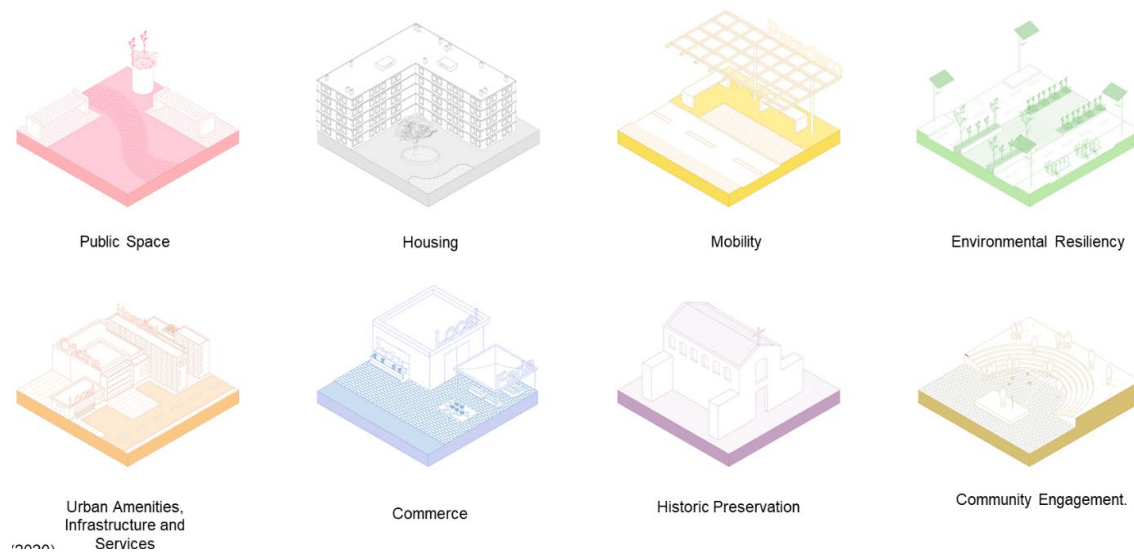
Santiago, Centra Area, Source: Jose Francisco Zuñiga /Agenciauno

Urban Regeneration Aspects:

An urban regeneration process seeks to recompose the social fabric of those who live and will live in the place, improving their conditions of access to the city and at the same time generating better employment conditions for its inhabitants. Since urban regeneration seeks to recompose the structural elements of a neighborhood to ensure better access to housing, goods, and public services, it should consider a variety

of aspects to address a highly complex process, where physical, but also economic and social objectives must converge.

An urban regeneration process can be address in eight areas:



Source: *Fuentes (2020) and Sebastian Salas, (2022)*

The following aspect shows the importance of addressing urban regeneration as a comprehensive, participatory, multisectoral coordinated process that aims to reduce socio-spatial inequalities, access to urban goods and services, and strengthen the social integration of highly deteriorated vulnerable neighborhoods. Regeneration must be understood not from a project's logic but as a process (Fuentes, 2020). This poses the challenge of creating the policy and programs that provide the necessary participatory process, financing instruments, and governance structures to address the different aspects of an urban regeneration process.

## D. Methodology

### Research Question

My thesis' research question is to examine the existing institutional framework of urban regeneration programs and policies in Chile. My findings will detail how the regeneration initiatives in Chile engaged, overlooked critical social factors and infrastructure needs, and lacked the necessary financing instruments and governance structures that enable equitable development and social mobility. I plan to draw from these findings and on the Colombian experience on regeneration partial plans to propose a more nuanced framework to address urban regeneration processes in Chile and potentially other places in Latin America.

### Methodology Scope

<u>Stage</u>	<u>Scope</u>
<b>Stage 1:</b> Analysis of Institutional Framework for Urban Regeneration in Chile:	<ul style="list-style-type: none"><li>A. Urban Policies in Chile in the last 30 years</li><li>B. Repopulation Plan and Urban Renovation Zone Program in the Center of Santiago</li><li>C. Analysis of present Urban Regeneration Programs in Chile<ul style="list-style-type: none"><li>➤ “Regeneración de conjuntos habitacionales”</li><li>➤ “Programa Quiero Mi barrio”</li></ul></li><li>D. <i>Program Analysis and GAPS</i><ul style="list-style-type: none"><li>➤ Financing Instruments</li><li>➤ Governance Structures</li><li>➤ Participatory Process</li></ul></li><li>E. International Study Case Colombia: Partial Plans</li></ul>
<b>Activities:</b>	
<ul style="list-style-type: none"><li>1. Literature review of main regeneration programs in Chile.</li><li>2. A set of in-depth interviews with multiple stakeholders that have studied or are involved in urban regeneration processes. (e.g., Communities, Minister of Housing, Municipalities, Politicians, Consultants, Academics)</li><li>3. Analyze results, conclusions and propose a set of policy gaps.</li><li>4. Literature review of regeneration Partial Plans in Colombia and interviews with academics and multilateral leaders (e.g., world bank specialists).</li></ul>	
<b>Stage 2:</b> Opportunities for Urban Regeneration Chile	<ul style="list-style-type: none"><li>A. Institutional Framework Recommendations:<ul style="list-style-type: none"><li>➤ Financing Instruments</li><li>➤ Governance Structures</li></ul></li></ul>

- 
- Participatory Process
  - B. Proposal of Stages of an Urban Regeneration Program
  - C. Urban Regeneration Opportunity Areas Index

**Activities:**

1. Deliver a set of Institutional Framework Recommendations that could be part of the new Social Integration Law under Article 87 “Planes Maestro de Regeneración”.
2. Do an analysis of opportunity neighborhoods that builds on combinations of density, infrastructure and accessibility indicators that will conform to a neighborhood priority index. The following steps will be part of the methodological process.
  - a. Data Exploration: Select, Download, fix, and organize the information in the different data sets.
  - b. Data Analysis: Evaluate the main characteristics of the data properties and analyze the different indicators.
  - c. Data Visualization: Translate key metrics and variables into charts, graphs, and interactive and dynamic online visuals.

## **Analysis of the Institutional Framework for Urban Regeneration in Chile**

### **A. Urban Regeneration Policies in Chile in the last 30 years.**

Between 1990 and 2006, by means of a very efficient system of subsidies and massive public housing construction, Chile was able to eradicate most of the country's informal settlements and facilitate homeownership for more than seventy percent of the population (DíazF, De Castro,2014). These policies dramatically reduced the number of people living in camps but created significant disparities among neighborhoods, especially for the working/middle class, who did not have access to public or affordable housing programs and had to rely on the private market. "In many ways instead of creating communities, these housing policies produced a new form of slums-one not based on deprivation of property, urbanization, and housing, but one based on segregation and restricted access to public goods." (DíazF, De Castro,2014)

In the mid-2000s, a new generation of housing policies emerged in Chile and incorporated a more significant concern for improving neighborhood infrastructure. The social housing complexes built since the early 2000s have improved their quality and proximity to urban equipment (parks, transportation, amenities). However, these policies needed to be more robust and diverse to address neighborhood development as a process that includes not only physical infrastructure and housing production but also social, economic, and environmental factors. Still, nowadays, in most cases, social housing locations continue to be peripheral and far from the employment attraction centers. It has been precisely this context that has generated growing social and political interest in urban regeneration land policies.

Among the main problems of urban regeneration policies and what has proven to make them highly ineffective is that they do not include a transparent, coherent, and holistic process to determine what neighborhoods to intervene in and how to do it. A policy framework including governance mechanisms

and financial instruments to regenerate deteriorated areas that need investment is needed. As mentioned, past urban policies in Chile have mainly focused on housing subsidies and massive public housing construction, impeding to reverse spatialized social segregation and decaying physical conditions in low-income neighborhoods. A renovation process focused on physical interventions, and housing construction does not generate substantive improvements in the quality of urban life of the inhabitants or favorable conditions for the sustainability of the infrastructure that has been built. Regeneration must be understood not from the logic of an infrastructure project but as a social, economic, and environmental process that needs a wide range of policies and interventions to provide a long-lasting and integral impact on a deteriorated neighborhood. (Fuentes, Rasse, Bustamante, Larraín, Perrozzi,2019)

Even though there is no common definition of what the success of a regeneration policy implies or what its fundamental elements are, there is a clear evolution in recent decades to overcome physical interventionism and understand that it must also consider economic and demographic factors and social networks in an integrated way. (Fuentes, Rasse, Bustamante, Larraín, Perrozzi,2019).

#### **B. Repopulation Plan and Urban Renovation Zone Program in the Center of Santiago.**

The impacts of urban policy implemented in the early 90s in Chile and the lack of an integrated framework to address urban regeneration as a social, economic, and environmental process can be exemplified by analyzing the Repopulation Plan in the center of Santiago. The densification in Santiago's central areas originates in the "Repopulation Plan," a policy implemented in the '90s by the Ministry of Housing (MINVU). During the '70s and '80s, the city center had been suffering from deterioration and depopulation. The new plan encouraged private real estate development under a new urban renovation zone (ZRU). This policy encouraged the municipalities to relax the planning regulations corresponding to those areas, increasing the maximum heights and allowing property mergers, among other measures, to increase the total constructability of the projects. One of the strategies to densify and repopulate the

central area was the application of the Urban Renewal Subsidy. The subsidy was approved in 1991 for homes to be built in the so-called "urban renewal zones" (Valenzuela, 2000). Initially, it encouraged residential demand, but over time it was the real estate supply that captured its benefits and adjusted its products and prices based on the conditions proposed by the subsidy and on the demands of its new inhabitants. (Contreras, 2011)

When the Plan began in the 90s, one of its main goals was to transform the center of Santiago into a socially heterogeneous residential option. However, the lax policies and deregulation of the land market led to a regeneration process that resulted in one of the denser residential real estate developments in the city, with high levels of private absorption of land rent, displacement of original residents, and lack of services, amenities, and public infrastructure for a new generation of young professionals and families that moved to the area. (Sadia Monsalves , 2015)

The high-density levels of population and low percentage of green areas are mainly consequences of the repopulation plan, where the municipality of Santiago doubled its population between 2002 and 2017, from 200,792 to 404,495 in just 15 years (INE, 2017). The map (Figure 1) shows accessibility to green areas in Santiago, Chile, expressed in square meters of green spaces per inhabitant. Among the areas with less accessibility to green spaces is the Santa Isabel neighborhood (0.1 – 2 square meters of green areas per inhabitant), which is one of the most impacted neighborhoods by the "repopulation plan".

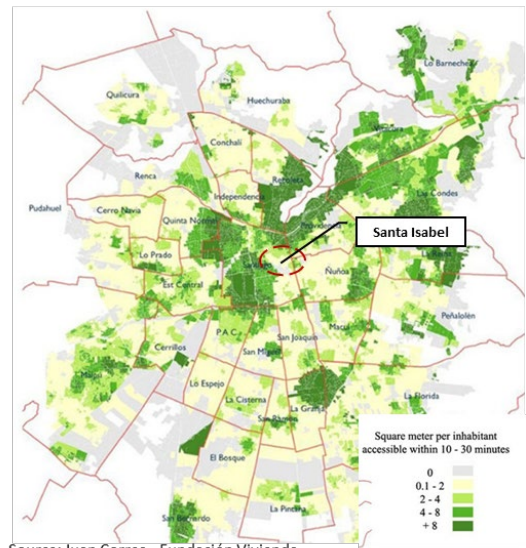


## Santa Isabel Residential Developments



Source: Diario la tercera, Junio 2017

## Accessibility to Public Green Areas



Source: Juan Correa - Fundación Vivienda

The Urban Renovation Zone Program developed in the 90's was not understood as a process, where physical, economic, and social objectives must converge. The lack of an urban regeneration policy framework to mix and match a variety of strategies consistently and simultaneously over time led to a repopulation plan that in 30 years was not able to recompose structural, physical, and social elements of deteriorated areas in the center of Santiago.

In the last years, the obsolescence and deterioration of the center of Santiago have deepened. Several factors, such as the social outbreak Chile faced in 2019, the economic impacts of the COVID-19 pandemic, and the increasing vandalism acts and crime rates, have led to the center's abandonment. In the past years, there has been a rising closure of shops, cafes, small shops, professional offices, retailers, and multiple services that gave life to the center. At the same time, rising unemployment rates have forced many workers and residents to leave the center of their city. (El Mercurio, 2022)



Source: *El Mercurio*, 2022

### **C. Analysis of present Urban Regeneration Programs in Chile**

The "Repopulation Plan," in the center of Santiago, can be considered one of the most emblematic urban regeneration policies implemented in the early 90s. The regenerated area now contains one of the city's most significant and denser residential real estate developments, which contributed to reducing the housing deficit at the time; however, lacking the public infrastructure, services, and urban amenities for the population that lives in the area.

To address the deficiencies of urban regeneration policies implemented in the 90s, the government created new public programs in the last decade to address some of the problems of urban deterioration and lack of investments in urban infrastructure. This section will analyze two existing programs and investment initiatives available for urban regeneration, both of which are very recent and focused on correcting the "city deficit" on Chile's metropolitan areas.

Program: “Quiero Mi Barrio (PQMB)”

“Quiero mi barrio” is a neighborhood recovery program of the Ministry of Housing and Urbanism (MINVU). The program emerged in 2006, and it seeks to improve the quality of life of people through the physical and social recovery of neighborhoods through a participatory and inclusive process between the municipality, the beneficiary community, and the Ministry of Housing and Urbanism (Quiero mi barrio, 2018).

The program focuses on restoring deteriorated public spaces, promoting green areas, strengthening social relationships, and supporting more integrated neighborhoods" (Minvu, 2008). Through participatory work, a harmonious and comprehensive process is developed between the neighbors and the project, generating a feeling of appropriation by the local community. The development process begins with the application by municipalities of specific neighborhoods, and the Ministry of Housing and Urbanism selection is made based on each region's priority areas. The project execution is divided into three stages:

- The Neighborhood Development Council (CVD): A participatory stage with the local community.
- The Master Plan formulation
- The neighborhood contract to execute the project.

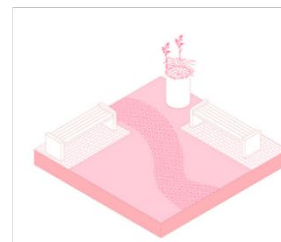
The project's delivery takes between 6-8 months. The program was recognized in 2015 as one of the "best practices" worldwide by the UN Dubai Award (Quiero mi barrio, 2018), highlighting the physical and social improvement the program generates and the recovery of the urban fabric, social inclusion, citizen participation, and urban equity. So far, the program has been executed in 520 neighborhoods in 15 regions of Chile, with more than 1 million people benefiting from creating 138 hectares of green areas, more than 220 sports centers, multi-courts, and more than 820 community facilities. The public sector finances the

program, and there has been a total of \$USD 400 million<sup>1</sup> invested in the period from the year 2006-2015.

(Quiero Mi Barrio, 2018)



Plaza Programa Quiero mi Barrio



Espacio público

Source: Sebastian Salas, 2022

### Program: “Regeneración de Conjuntos Habitacionales (PRCH)”

The Program strives to improve the quality of life of families living in buildings with a high level of urban deterioration, located in areas with functional and material obsolescence and reduced access to community services and facilities. The goal is to respond to the need to regenerate housing complexes in a more critical situation in the country due to the simultaneous presence of important housing and urban problems. (MINVU, 2021)

The Program has been operating since 2015, concentrating its activities on selecting the intervention sites, doing preliminary studies, and going through community engagement processes. There have yet to be results of the finalized projects to elaborate a more robust evaluation of the Program.

<sup>1</sup> \$290.000.000.000 CLP (Dolar Conversion, 1 = 730)



The interventions, and development process of the projects have been designed in 4 phases:

<p><b>Phase I Diagnosis:</b> Corresponds to the development of studies and analysis of the housing, legal, urban, and social aspects of the complex/lot that will be regenerated in order to develop an integrated diagnosis that provides guidelines for the preparation of the Master Plan in the following Phase.</p>	
<p><b>Phase II Preparation of the Regeneration Master Plan:</b> Consists of agreeing and defining with the community and local authorities a portfolio of initiatives in urban, housing, and social matters that respond to the needs and guidelines outlined in the diagnosis stage.</p>	
<p><b>Phase III of Execution of the Master Plan:</b> Execution and delivery of the project. It includes the urban and housing works and social initiatives defined in the Regeneration Master Plan. It also contemplates the mobility of families to homes that will receive them permanently or temporarily, the allocation of subsidies, and the acquisition and demolition of houses or land when appropriate.</p>	

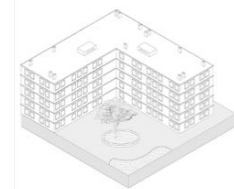
**Phase IV of Accompaniment, Evaluation and Closure:** Consolidate the organization of the new community through the application of the Co-ownership Law or the Law of Social and Territorial Organizations and the evaluation and systematization of the intervention.



Proyecto de Regeneración de Conjuntos Habitacionales en Rancagua



Espacio público



Vivienda

As of December 2020, there were 20 projects in execution in 9 regions of the country. When all these projects are completed, this will sum a total of 19.317 new units regenerated. The program involves USD \$35 million in planned investment and giving 5.600 subsidies (DS49, DS19, DS27) to families that will live in the regenerated compounds. (APPENDIX I)

#### **D. Program Analysis and GAPS**

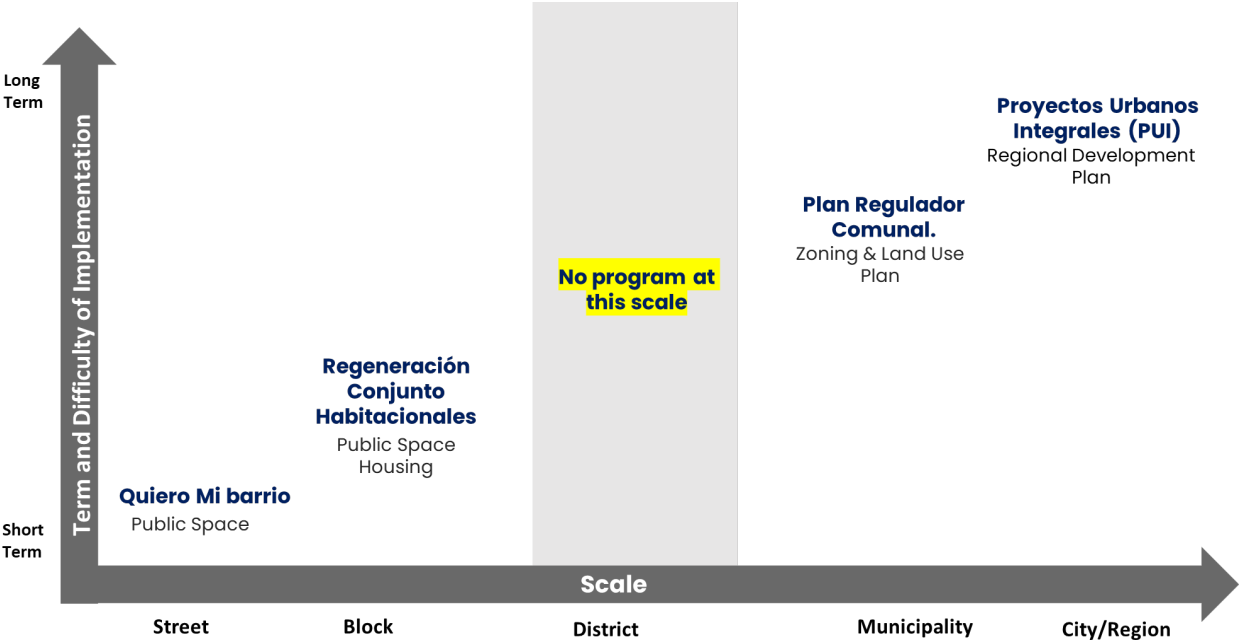
It can be stated that the programs “Quiero mi Barrio” and “Regeneración de Conjunto Habitacionales” are both programs that are trying to solve part of the neighborhoods deficit of Chiliana cities. The programs have successfully achieved authentic participation and go beyond the minimum legal requirements to connect with citizens through innovative communication and outreach channels. The participatory process and master plan stages have been an essential part of both programs, opening all stages of plan-making to the public, from early issue analysis to finalizing and implementing the plan.

Regarding the program's urban scale and impact, there is a significant need to improve and rethink what urban regeneration programs should achieve. As stated previously, the Chilean Urban Development Council establishes that urban regeneration process should seek to recompose the structural elements of a neighborhood to ensure better access to housing, goods, and public services. Programs should consider various aspects of the urban fabric to address a highly complex process where physical, economic, and social objectives must converge.

Both existing urban regeneration programs strive to recompose the social fabric of those who live and will live in the place. However, they do it at the street or block scale and mainly address the housing and public space aspect of an urban regeneration process. "Quiero mi Barrio" and "Regeneration de Conjunto Habitacionales" programs do not include large infrastructure capital investment projects such as commercial and entertainment facilities, services (e.g., Education, hospitals), mobility, or environmental resilience upgrades. Despite the efforts of the programs to include housing and public space aspects of an urban regeneration process, they do not have the scale and diversity in terms of scope to have an integrated and sufficient impact on the physical, social and economic areas of the communities that live there.

The chart shows that the district scale is not addressed in any of the two programs analyzed. At the street and block level, we see the two existing urban regeneration programs and at the municipal and regional level we have the “Plan Regulador Comunal” and the “Proyectos Urbanos Integrales (PUI)” which are zoning and investment instruments however they do not constitute urban regeneration programs.

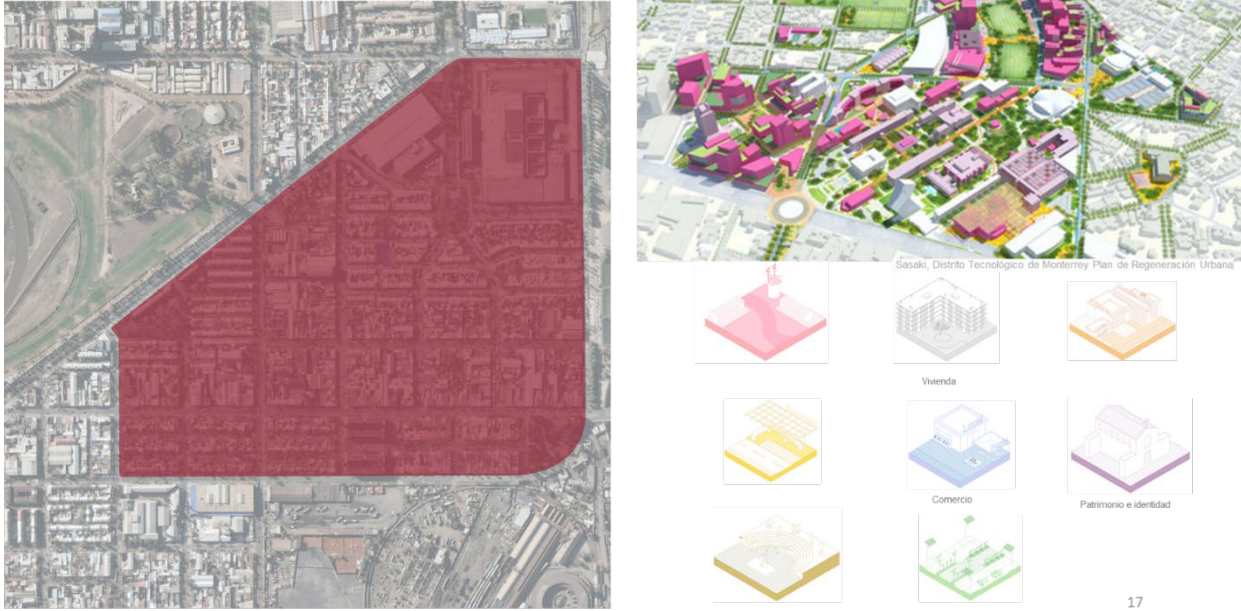
Proposal for Analysis of Instruments for Urban Regeneration



Source: Sebastian Salas, 2022

The figure shows how a potential urban regeneration program could work at a district level and necessary geographic scale to include the 8 aspects of an urban regeneration strategy.





Source: Sebastian Salas, 2022

The complexity of an urban regeneration process becomes evident. There is a need to work on (i) a framework of regulations necessary to address this type of urban intervention, (ii) having specific financial instruments and incentives to finance projects, (iii) creating governance mechanisms that foster collaboration and planning among different government levels and sectoral ministries (iv) and robust public participation process so the community can have meaningful input into the projects.

The Chilean institutional framework presents several challenges to foster urban regeneration process:

Limitations in governance: Urban regeneration programs are driven mainly from the central level, gradually evolving towards greater local empowerment, especially in the local context of public policies looking to strengthen regional governments and other decentralization measures. However, there needs to be more multisectoral integration of urban-scale interventions. The lack of coordination between different programs and investment plans limits and reduces the positive effects on the intervention of territories. The weakness in urban governance to coordinate multi sectoral projects and the need for an entity that can work between different jurisdictions and sectorial ministers hinders the articulation

between public and private actors from making decisions concerning the development of investment projects that foster urban regeneration process.

Insufficiency of Financial Instruments: Most of the investment model in Chilean cities is set in a binary way between public or private action, without having specific financial instruments and mechanisms to address the urban regeneration process through private-public partnerships (Fuentes, 2020). Urban regeneration programs need financial instruments or incentive systems to foster public infrastructure development in areas that need to go through an urban regeneration process.

At the same time, the existing programs do not link the municipality's strategic vision, zoning plans, and capital investment needs with urban regeneration programs. One recognized best practice in municipal fiscal management is for a city to undergo a typically annual exercise of preparing a multiyear capital improvement plan. This plan would identify anticipated public infrastructure and investment projects and a financing approach for future regeneration initiatives (World Bank, 2022). Financial and zoning instruments such as tax incentives, construction bonuses, land value capture programs, and flexibility in permitted building uses are some strategies that could be implemented to foster and finance urban regeneration processes.

Community Participation: Public participation in planning is a mainstay of democratic governance and decision-making. By actively involving the whole community in making and implementing plans, the government fulfills its responsibilities to keep all citizens informed and to offer them the opportunity to influence those actions that affect them (Godschalk and Rouse, 2015 ). The existing programs ("Quiero mi Barrio" and "Regeneration de Conjunto Habitacionales") strongly emphasize the participation of the community, ensuring that the planning process actively involves citizens in analyzing issues, generating visions, and developing plans. What needs to be strengthened is the community's ability to monitor the outcomes of the regeneration process. At the same time, public participation processes usually only reach some segments of the community and may be viewed by public agencies more as a requirement to meet than as an opportunity to garner meaningful input from citizens on the development of projects.

### ***E. Study Case Urban Regeneration Partial Plans in Colombia***

Cities with the most sophisticated and successful regeneration projects have created the necessary institutional capabilities and programs to execute regeneration plans. One of Latin America's most emblematic programs of urban regeneration are “partial plans” in Colombia. These plans link an urban master plan with a real estate initiative, public facilities, and infrastructure required in a defined geographic area or “partial plan”; through a landowner’s participation scheme to obtain additional construction rights in exchange for affordable housing or infrastructure land supply or financial sources.

(Triveno, Velasco, Marulanda, 2018)



Plan Parcial Triángulo de Fenicia – Bogotá, JFP Asociados

### **LVC Instruments and Partial Plans-PP**

Colombian cities concentrate more than 75% of the population and 85% of the country's Gross Domestic Product (GDP) (World Bank, 2016). It is estimated that, over the next three decades, the demand for infrastructure and public services in all cities will increase by 10% (DNP, World Bank, 2012). According to

the World Economic Forum, the country is called upon to invest \$40 billion pesos (COP) in public infrastructure over the next ten years (Meera Narayanaswamy & Jordan Townswick Pace, 2016).

Partial Plans have been an essential tool for Colombia to regenerate neighborhoods and build public infrastructure by allowing local governments to capture a portion of the land value of future urban development through; Land use changes: land use conversion, higher densities, higher floor area ratios (FARs), zoning changes, and land readjustment or reconfiguration of a portion of land for sale. Partial Plans can establish that additional land use rights and maximum use of the land could be obtained in exchange for the construction of urban infrastructure or equity for public facilities inside the PP delimitation area, “charger and benefit system.”

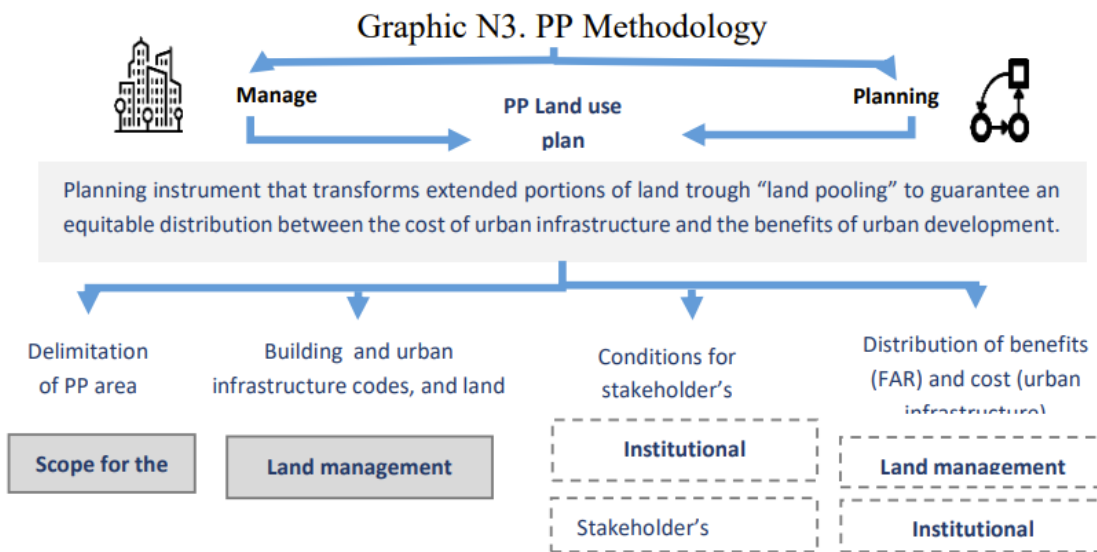
Partial Plans are executed through several urban development units- UAU-. The criteria for conforming a UAU inside a PP establishes the following:

- I. The minimum PP area will be 20 hectares in expansion land and 10 hectares in urban land with development treatment.
- II. For the delimitation of the urban development units it will be considered, the financial and economic conditions that make feasible the urban project, the property division, and other conditions technically defined in the Partial Plan will be taken into account.

Benefits and local charges of the Partial Plan are defined according to minimum urbanistic standards. The minimum requirements of Partial Plans indicate that:

- 25% of the net developable area is destined for the development of public space and equipment (17% and 8% respectively).
- A minimum of 15% of the useful area must be allocated for social interest or priority housing, and at least 10% of the net area must be allocated to the local road network.

One of the most relevant principles of partial plan is that they are based on a real estate cost and benefits analysis that guarantees a fair distribution of utilities and construction rights between the landowners of the “partial plan,” reducing the infrastructure burden for the new urban development. The instrument is implemented in regeneration and expansion areas and has produced almost 700 hectares of urban land in Colombia. (Triveno, Velasco, Marulanda, 2018)



Source: JFP Asociados, WB 2017

Plan Parcial Triángulo de Fenicia – Bogotá, JFP Asociados

Bogotá has been the most active cities in Colombia in implementing Partial Plans to address the housing and infrastructure needs in the country, with 50% of the approved Partial Plans of the country. As of March 2018 in Bogotá, 1284 hectares have been formulated and approved. The land has been intervened under (a) 90 Partial Development Plans, and (b) and five Partial Renovation Plans (40ha). The total of this ground clearance is equivalent to 890 ha of urbanizable net area, and more than 172 ha of public space. The Partial Plans have generated urban land for 110,091 homes, of which 85,506 correspond to social housing. (Triveno, Velasco, Marulanda, 2018)



### Lessons Learned of Partial Plans Adopted in Colombia

Partial Plans in Colombia have addressed many of the complexities of an urban regeneration process and can become a precedent and inspiration for urban regeneration programs in Chile. Partial Plans present a clear framework of regulations necessary to address this type of urban intervention, with specific financial instruments and incentives such as land value capture mechanisms to finance projects and governance structures that foster collaboration and planning among different government entities. Although the evident success of Partial Plans in Colombia, some areas of improvement are needed. There are possible financial gaps in the total PP project, which creates uncertain rules for urban developers related to their participation in financing the general infrastructure cost of the PP. At the same time, the adoption of PP in urban regeneration projects has yet to be as effective as PPs in urban and expansion areas. Among the reasons for the difficulties of regeneration in central areas are the highest cost related to additional urban infrastructure, the higher land value in central locations, fragmentation of land and business properties, and the interaction with multiple stakeholders. (Triveno, Velasco, Marulanda, 2018)

New mechanisms, such as transit-oriented development projects, could be explored in Colombia and Chile to address some of these complexities of urban regeneration in central areas. This type of program can help increase density while preserving affordable housing near transit, promoting multimodal transportation usage, and committing to incorporating health and equity criteria in both policy and project development. Legal structures to develop around transit stations and financial mechanisms such as tax increment bonds to promote redevelopment can play a relevant role in the execution of future projects.

## **Opportunities for Urban Regeneration Chile**

The objective of this chapter is to support the formulation of an Urban Regeneration Strategy (URS) to allow sustainable and inclusive development for Chilean cities— promoting efficient land use, maximizing agglomeration economies, and generating new economic opportunities for the local population. Urban regeneration projects stimulate local economic activity and promote the development of public governance capacity and strategic alliances with the private sector. Cities with the most sophisticated and successful regeneration projects have created the necessary institutional capabilities and programs to execute regeneration plans. Among key considerations are adequate governance structures, financing instruments, a legal framework for developing projects, and the essential training activities and technological capacity so public entities can develop, coordinate, and implement urban regeneration plans.

In the following chapter, an institutional framework for a potential urban regeneration program in Chile is proposed, and the necessary stages a program should consider. Finally, a multicriteria analysis of urban infrastructure, density, and accessibility criteria (e.g., access to parks, mobility) was done to analyze geographic areas with regeneration potential in the capital of Chile, Santiago.

## A. Institutional Changes

Category	Recommendations
<p><b>1   Governance:</b> Entities and structures to conduct urban regeneration processes.</p> <p><u>Type of entities</u></p> <ul style="list-style-type: none"><li>• Local government department</li><li>• Public authority</li><li>• Private entity with some public powers (quasi-public)</li><li>• Private entity with a contract with the city</li><li>• Private corporation that operates parallel to the government</li></ul> <p><u>Policy Recommendation:</u></p> <ul style="list-style-type: none"><li>• An integrated governance strategy (multi-scalar and cross-sectoral) should be considered to approach urban regeneration projects. The entity could be an independent corporation (quasi-public) led by a board of directors made up of the main public and private actors who will participate in the materialization of the project and will oversee monitoring the Master Plan, ensuring compliance with deadlines and goals, both physical and financial progress.</li><li>• A professional technical team should be appointed by the corporation to lead the implementation of the Plan, its management control, compliance with the goals and deadlines committed by the different actors and the materialization of the urban infrastructure projects that are part of the urban regeneration plan. The projects required having an advisory and management unit, which would coordinate and direct the multiple actions that the State and local governments must carry out through various agencies.</li><li>• In terms of local institutional capacity the PRES programs (Garces, 2018) to coordinate large recovery projects to rebuild Chilean cities affected by the 2010 earthquake can be an inspiration to adapt certain characteristics of disaster recovery entities' to create an urban regeneration program</li></ul>	<p>Cities with the most sophisticated and successful regeneration projects have harnessed municipal financial resources, taxing power and other government tools to create entities dedicated solely to attracting experienced public and private capital to achieve their goals of sustainable local economic development. The governance structures and the powers of the Local Economic Development Agencies normally depend on the vertical and horizontal distributions of political power in each .</p>
<p><b>2 Financial Instruments:</b> Mechanisms and instruments of public and private financing for the implementation of master</p>	<p>The future effectiveness of regeneration projects depends not only on the capacity to create adequate governance structures but also in the ability to create mechanisms and financial instruments so that the city, directly or indirectly, can receive part of the benefits of the projects.</p>



plans at the neighborhood level. Resources for physical, social, economic, and environmental interventions.

Most regeneration projects are structured – including those that contain significant public subsidies, such as tax abatements, capital grants, low-interest loans, and land write-downs – to provide a cash return to the city (or mixed entities)—working on behalf of the government. Over time, the initial subsidy can be recovered directly by the public sector and replaced through increased economic activity, tax revenues, increases in employment, and other economic impacts, generated throughout the city and region as a direct or indirect result of the project.

#### Reference Cases of Financial Instruments

- Contribución por Mejoras (e.g. Contribución por Mejoras – Argentina)
- Tasas por impacto (e.g. Cesiones Urbanísticas – Costa Rica)
- Bonos de densidad/Rezonificación (Outorga Onerosa do Direito de Construir – Brazil)
- Exacciones (e.g. Cargas Urbanísticas – Colombia)
- Reajustes de suelo (e.g. Planes Parciales, Unidades de Actuación Urbanística – Colombia)
- Transferencia de derechos constructivos (Transferência do Direito de Construir – Brazil)
- Incremento de impuestos (e.g. Titularización por Impuestos Futuros – Colombia)
- Distritos de mejoramiento comercial (e.g. Distritos Especiales de Mejoramiento y Organización Sectorial, DEMOS – Colombia)

#### Policy Recommendation:

- Under the concepts of rational nexus and participatory budgeting, existing financial instruments in Chile such as; “Ley de aporte al Espacio público” (Public Space Contribution Law), and “Planes Urbanos-Integrales” (Urban-Integral Plans), could be modified to include public infrastructure and affordable housing incentives for the areas where new developments will impact existing communities.
- The “Infrastructure Fund” created in Chile in the year 2018 can be a specific entity that could finance public infrastructure projects for potential urban regeneration plans.

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### 3| Legal Framework

A specific legal framework is needed to address a potential urban regeneration program

An adequate legal framework to develop an urban regeneration program should consider an adequate model for the development of complex projects, using in a coordinated and complementary manner the different urban and housing instruments/programs available in the existing Chilean institutionalality.

#### Reference Cases of Legal Framework

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- Partial Plans in Colombia -PP- are under a legal framework that allows for land use and land management instruments that define regulations for a specific urban development area. PP permits that local governments capture a portion of land value of a future urban development through:
  - Land use changes: land use conversion, higher densities, higher floor area ratios (FARs), and zoning changes
  - Land readjustment or reconfiguration of a portion of land for sale to raise funds to partially defray public infrastructure development costs.
- (Triveno, Velasco, Marulanda, Gustavo., 2018)

Policy Recommendation:

- The Ministry of Housing and Urban Planning recently approved (MINVU, 2020) a new “urban integration law” in response to the need to comprehensively renovate sectors affected by a high quantitative or qualitative housing deficit and urban segregation. The law opens an opportunity to promote processes of urban regeneration of neighborhoods and, eventually, an opportunity to create a new program to execute this type of project.
- “Artículo 88” in the urban integration law specifies the possibility of creating a Regeneration Master Plan as a management tool, promoted, and regulated by the Ministry of Housing and Urbanism (MINVU, 2020) and that must be formulated jointly with the community and the municipality.
- The integration law established a public land bank that could become a catalyst for urban regeneration strategies. The land bank opens an opportunity to develop public land strategically located within cities.

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4| Local Governments Capacity  
Strengthen the capacity of local governments to lead urban regeneration initiatives.

In general terms, local governments in Chile need more resources to fulfill their functions. The municipalities depend mainly on intergovernmental transfers to fund current and future investment expenses. These financial restrictions make it challenging to fulfill municipal responsibilities, including designing and implementing zoning or potential urban regeneration plans.

A set of policies and programs that could help strengthen the capacity of local governments to play a relevant role in urban regeneration projects are the following:

Policy Recommendation:

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- Designing a training and education program for municipal officials in urban law, territorial planning, and land management.
  - Urban and Territorial Planning Information System that allows municipalities to make territorial management more efficient and transparent using digital tools and new technologies. (SIG instruments)
  - A set of pre approved, specialized consultants and providers that could plan, design, and implement urban regeneration plans (e.g “Convenio Marco”)
- 

## **B. Proposal of Stages of an Urban Regeneration Program**

An urban regeneration program should present clear implementation and planning steps for its design and execution. A potential program should start with a precise analysis, addressing demographic, physical, and economic conditions to determine the land uses allowed for commercial, residential, and recreational activities. The program should also define a master plan for the regeneration area, including infrastructure investments, proposed design guidelines, and urban regulations, including heights, densities, dimensions (e.g., heights, setbacks, coverage), and building standards (e.g., parking, landscaping, facilities, services).

The key activities of the following section detail some of the relevant tasks that should be considered when planning for an urban regeneration project. The scope of each step is summarized below.

**Stage 1** | Comprehensive analysis, addressing institutional, sociodemographic, infrastructure, economic, environmental, cultural, and climatic aspects.

- A holistic diagnosis of the existing conditions and deficits in the regeneration area must be carried out.
- Once the territorial diagnosis is developed, the following items should be defined:
  - The objectives, goals, and policies of the intervention.

- Key stakeholders and communities that will be impacted
- The public services, instruments, and private actors that could intervene in the project.
- Possible instruments and/or incentives to be used or proposed
- Legal and regulatory feasibility
- Prioritization of potential projects for the master plan proposal.

**Stage 2 | Public consultation process and formulation of the regeneration master plan.**

- To elaborate the master plan, a citizen consultation process should be done. The process must include interviews, focus groups, and workshops with key actors from the public and private sectors, NGOs, and civil society groups to incorporate the vision, experience, and perceptions of citizens.
- The participatory process and the diagnosis done in stage 1 should lead to defining multiple interventions (urban, sociodemographic, economic, environmental and climate, cultural, rural) and objectives (specific, measurable, realistic, and achievable) with clear goals, indicators and policies to fulfill each of the goals proposed.

**Stage 3 | Zoning proposals for real estate and public infrastructure development.**

- Analysis of land capacity and demand to accommodate future population growth by land use: public space, commerce, office, industry, residential, community services, recreational, transportation/mobility, main services and public infrastructure, others. (e.g, number of existing and needed homes per inhabitant; industrial hectares per employee; m2 of commerce/retail per inhabitant; schools and hospitals per 1,000 inhabitants; energy, and water consumption).
- Prepare plans, exploring different zoning alternatives, where land uses, densities, setbacks, heights, coverage, and other characteristics to be included in the urban ordinances are defined.

The definition of the zones must encourage sustainable and resilient development and the reduction of CO2 emissions.

- Develop form-based code guidelines which graphically synthesize the relationship form of buildings and the relationship of buildings to each other and the public areas.

#### **Stage 4 | Analysis of public investments and economic impacts of the Regeneration Plan**

- Fiscal impact analysis seeks to connect planning and the local economy by estimating public costs and revenues from real estate and public infrastructure investments. A capital investment plan would describe the city's policies and financial abilities to manage the investment needs associated with its spatial development and the built environment.
- Key financial policies might include goals or guidelines for critical financial management metrics, such as the percentage of the annual budget to be committed to capital improvements, metrics to limit the size of annual debt service, and limits on total outstanding debt.
- Sources and use of financial resources with the corresponding investment analysis for each project. Compare the revenues with the costs associated with the project, indicating whether the local government can meet the new demands for services and public infrastructure.
- Estimating the annual benefits (economic and social) of the urban regeneration proposal (e.g., collection of property taxes, sale of municipal land, generation of new jobs, reduction of the housing deficit.)

#### **Stage 5 | Execution of the Regeneration Plan and continuous evaluation of goals achievements.**

- Once the master plan and the investment analysis are formulated, sectoral and intersectoral agreements among different actors should be defined, specifying each sector's contributions and responsibilities according to the projects in the master plan.

- It is necessary to implement ways of measuring the plans' success, impacts (e.g., variations in the value of the square meter of land, rental prices in the sector), and level of advance over time, with systematic evaluation of the results and a policy that allows for continuous improvement of the program.

**C. Identification of areas with potential for urban regeneration in the AMS.**

The following section is a multicriteria analysis of urban infrastructure, density, and accessibility criteria (e.g., access to parks, mobility) to define geographic areas with urban regeneration potential in the capital of Chile, Santiago.

**Indicators:**

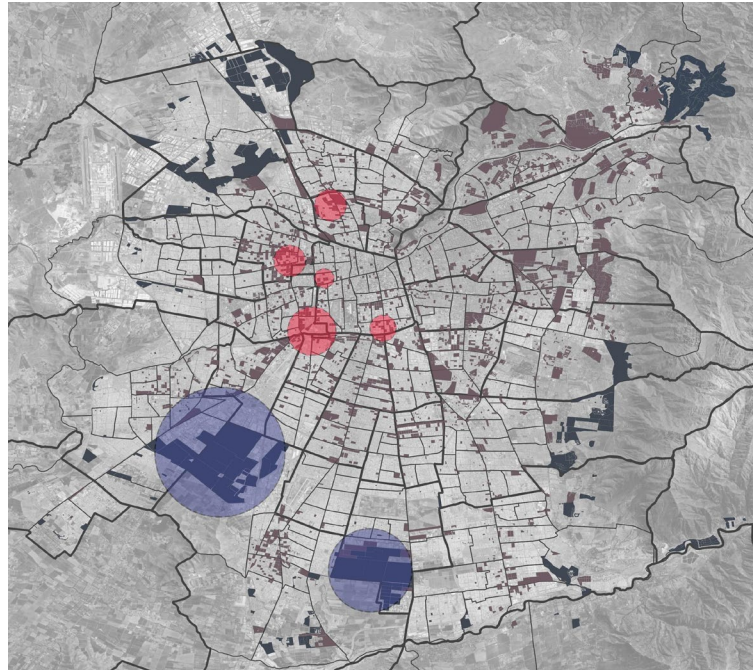
Density:	<ul style="list-style-type: none"> <li>• Inhabitants per m2</li> </ul>
Urban Deterioration:	<ul style="list-style-type: none"> <li>• Quality of Streets</li> <li>• Quality of Green Areas</li> </ul>
Accessibility	<ul style="list-style-type: none"> <li>• Green Areas Indicator</li> <li>• Sports Equipment Indicator</li> <li>• Cultural Equipment Indicator</li> <li>• Health Equipment Indicator</li> <li>• Public Services Indicator</li> <li>• Education Services Indicator</li> <li>• Public transport</li> </ul>

## Chile Map



## Metropolitan Region Proposed Urban Regeneration Areas:

Source: *Sebastian Salas, 2022*



### Short Term Regeneration

Low Density:  
High Urban Deterioration:  
High Accessibility

### Long Term Regeneration

Low Density:  
High Urban Deterioration:  
Low Accessibility

The identification of geographic areas where potential urban regeneration projects could be developed was carried out through a multicriteria analysis in the QGIS software. For this analysis we use geospatial data at the block level for the Santiago Metropolitan Area (AMS) from two secondary sources: the National Institute of Statistics (INE) and the Center for Territorial Intelligence (CIT). From these data we elaborate a new database and geospatial layer that brings together, through a spatial union, some variables and their respective reclassifications that are relevant for urban regeneration. Table 1 of annexes summarizes

the selection of variables, their source and the reclassification code used in the QGIS software for the multi-criteria analysis detailed below.

Specifically, the variables considered were divided into three dimensions: i) residential density, measured in number of people per hectare; ii) quality of the urban infrastructure, measured by the proxy quality of the sidewalks; and iii) accessibility to services and equipment; measured based on the accessibility index prepared by the CIT. Three criteria are derived from these variables, called levels of urban regeneration potential, both in the short and long term. The criteria are structured in five levels, where the value 5 indicates the highest level of regeneration potential, while the value 1 refers to the lowest level of regeneration potential. Finally, we built an urban regeneration potential index based on the sum of these three criteria. The values of this index vary discretely between 3 and 15, where higher values indicate greater regeneration potential, on the contrary, lower values indicate less regeneration potential.

Specifically, each criterion is structured as follows. First, in the case of residential density, the value 5 indicates the lowest density levels and 1 the highest. Second, regarding urban infrastructure, the value 5 refers to the lowest quality level and 1 the highest. Thirdly, accessibility is subdivided into short-term and long-term criteria. In the case of the first, the values 5 refer to the highest levels of accessibility and 1 to the lowest, whereas in the second, this assessment is reversed, with 5 the lowest accessibility levels and the highest. The logic of changing the criterion of accessibility in the short and long term is that investments in services and equipment depend on supra-municipal governance structures, it being more feasible to think of regeneration in the short term in areas where accessibility is covered. In this way, high levels of accessibility have a greater potential for regeneration in the short term, while low levels have a greater potential for regeneration in the long term. Tables 1 and 2 summarize the criteria used to calculate the index.



## Discussion and Conclusion

Addressing the increasing housing deficit, neighborhood deterioration, and social-spatial segregation in Chilean cities has become a national priority and an urgent need for equitable, prosperous, and sustainable development of cities. New and improved regeneration programs and policies are needed to transform deteriorated urban areas into neighborhoods with better transport housing, open spaces, public infrastructure, and opportunities for residents and local communities.

The research shows how regeneration initiatives in Chile have overlooked critical social factors and infrastructure needs that enable equitable development and social mobility. The Urban Renovation Zone Program developed in the 90's in the center of Santiago was not understood as a process, where physical, economic, and social objectives must converge. The lack of an urban regeneration policy framework to mix and match a variety of strategies consistently and simultaneously over time led to a repopulation plan that in 30 years was not able to recompose structural, physical, and social elements of deteriorated areas.

Existing programs such as "Quiero mi Barrio" and "Regeneración de Conjuntos Habitacionales", need to improve and rethink what urban regeneration programs should achieve. The state's urban regeneration programs have shown exemplary achievements in many cases, but the scale of the cities deficit is of such magnitude that new and more robust programs must be created. This requires more attention to the scale of the programs to address not only housing and public space, but the eight aspects mentioned earlier involved in an urban regeneration process (Public Space, Housing, Mobility, Environmental Resilience, Urban Amenities, Infrastructure and Services, Commerce, Historic Preservation, Community Engagement) and the necessary institutional framework to develop urban regeneration process.

As stated previously, the Chilean Urban Development Council establishes that the urban regeneration process should seek to recompose the structural elements of a neighborhood to ensure better access to

housing, goods, and public services. Programs should consider various aspects of the urban fabric to address a highly complex process where physical, economic, and social objectives must converge.

Cities with the most sophisticated and successful regeneration projects have created the necessary institutional capabilities and programs to execute regeneration plans. Among the proposed recommendations to achieve are an integrated governance strategy (multi-scalar and cross-sectoral), mechanisms and instruments of public and private financing for the implementation of master plans a legal framework for developing projects, and the essential training activities and technological capacity so public entities can develop, coordinate, and implement urban regeneration plans.

Providing proper infrastructure and services for water, sanitation, transport, and green spaces is a challenge faced by multiple Latin America cities. The LATAM region is becoming one of the most urbanized areas in the world: 73 percent of the population in the LATAM region lives in cities, relative to 70 percent in the world. The region includes 7,197 cities, which are home to 433 million people. Cities vary in size, from megacities such as Sao Paulo or Mexico City with populations of around 20 million, big cities like Bogota and Santiago with populations of about 8 million, to smaller ones such as Asuncion with approximately 2 million. However, they all share the need for the regeneration of deteriorated areas. There is a need to implement a more nuanced framework for Chile and Latin America regeneration initiatives. With an immediate policy focus on cities with that are under pressure to quickly develop more housing and urban infrastructure for middle income families facing financial distress, vulnerable residents and new waves of migrants facing extreme challenges throughout the Latin American region.

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